

United States Government

Department of Energy  
Richland Operations Office**memorandum**

DATE: SEP 30 2004  
REPLY TO  
ATTN OF: SED:CAA/04-SED-0140  
SUBJECT: ELECTRICAL SAFETY PERFORMANCE CHALLENGES AND GOALS

TO: Paul M. Golan, Acting Assistant Secretary  
for Environmental Management  
EM-1, HQ

This is in response to the July 13, 2004, memorandum from J. H. Roberson, same subject, which requested a review of electrical safety data and development of corrective actions to improve performance. Please find attached RL Surveillance Report, S-04-SED-FHI-014, that documents our electrical safety review. Please also find attached the Fluor Hanford, Inc. (FHI) response to the RL surveillance report which describes the underlying causes, and corrective action taken/planned to prevent recurrence. RL will verify completion of corrective actions and will continue to monitor contractor performance to evaluate the effectiveness of the corrective actions.

During the RL electrical safety review conducted in May 2004, Bechtel Hanford Incorporated (BHI) had only one documented electrical safety event, which occurred at a groundwater facility in April 2002. Since then, the management of this groundwater facility was transferred to FHI. Based on this, it did not seem necessary for BHI to improve their electrical safety program as it appeared adequate. However, very recently, BHI has had two electrical near miss incidents involving the use of heavy equipment and 480 volt and 13.8 kvolt electrical power cables/lines. These two events, along with several other heavy equipment incidents, have resulted in a notification to BHI of a fee reduction. Corrective actions that result from these incidents will be forwarded to EM once finalized.

If you have any questions, please contact me, or your staff may contact Doug S. Shoop, Acting Assistant Manager for Safety and Engineering, on (509) 376-0108.

  
for Keith A. Klein  
Manager

Attachment

cc w/attach:  
P. M. Bubar, EM-3.2  
T. M. Tracy, EM-3.2

# Department of Energy Richland Operations Office Surveillance Report

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**Division:** Safety and Engineering Division (OOD)

**Surveillant:** C. A. Ashley (SED)  
B. A. Biro (OOD)  
D. C. Humphreys (SED)

**Surveillance Number:** S-04-SED-FHI-014

**Date Completed:** May 26, 2004

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**Contractor:** Fluor Hanford, Inc. (FHI)

**Facility:** All

**Title:** Corrective Action/Issue Management & Continuous Improvement

**Guide:** Management System Surveillance 1.1

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## **Surveillance Scope:**

This surveillance evaluated FHI management effectiveness to identify and correct electrical safety issues to avoid recurrence.

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## **Surveillance Summary:**

The surveillance team, led by the RL Electrical Subject Matter Expert (SME), evaluated a total of nineteen electrical safety related occurrence reports from January 2002 to May of 2004, including the causes and associated corrective actions that were identified in the individual occurrence reports. Each of these events was identified (key word or nature of occurrence) as a electrical near miss and/or a lockout/tagout issue and had to do with the failure to identify or control hazardous electrical energy. The team found that in most cases the FHI corrective actions resolved the problems for the specific facility/project where the event took place. However in several instances the corrective actions did not prevent a recurrence of similar events at other FHI facilities. Of the nineteen occurrences reviewed, six were related to incorrectly wired systems (as built and/or drawings incorrect) or defective equipment. In one case, one facility/project had similar electrical safety events occur within a few months. From a failure to identify or control electrical

hazardous energy perspective, the occurrences reviewed during this surveillance indicated an increasing trend for CY-2004. If this trend continues at the current rate, the total number of electrical events for CY-2004 could exceed that of CY-2003.

- **S-04-SED-FHI-014-F01:** Corrective actions taken by FHI management to resolve electrical safety issues are not effectively avoiding recurrence across the Project Hanford Management Contract facilities.

The Finding documents a deficiency that is significant enough to warrant requesting a corrective action management plan compliant with the SCRD for DOE O 470.2B.

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#### **Surveillance Results:**

##### **Finding: S-04-SED-FHI-014-F01**

**Corrective actions taken by FHI management to resolve electrical safety issues are not effectively avoiding recurrence across the Project Hanford Management Contract facilities. (QA-IMPRV, IS-ELECT, ISMS-IDHAZ, ISMS-ANLYZE, ISMS-FEEDBACK)**

##### **Requirement(s):**

10 CFR 830.122 *Quality Assurance Criteria*, (c) Criterion 3 *Management/Quality Improvement*, paragraph (3) states, "Identify the causes of problems and work to prevent recurrence as a part of correcting the problem."

HNF-PRO-052 Rev. 10, *Corrective Action Management*, 4.0 *Requirements*, paragraph 4.2.3. states, "The cause of a problem shall be identified and corrective actions to attempt to prevent recurrence shall be implemented for Significant issues as part of correcting the problem." Paragraph 5.14.1 *Verification of Corrective Action Management Program* states, that FH QA will "Perform periodic overviews to determine effectiveness of corrective actions in accordance with HNF-PRO-9769, *Surveillance Process*, and/or HNF-PRO-9662, *Independent Assessment Process*."

##### **Discussion:**

Since October 2001, FHI had 19 electrical safety occurrences due to a failure to recognize or control hazardous electrical energy (both personnel issues and equipment and/or as built conditions).

Outlined below is a brief summary of related occurrences and associated corrective action for the 13 events that were for the most part due to either a lack of procedure or process, or non-compliance with existing procedures.

## CY – 2004 to date

- RL-PHMC-SNF-2004-0019: During trouble shooting of a just replaced sump pump the problem was identified and the repair made without authorization. ORPS report not finalized. Initially identified as a lock and tag event, subsequent investigation has revealed the cause is most likely related to a work control, specifically in the area of troubleshooting and repair. No corrective actions listed.
- RL-PHMC-SNF-2004-0008: At CSB while installing a paper towel dispenser carpenter screwed into an energized line (located behind the mounting wall). Failure to determine hazardous energy during the planning phase. Corrective actions: 1) Brief CSB and PIC on the event; and 2) Issue lessons learned to SNF personnel and FHI Lessons Learned Coordinator. No other corrective action was taken outside of the SNF project to avoid recurrence.
- RL-PHMC-FFTF-2004-0001: Worker received an electrical shock during the removal of a module from an energized electrical panel while working under a J-3 (no planning required) with no pre-job briefing. The root cause was determined to be a failure by the worker to follow the required electrical safety work practices. Corrective actions: Seven total, all facility/project specific actions.

## CY-2003

- RL-PHMC-WRAP-2003-0007: Single point Authorized Worker Lock (AWL) installed on wrong component. Discovered as a result of the safe to work check. Multiple “root” causes mostly related to human error along with contributing factors due to labeling confusion. Multiple corrective actions 12 total, all facility/project specific related except for issuance of a lessons learned and AWL documentation method development.
- RL-PHMC-SNF-2003-0041: Cut through of sump pump piping heat trace during insulation removal. Heat trace not clearly identified on drawings; only a note referencing “freeze protection”. Root cause was identified as a deficiency in the planning, scoping, assignment, or scheduling. Failure to recognize the meaning of the freeze protection note. Corrective actions: 1) Issue lessons learned; 2) Review lessons learned regarding the Job Hazard Analysis (AJHA) with SNFP Planners; and 3) Review lessons learned with SNFP insulators. No other corrective action was taken outside of the SNF project to avoid recurrence.
- RL-PHMC-CENTPLAT-2003-0026: Self reporting of two instances where installed locking devices either came loose or fell off. Root Cause: Design problem. Corrective actions: 1) Issue lessons learned; 2) Review other 233-S facilities for similar potentials for this occurrence; 3) Evaluate other options for locking breakers inside weather-tight panel boxes; 4) Notify Electrical Safety Board of the issue; and 5) Consult FHI interpretative authority on need to issue a safety alert. No other corrective action was taken outside of the CP project to avoid recurrence.

The lessons learned in the occurrence report stated that “There is no single clear-cut option for installing locking devices, locks, and tags on breakers with panels

that will prevent all occurrences of inadvertent breaker operations.” With this approach and the lack of adequate corrective action in the first occurrence, it is unclear how effective this is to avoid recurrence.

- RL-PHMC-CENTPLAT-2003-0022: Lock installed incorrectly; did not prevent operations of breaker. Noticed after work complete when removing, the Lock was installed on panel door latch mechanism, and not on breaker. Problems with event notification also noted. Root Cause: Personnel error inattention to detail. Corrective action: 1) Reinforce notification requirements at CENTPLAT; and 2) Request Hazardous Energy Control procedure revision team to evaluate current independent verification process. Note: this was not a case of independent verification problems, but a case of personnel failing to understand how to lock out a component, a training or qualification issue. A similar event at K-West in 2002 (RL-PHMC-SNF-2002-0025; discussed below) is an example of corrective actions not preventing recurrence possibly due to only facility/project specific actions being taken to prevent recurrence.
- RL-PHMC-CENTPLAT-2003-0011: Multiple electrical related LOTO safety violations; No AWL installed as required to perform electrical work. When asked the craft found it necessary to install the AWL even though work was already in progress. Root Cause: Management problem with contributing factors of personnel error. Corrective actions: 1) Perform 100% audit of 233-S Project LOTO, 2) and complete administrative actions; 2) Review 233-S Project controlling organization configuration control and LOTO guidance for audit adequacy; 3) Brief Central Plateau (CP) Maintenance Group; 4) Perform management self-assessment of CP lock and tag occurrence reports; and 5) Develop lessons learned based on the self-assessment findings. No other corrective action was taken outside of the CP project to avoid recurrence.
- RL-PHMC-SNF-2003-0018: Electrical power cord restraining device (metallic) shorted across its exposed male end plug terminals damaging outlet. This occurred after Telescoping Stiffback (TSB) operations. The female end was pulled from the stiff back, rolled up, and placed on the outlet box (routine practice). Root cause: Inadequate or defective design. Could easily have been analyzed as a performance issue. You should not routinely unplug a component power cable from the powered unit without unplugging from the outlet supply. Corrective action: 1) Install non-conducting sleeving over restraint on the TSB hoists; and 2) Submit lessons learned. No other corrective action was taken outside of the SNF project to avoid recurrence.
- RL-PHMC-CENTPLAT-2003-0002: Lock and Tag installed on wrong component; noticed during system walk down for upcoming job. Past audits of installed lock and tag noted that it was installed on correct breaker. Root Cause: Personnel error. Corrective Actions: 1) Review AJHA for the job; 2) Define minimum communication requirements in CP Project administrative document; 3) Brief CP electricians on the event; 4) Brief CP electrician on event reinforcing stop work authority; and 5) Brief 233-S Project work planners on event reinforcing the requirements of HNF-PRO-081. No other corrective action was taken outside of the CP project to avoid recurrence.

## **CY-2002:**

- RL-PHMC-ANALLAB-2002-0009: Non-isolated 120 VAC energy source identified while in the process of replacing a Halon control panel in 222-S Laboratory. Energy source was not identified in the work package as a potential hazard. Root causes: 1) Inadequate hazard identification process used, and 2) No field verification performed. Contributing causes: 1) Inadequate or defective design – drawing did not identify energized wires. Corrective actions: 1) Drawing updated; 2) Fire Systems Maintenance staff briefed on the event; 3) Analytical Services Engineering Manager briefed engineering staff; and 4) Critique and report provided to Hanford Workplace Electrical Safety Board. No other corrective action was taken outside of the 222-S facility to avoid recurrence.
- RL-PHMC-SNF-2002-0030: Electrical work performed without proper LOTO. Root cause: Personnel error. Corrective actions: 1) Personnel action; and 2) Evaluate SNF LOTO events beginning in 2001.
- RL-PHMC-SNF-2002-0025: Lock and tag installed incorrectly. Lock installed preventing opening of panel not operating of breaker. Root cause: Personnel error procedure not used. Corrective actions: 1) Personnel action; and 2) Brief SNF SOEs on importance of correct lock and tag installation. No other corrective action was taken outside of the SNF project to avoid recurrence.

**Since January 2002, FHI had 6 electrical safety occurrences that were caused by incorrectly wired and/or defective electrical equipment.**

## **CY-2004 to date**

- RL-PHMC-PFP-2004-0006: Engineer received electrical shock (from a 63 Volts AC circuit) during routine replacement of Leak Detector Batteries. Root cause – faulty charger unit. Corrective actions: none listed.
- RL-PHMC-SNF-2004-0014: Glycol Heater Fan Motor discovered emitting smoke, sparks, and flames while operating. No root cause identified. No corrective actions listed.
- RL-PHMC-CENTPLAT-2004-0001: Subcontractor received electrical shock (from a 90 Volt DC circuit) while preparing a hydraulic power pack for operation. Identified causes: 1) Not fabricated as designed; and 2) Less than adequate pre-work check or pre-use inspection. Corrective actions: 1) Notify supplier of deficient item; and 2) Prepare issue identification form and associated lessons learned. No other corrective action was taken outside of the CP project to avoid recurrence.

## **CY-2003**

- RL-PHMC-CENTPLAT-2003-0027: Vendor supplied portable electrical generator incorrectly modified by rental based upon request by facility for an external 120 VAC GFCI. As received the generator power supply switch was selected to 277 volt position. The operators did not verify proper switch lineup

due to the assumption that the generator was wired and set-up to supply 120 volts. 277 volts was applied momentarily during a test of a 120 Volt core drilling tool. Usage was stopped and no personnel or injury occurred. Root cause: Management problem, no requirement for a prior to use inspection. Corrective actions: 1) Investigate CP turnover process for functionality check prior to or during the turnover process; 2) Evaluate CP acquisition of rental equipment process; 3) Issue lessons learned for proper initial inspection and turnover; 4) Request FHI Safety and Health &H evaluate this issue as a programmatic issue regarding rental equipment; and 5) Coordinate with Hanford Site Electrical Board (HSEB) to issue a compliance guide supplement to the HESB regarding acceptance of rental equipment.

This occurrence report references a past report (RL-PHMC-WRAP-2000-0005) as a similar occurrence. The corrective actions applied to the 2000-0005 event were as follows: "Management will issue an internal memo to the appropriate facility staff, requiring that all rental equipment brought to the Waste Receiving and Processing (WRAP) facility be inspected for normal operation and properly wired electrical receptacles." This is an example of the failure of the corrective actions to prevent recurrence possibly due to the facility/project specific nature of the action.

## **CY-2002**

- RL-PHMC-WRAP-2002-0003: During troubleshooting activities at the WRAP facility a facility electrician noticed the established lock and tag would not prevent operations of the conveyor in the "shake" mode. Investigation revealed that the existing essential drawings did not reflect this. Root cause: Management Problem, initial walk-down of the as-built drawings did not catch this error. Corrective actions: 1) Verify panel schedule; 2) Install temporary label followed by installation of permanent label; and 3) Issue FMP for panel update.
- RL-PHMC-200LWP-2002-0001: While servicing HVAC equipment a maintenance technician was exposed to an energized source; the technician discovered the energized source during the HVAC maintenance operation. Root cause: Design Problem; the energized line was an as-built condition and was not caught during acceptance inspections. The facility drawings reflected what should have been not what was. Corrective actions: 1) Remove control circuit; 2) Brief all Refrigerator Electric Service personnel; 3) Notify other facilities of the event; and 4) Install lock and tag to isolate system (this action was actually part of the immediate action taken to place component in a safe condition.)

Each of the above events resulted in a electrical near miss and/or a lockout/tagout issue as identified within the "Nature of Occurrence" or "HQ Keyword" for each occurrence report reviewed. Even though not all of the events are exact recurrences of past events, the corrective actions, except for the issuance of lessons learned, are facility/project specific in nature and by themselves will not prevent a recurrence at other FHI facilities.

RL Lead Assessor Closure Required:

YES

NO

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**Contractor Self-Assessment:**

In an effort to reduce the number of repeat occurrences, FHI has been proactive in self-assessing repeat occurrences, and making improvements to their work control processes. An example is the significant effort by FHI during the last nine months to create a single lockout/tagout procedure (HNF-PRO-081). This effort resulted in the training of over 2000 employees, which have resulted in a reduction of lockout/tagout occurrences. However, based upon the facts brought out in this surveillance, FHI needs to apply this same level of effort to improve all aspects of hazardous energy control.

Previous revisions of HNF-PRO-052, paragraph 4.2.6 required that the "FH QA organization shall perform periodic overviews to determine effectiveness of corrective actions." However the most current revision (Rev 10, dated November 3, 2003) now requires FH QA to "Perform periodic overviews to determine effectiveness of corrective actions in accordance with HNF-PRO-9769, Surveillance Process, and/or HNF-PRO-9662, Independent Assessment Process." Under this current procedure, only issues with safety significant levels one and two warrant effectiveness verification/validation by FH QA. However from the 19 electrical safety related occurrences reviewed (5 during 2002, 9 during 2003, and 5 to date during 2004), we could possibly expect to see up to 11 electrical safety occurrences this year. With the increasing trend of electrical safety related occurrences, the HNF-PRO-052 procedure is not effective in avoiding recurrence.

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**Management Debriefed:**

Susan Kelley (FHI)

Chuck Wolfe (FHI)

Susanne Kooiker (FHI)

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## CORRESPONDENCE DISTRIBUTION/REVIEW COVERSHEET

**DATE DUE TO RL:** September 20, 2004

**Contact Person:** K. C. Peterson

**Phone No.:** 376-8059

**Date:** SEP 20 2004

**Author:**  
R. G. Gallagher  
D. M. Busche

**Addressee:**  
K. A. Klein, RL

**Correspondence No.:**  
**FH-0402324A R1**  
**Contract No.:** DE-AC06-96RL13200

**SUBJECT:** SAFETY AND ENGINEERING DIVISION (SED) REACTIVE SURVEILLANCE REPORT S-04-SED-FHI-014, CORRECTIVE ACTION/ISSUE MANAGEMENT AND CONTINUOUS IMPROVEMENT- RESPONSE SUBMITTAL

### INTERNAL DISTRIBUTION (attach additional sheet if needed)

Name	Location	w/att	Name	Location	w/att
Correspondence Control	A3-01	X			
J. R. Bell	A0-23	X			
S. M. Kelley	A3-03	X			
S. L. Kooiker	H8-20	X			
C. A. Salinas	R3-30	X			
C. J. Wolfe	H8-20	X			

Review/Approve <small>(Internal Distribution should also include those listed below)</small>	Location	w/att	Comments		Date	Comments Incorporated		Date
			Yes	No		Yes	No	
M. Belles <i>[Signature]</i>	R3-62	X		X	9/16/04			
kp D. M. Busche <i>[Signature]</i>	H8-20	X		X	9/16/04			
D. T. Carter <i>[Signature]</i>	H8-67	X		✓	9/16/04			
G. B. Griffin <i>[Signature]</i>	H8-20	X	X		9/15/04	X		9-16-04
H. Hermanas <i>[Signature]</i>	B3-70	X		✓	9/17/04			
Prime Contracts								
M. S. Strickland <i>[Signature]</i>	B3-70	X		X	9/17/04			
Office of the President <i>[Signature]</i>	H5-20	X		X	9/21/04			

**Commitment Date(s)/Action** (Identify ALL external commitments, actions, and target completion dates in the letter and any attachments):

None

### EXECUTIVE SUMMARY (when needed)

The purpose of this letter is to provide the FH response to the Safety and Engineering Division (SED) Reactive Surveillance Report S-04-SED-FHI-014, Corrective Action/Issue Management and Continuous Improvement letter received by FH on Aug. 5, 2004.

Fluor Hanford  
P.O. Box 1000  
Richland, Washington 99352

# FLUOR

FH-0402324A R1  
CONTRACT NUMBER DE-AC06-96RL13200

SEP 20 2004

Mr. Keith A. Klein, Manager  
U.S. Department of Energy  
Richland Operations Office A7-50  
Post Office Box 550  
Richland, WA 99352

Dear Mr. Klein

**SAFETY AND ENGINEERING DIVISION (SED) REACTIVE SURVEILLANCE  
REPORT S-04-SED-FHI-014, CORRECTIVE ACTION/ISSUE MANAGEMENT AND  
CONTINUOUS IMPROVEMENT- RESPONSE SUBMITTAL**

Reference: Letter, K. A. Klein, RL, to R. G. Gallagher, FH, "Contract No. DE-AC06-96RL13200 - Safety and Engineering Division (SED) Reactive Surveillance Report S-04-SED-FHI-014, Corrective Action/Issue Management and Continuous Improvement," 04-SED-0077, 0402324 A, dated July 30, 2004.

This letter provides the FH response to the reference letter wherein RL directed FH to develop and submit a corrective action plan to identify and correct electrical safety issues to avoid recurrence.

A barrier analysis was conducted for the one finding that was identified as well as the surveillance results that are cited in the reference. This review provided evidence of crosscutting issues and areas requiring improvement in the FH Corrective Action Management (CAM) program, work management and electrical safety programs. This information also enhanced the corrective action plan development for the issues.

The Corrective Action Plan provides an Executive Summary, a current status of the three programs that directly interface to form the electrical safety program, identification of the issues that were identified, and a summary of the corrective actions. The attachment provides the Significant Issue Document form, including the causal analysis, evaluation results and corrective action plans.

Mr. Keith A. Klein  
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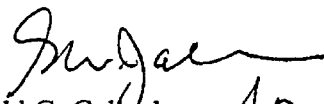
FH-0402324A R1

FH concluded that in most cases the FH corrective actions developed in response to the individual events cited resolved the problems for the specific facilities where the event took place, however in several instances the corrective actions did not prevent a recurrence of similar events at other FH facilities. While some of the programs listed above have received significant attention in the last year, the execution of those processes still requires improvement.

FH recognizes the need for continuous improvement and has identified areas for future process enhancements.

Technical questions may be directed to S. L. Kooiker on 372-3101; contractual questions may be directed to M. S. Strickland on 372-8388.

Very truly yours,

  
Ronald G. Gallagher  
President and  
Chief Executive Officer

kcp

Attachments - 2

RL - D. S. Shoop  
S. A. Sieracki (w/o attachment)

**RECEIVED**  
SEP 20 2004  
**DOE-RL/RLCC**

FH-0402324A R1

ATTACHMENT 1

Corrective Action Plan

9 Pages, including this sheet

## **Corrective Action Plan (CAP) in response to the Safety and Engineering Division (SED) Reactive Surveillance Report S-04-SED-FHI-014, Corrective Action/Issue Management and Continuous Improvement**

### **Executive Summary**

DOE-RL surveillance S-04-SED-FHI-014 documents the evaluation of FH management effectiveness to identify and correct electrical safety issues to avoid recurrence. RL concluded, based on 19 electrical safety related occurrences reviewed that these trends indicate without proactive positive change to the processes and performance, FH will experience an unacceptable increasing trend in the number of electrical safety related occurrences. This may indicate that FH management and the HNF-PRO-052, *Corrective Action Management*, procedure may not be effective in avoiding recurrence.

A team of subject matter experts from FH evaluated the 19 occurrences contained in the surveillance and it was determined that the occurrences can be grouped into three general categories; lock and tag, work planning and electrical safety. All three areas were examined in the causal analysis. Many actions have been taken in these areas in the last year in an effort to correct problems that resulted in the occurrence reports. The current status of the actions is summarized in the next section.

During the review process the team found that in most cases the FH corrective actions resolved the problems for the specific facilities or projects where the event took place. There were a few actions that were instituted on a site wide basis. However, in several instances the corrective actions did not prevent a recurrence of similar events at other FH facilities.

While some of the processes have received significant attention in the last year, the execution of those processes still requires improvement. The team has identified several corrective actions to improve the overall electrical safety process at FH facilities. The corrective actions are linked to the issues in a matrix later in this document. The formal causal analysis and detailed corrective action information is attached in the Significant Issue Documentation.

### **Review Strategy**

To gain an understanding of the issues, the team looked at each of the three categories to determine the current status of the improvements that have been put in place. The development of successful corrective actions is dependent on an understanding of the current program.

There have been many positive changes to the lock and tag program as well as the work planning program in the last year. Both processes have had a single FH wide procedure issued to make the processes consistent between facilities. The revised lock and tag process has been in place a little longer than the work planning process and therefore has had more time to mature. The status of each of these categories is summarized below.

## Current Status of the Lock and Tag Program

RL acknowledges that the significant effort by FH to make changes to the lockout/tagout procedure and program in the last year has resulted in a reduction of lockout/tagout occurrences. Based on this surveillance, DOE states that FH needs to apply this same level of effort to improve all aspects of hazardous energy control.

The revised lockout/tagout program was implemented on December 1, 2003. A complete re-write of HNF-PRO-081, *Lockout/Tagout*, was completed by a team of FH and DOE personnel. The team consisted of several lock and tag administrators and bargaining unit personnel, all of whom are qualified in the lock and tag process. DOE personnel were actively involved in the process and provided final approval of the procedure. The previous version of HNF-PRO-081 only conveyed the 29 CFR 1910.147 compliance of the personal locking device without incorporating the DOE Order requirements for the controlling organization use of Danger-Do Not Operate tags. The new revision incorporates all of the requirements and provides a process to utilize both types of tags.

A single point of contact (POC) was identified for FH. The oversight by the POC provides a company wide perspective on lock and tag issues. The POC is the interpretive authority for HNF-PRO-081 and also has the responsibility of reviewing all the lock and tag data that is captured and looking at the "big picture" to evaluate if any issues require an overall action, rather than a specific action taken at the facility.

A new lock and tag class, *Lockout/Tagout*, course # 003052 was created for all personnel involved with lockout/tagout. FH provided training to more than 2100 personnel. A mandatory eight hour class was developed that consisted of a complete review of the revised procedure and hands on training. The hands-on portion consists of writing and hanging a lockout/tagout and an evolution to identify anomalies with a lockout/tagout that was purposefully hung incorrectly by the training staff. The training staff consists of people with a variety of backgrounds within lock and tag. Some are past lock and tag administrators and some are bargaining unit personnel that teach part time in addition to their work in the field.

The Lock and Tag Tidbits was created as a method of communication. It is a lock and tag specific lessons learned forum that is issued electronically to lock and tag qualified personnel. The Tidbits is sent out by the POC to address issues or questions that arise and contains useful information for everyone. It is mailed to FH personnel that have been to lock and tag training and goes directly to their email account as a supplement to the formal Lessons Learned Program.

Performance indicators were created to assist the POC in evaluating the issues that are documented in the corrective action process. These are reviewed monthly with a written analysis done every quarter. This includes every lock and tag Action Request (AR) that is submitted to the Corrective Action Management (CAM) process regardless of the significance level.

There was a concentrated effort to provide mentoring by a selected group of people to the field. FH selected a group of experienced personnel to oversee the execution of lock and tag at every facility as part of the implementation process. The oversight was released when the facility was able to verify to the POC that they were in compliance and understood the revised lock and tag process.

Since the new program took effect on December 1, 2003, it has undergone numerous assessments and scrutiny by many organizations. All the indications are that the program has shown tremendous improvement, but there is still a need to continue to improve. Of the 19 occurrence reports used for this surveillance, several were strictly lock and tag mistakes that occurred prior to implementing the new program. The corrective actions that were taken in the last year have been effective in reducing the recurrence of similar events. The program will continue to be monitored by the FH single POC and any opportunities for improvement will be evaluated for applicability.

#### Current Status of the Work Planning Program

The work management process is very complex and cross cuts multiple functional areas and projects. The process involves personnel from a wide variety of disciplines working together to create a work document and then executing it. A significant effort has been placed on work management improvements at the programmatic level to better integrate the requirements of the various functional areas.

HNF-PRO-12115, Rev. 5, *Work Management*, was revised and issued on June 16, 2004. The revised procedure is being implemented in a phased approach at all FH facilities. Spent Nuclear Fuels (SNF), Central Maintenance Services and Central Plateau facilities have implemented Revision 4 of this procedure with minor deviations. Gaps in implementation have been identified and these gaps are expected to be closed to allow implementation by October 1, 2004. Due to contract changeover, it is expected that FFTF will process a variance to this process.

Job Planning and Hazard Analysis Workshops were conducted with work planners, Automated Job Hazards Analysis (AJHA) facilitators, and subject matter experts between January 27, 2004 and March 18, 2004. A total of 460 people attended the workshops. The focus was placed on the use of the AJHA tool, importance of good facilitation skills, use of the AJHA feedback module, incorporation of Lessons Learned, work planning expectations, etc.

A FH Work Planner and AJHA Facilitator Checklist (site form A-6003-784) was developed for optional use by the projects. The checklist applies to all work planners and AJHA facilitators hired or transferred into planning/facilitator positions, after October 1, 2003. New planners hired by the functional organization receive the checklist for completion. Approximately 55% of the work planners assigned to the Work Management Services organization have completed this checklist. The checklist contains a list of required reading, training, required interviews and sign off for observed activities (facilitating AJHA and work package development, if applicable). The interviews provide confirmation that the work planner/AJHA facilitator understands the work process expectations. A management assessment on the use of this checklist is currently being performed with completion scheduled for September 30, 2004. Additional actions may be taken in this area depending on the results of the assessment.

Additional focus has been placed on integrating work processes. HNF-PRO-1623, *Radiological Work Planning*, was canceled and the key elements were incorporated into HNF-PRO-079, *Job Hazard Analysis*, and HNF-5173, *PHMC Radiological Control Manual*. Projects now use standardized forms for radiological work screening and standardized criteria are being used in the screening process.

HNF-PRO-19304, *Periodic Maintenance and Surveillance Process*, was issued on September 1, 2004. This document will also be implemented, with HNF-PRO-12115, *Work Management*, in a phased approach across FH. Implementation will be complete at FH projects by January 1, 2005. FH projects are reviewing existing programs to identify gaps prior to the implementation date.

A programmatic assessment was done of the Field Work Supervisor training program to verify that required elements of the compliance order, EA-1999-04, United States Department of Energy Compliance Order Requiring Quality Assurance Corrective Measures, were incorporated. As a part of the review, HNF-RD-8524, *Supervision of Fieldwork*, was strengthened to add wording dealing with changing conditions and turnover of assignments. In addition, the training class, *Field Work Supervisor*, course #004240, provided by the training group, was upgraded to incorporate the information added to HNF-RD-8524.

Additionally, Central Maintenance placed a special focus on improvements at SNF. Central work management and maintenance staff were temporarily assigned for six months to one year to place focus on work management and maintenance programmatic improvements. Work package quality and schedule adherence has improved. Schedule Adherence has improved from an average of 52% effectiveness a year ago to an average of 82% in the past few months. Conversations with DOE-RL facility representatives indicate that improvements have been observed.

#### Current Status of the Electrical Safety Program

FH has instituted the Electrical Safety Program using guidance from the DOE Model Electrical Safety Program in DOE-HDBK-1092-98. The program structure consists of two primary Boards; the Hanford Electrical Codes Board (HECB) and the Hanford Workplace Electrical Safety Board (HWESB). DOE-RL has recognized the value, function, and authority of these boards in formal correspondence (Letter: Sally A. Sieracki, Contracting Officer, to R. D. Hanson, President, *PHMC Hanford Electrical Safety Program*, dated: October 10, 2000, 01-ESD-004) and has vested these two board chairpersons with the "...functional Authority Having Jurisdiction (AHJ) role to act on behalf of DOE for routine code interpretation."

The HECB provides for the safeguarding of persons and property from hazards arising from unsafe installations of electrical systems, circuits, and equipment. This is accomplished by providing interpretation and enforcement of the electrical design and installation practices. The HECB Chairman functions as the AHJ for the National Electrical Code for FH.

The HWESB provides for the safeguarding of employees from hazards arising from work on or near electrical systems. This is accomplished by promoting consistent interpretation and application of the regulations set forth in OSHA, NFPA 70E, and other codes and standards related to worker electrical safety. The HWESB Chairman functions as the AHJ for NFPA 70E and the Electrical Safety Sections of OSHA for FH. All HWESB meeting minutes are distributed widely and are posted on the Hanford Electrical Safety Program web site.

Lock and tag incidents involving electrical equipment are discussed in HWESB meetings but the board defers to the Hazardous Energy Control Technical Review Board (HECTRB) to communicate or initiate formal action relative to these events. The purpose of the HECTRB is to



ensure consistent, effective and requirement-compliant interpretation and implementation of the Hazardous Energy Control program.

The FH Occupational Safety and Health (FH-OSH) organization maintains oversight of the FH Electrical Safety Program through a full-time Electrical Safety Program Coordinator (ESPC) and HNF-RD-11827, *Hanford Electrical Safety Program Requirements*. In addition, FH-OSH provides funding to support the activities of the HECB, the HWESB and the HECTR Chair functions.

All FH projects, and most other Hanford prime contractors as well, are represented by designated points of contact on each Board and these members are listed on the previously mentioned web site. The Board meetings are held to:

- Provide technical/interpretive advice for their respective electrical codes/standards.
- Discuss issues and incidents of interest to the POC's and other stakeholders.
- Function as the first arbiter of disputes/appeals relating to requirements and implementation of their respective codes/standards.

### **Issue Identification**

During the review of the 19 occurrence reports, the team found that in most cases the FH corrective actions resolved the problems for the specific facility or project where the events took place. There were a few actions that were instituted on a site wide basis. However, in several instances the corrective actions did not prevent a recurrence of similar events at other FH facilities.

In the area of electrical safety, six of the occurrence reports that were reviewed indicated a problem with incorrect drawings or incorrectly wired equipment. A review of the corrective actions assigned to the occurrences that were a result of renting or buying new equipment indicate that a significant effort was applied to investigate the inspection requirements of rental equipment by the affected facilities but no overall actions were taken by FH other than to issue Lessons Learned.

Technical Authorities (TAs) exist for lock and tag, electrical safety and work management; however competing priorities at Spent Nuclear Fuels have restricted our ability to staff the work management TA function on a full time basis. The lock and tag TA was added as part of the actions taken last year to improve the process. The electrical safety TA has been in place for a few years but has been on long term leave this last year. The limited resources to support these key TA responsibilities may have contributed to the lack of site wide actions in these areas.

The Electrical Safety Program Administrator has been on long-term disability for almost a year and is expected to return this fall. The chairperson of the HWESB has been fulfilling this responsibility on a part-time basis with assistance from FH OSH staff. This vacancy has adversely affected the function of the Boards, particularly the HWESB. The absence of a full-time person in this critical position constitutes an existing recognized weakness in the program.

There were a total of 11 Lessons Learned submitted as a result of the corrective actions for the 19 occurrence reports. Only six of these were disseminated site wide. This raises the question of why only six were issued and requires FH to take a look at the process that the Lessons Learned drafts go through to determine if it is too onerous to prepare and use in the field.

A review of the trending codes that were assigned to the 19 occurrence reports identified that a large percentage of the codes were assigned incorrectly. Even with a single point of oversight for a process, the issues may not have been flagged to the oversight since they were coded incorrectly.

Electrical safety occurrence reports are selected for trending by a key word search and then analyzed and trended monthly. Deficiency Tracking System (DTS) items have not been included in the key word search, so the opportunity to identify a negative trend has been missed. By only looking at Occurrence Reporting data it precluded us from detecting early indicators of emerging problems. The Electrical Safety Program Administrator is responsible for performing this analysis but due to his absence, this was overlooked.

While the work planning and the lock and tag processes have received attention in the last year, it is the execution of these processes that still needs improvement. The execution of lock and tag has shown improvement in the last months due to the training and experience in the use of the revised procedure. Lock and tag has been a major area of management focus and a lot of time has been spent ensuring that the execution in the field has received serious attention also. Since the work planning process is still in the implementation phase, the execution in the field is still somewhat unknown.

Some specific areas of the work planning process that may need improvement are; the gathering of feedback after a job is completed and applying it to a similar job during the planning phase; when the work documentation is in the signature phase, does everyone know what each signatory is signing for or are there assumptions made that someone else is signing that a particular item is correct?

The HWESB is the primary forum for gathering and dissemination of information relating to electrical work safety. The board meets on a monthly basis to review any electrical safety policy questions that have come up and any electrical incidents that may be of interest or have application to Hanford contractors. It was noted that while the board meeting is a good forum, and the FH projects well represented, it is believed that the information presented may not be effectively communicated to all those within the respective projects who would benefit. The board members are expected but are not formally charged with taking the information back to the field and educating their fellow workers. This process for information sharing accountability and the process for selecting project representation can be strengthened.

### Issue - Corrective Action Matrix

Issue	Corrective Action
<p>During the review of the 19 occurrence reports, the team found that in most cases the FH corrective actions resolved the problems for the specific facility or project where the events took place. There were a few actions that were instituted on a site wide basis. However, in several instances the corrective actions did not prevent a recurrence of similar events at other FH facilities.</p>	<p>C.A. # 3 Schedule an independent assessment of the FH electrical safety program. C.A. #8 Prepare a communication strategy to disseminate management expectations on execution of work with emphasis on electrical safety.</p>
<p>In the area of electrical safety, six of the occurrence reports that were reviewed indicated a problem with incorrect drawings or incorrectly wired equipment. A review of the corrective actions assigned to the occurrences that were a result of renting or buying new equipment indicate that a significant effort was applied to investigate the inspection requirements of rental equipment by the affected facilities but no overall actions were taken by FH other than to issue Lessons Learned.</p>	<p>C.A. #7 Conduct a collective significance review of the six listed occurrence reports dealing with incorrect drawings and wiring.</p>
<p>Technical Authorities (TAs) exist for lock and tag, electrical safety and work management, however competing priorities at Spent Nuclear Fuels have restricted our ability to staff the work management TA function on a full time basis. The lock and tag TA was added as part of the actions taken last year to improve the process. The electrical safety TA has been in place for a few years but has been on long term leave this last year. The limited resources to support these key TA responsibilities may have contributed to the lack of site wide actions in these areas.</p>	<p>C.A. #2 Provide a full-time TA for electrical safety. C.A. #9 Provide a full-time TA for work management.</p>
<p>The Electrical Safety Program Administrator has been on long-term disability for almost a year and is expected to return this fall. The chairperson of the Hanford Workplace Electrical Safety Board (HWESB) has been fulfilling this responsibility on a part-time basis with assistance from FH OSH staff. This vacancy has adversely affected the function of the Boards, particularly the HWESB. The absence of a full-time person in this critical position constitutes an existing recognized weakness in the program.</p>	<p>C.A. #2 Provide a full-time TA for electrical safety.</p>
<p>There were a total of 11 Lessons Learned submitted as a result of the corrective actions for the 19 occurrence reports. Only six of these were disseminated site wide. This raises the question of why only six were issued and requires FH to take a look at the process that the Lessons Learned drafts go through to determine if it is too ponderous to prepare and use in the field.</p>	<p>C.A. #4 Evaluate the LL process for effectiveness of dissemination of information across FH and identify any possible improvements.</p>

Issue	Corrective Action
<p>A review of the trending codes that were assigned to the 19 occurrence reports identified that a large percentage of the codes were assigned incorrectly. Even with a single point of oversight for a process, the issues may not have been flagged to the oversight since they were coded incorrectly.</p>	<p>C.A. #5 Evaluate the CAM application of HNF-GD-7083, Trending Codes, for consistency and take appropriate actions.</p>
<p>While the work planning and the lock and tag processes have received attention in the last year, it is the execution of these processes that still needs improvement. The execution of lock and tag has shown improvement in the last months due to the training and experience in the use of the revised procedure. Lock and tag has been a major area of management focus and a lot of time has been spent ensuring that the execution in the field has received serious attention also. Since the work planning process is still in the implementation phase, the execution in the field is still somewhat unknown.</p>	<p>C.A. #6 Form an independent team to review a sample of work packages at varied facilities to determine the level of performance in implementation of work planning requirements. (Several specific areas of inquiry are listed in the attached Significant Issue Documentation.)</p>
<p>Some specific areas of the work planning process that may need improvement are; the gathering of feedback after a job is completed and applying it to a similar job during the planning phase; when the work documentation is in the signature phase, does everyone know what each signatory is signing for or are there assumptions made that someone else is signing that a particular item is correct?</p>	<p>C.A. #6 Form an independent team to review a sample of work packages at varied facilities to determine the level of performance in implementation of work planning requirements. (Several specific areas of inquiry are listed in the attached Significant Issue Documentation.)</p>
<p>The HWESB is the primary forum for gathering and dissemination of information relating to electrical work safety. The board meets on a monthly basis to review any electrical safety policy questions that have come up and any electrical incidents that may be of interest or have application to Hanford contractors. It was noted that while the board meeting is a good forum, and the FH projects well represented, it is believed that the information presented may not be effectively communicated to all those within the respective projects who would benefit. The board members are expected but are not formally charged with taking the information back to the field and educating their fellow workers. This process for information sharing accountability and the process for selecting project representation can be strengthened.</p>	<p>C.A. #1 Review/revise the Charter for HWESB to strengthen the authority and responsibilities of the board members relative to the feedback of information and determine if formal designation of the board membership is necessary, i.e. one representative from each project or facility.</p>

FH-0402324A R1

ATTACHMENT 2

Significant Issue Documentation

11 Pages, including this sheet

## SIGNIFICANT ISSUE DOCUMENTATION

Page 1 of 10

## Document:

1. Corrective Action Record File No.: 20041283

2. Action Request Number:

3. Document Number: S-04-SED-FHI-014

4. Document Title: Safety and Engineering Division Reactive Surveillance Report - Corrective Action/Issue Management and Continuous Improvement

5. Document Approval/Receipt Date: 07/30/2004

6. Evaluation Date: 08/30/2004

## Issue Investigation:

7. Issue Number: F1

8. Self Identified:  Yes  No

9. Issue Title/Summary: Corrective actions not avoiding problem recurrence

## 10. Description of Issue:

Corrective actions taken by FHI management to resolve electrical safety issues are not effectively avoiding recurrence across the Project Hanford Management Contract facilities. Per the RL Surveillance: Nineteen electrical safety related occurrence reports from January 2002 to May 2004 were evaluated, including the causes and associated corrective actions identified in the individual occurrence reports. The classification of each of these included being a near miss and/or a lock and tag issue connected with the failure to identify or control hazardous electrical energy. The team found that in most cases the FHI corrective actions resolved the problems for the specific facility/project where the event took place. However, in several instances the corrective actions did not prevent a recurrence of similar events at other FHI facilities.

Of the nineteen occurrences reviewed, six were related to incorrectly wired systems (as built and/or drawings incorrect) or defective equipment. In one case, one facility/project had similar electrical safety events occur within a few months. From a failure to identify or control electrical hazardous energy perspective, the occurrences reviewed during this surveillance indicated a slightly increasing trend for CY-2004. RL indicates that if this trend continues at the current rate, the total number of electrical events for CY-2004 could exceed that of CY-2003.

## 11. Extent of Condition Summary:

The occurrence reports being evaluated are considered to represent the full extent of the condition, which is FH wide.

## 12. Repeat Issue Summary:

The following other electrical safety issues were noted in review of the Authoritative Source Log for the past 14 months:

- 1) Electrical Safety and/or Trend Code OS0102 - Safety Management, Electrical Safety:
  - RL-PHMC-324FAC-2004-0001: failure of Protective Devices to meet NEC Interrupt Ratings (CARF 20041125)
  - FG-XX-20040351: Issue Identification Form - Inadequate Electrical Grounding (CARF 20040351)
  - S-04-ESD-FHI-001: Safety of Leased Electrical Equipment (CARF 20032462)
  - 2T-XX-20041017: Noncompliance Resulting in Repair of Outlet Cover and Light
  - WR-XX-20040582: "Daisy Chained" Electrical Surge Suppressors
  - 2L-XX-20040070: Leak in Roof Near Electrical Box
- 2) Lock and tag-related issues relative to electrical safety:
  - RL Letter 03-ESD-0048, 6/16/03 (CARF 20031356): "Lack of Action Taken by the FHI Programmatic Owner's Organization", and A-03-OOD-PHMC-02, 7/31/03 (CARF 20031715): This correspondence identified issues related to programmatic weaknesses associated with the Lock and Tag program. Both were evaluated as Significant Issues, and comprehensive corrective action plans were implemented. FH acknowledged in evaluation of those documents in June/July 2003 that significant improvement was needed in the FH program relative to

## SIGNIFICANT ISSUE DOCUMENTATION (continued)

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## Document:

1. Corrective Action Record File No.: 20041283

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hazardous energy control/lock and tag. Therefore, any repeatability related to lock and tag would more realistically be determined from the date of the major changes in implementation of the new FH program (Nov-Dec 03) until the current time.

• RL--PHMC-GENERAL-2004-0004: Management Concern of Lock and Tag Issues. That document was evaluated as a Significant Issue and corrective actions are being tracked under CAREF 20041106. Evaluation indicated the issues did not identify a weakness in the program as defined in HNF-PRO-081, but did identify a potential weakness in the rigor of implementation of work planning/work control.

3) Inadequate/Ineffective Corrective Actions (not specific to electrical safety): S-04-OOD-PHMC-002-C03 identified an issue where "some causal analyses and the resulting corrective actions completed by FHI facilities were inadequate." This was evaluated as a Significant Issue and corrective actions are being tracked under CAREF 2004082.

## 13. Broader Programmatic Scope Summary:

The items identified in the surveillance dated back to 2002 and involved various facilities/projects, thus it is being reviewed at the program level. Authoritative Source review of the previous analyses indicates there were numerous instances of weaknesses in work planning/work control and in other cases personnel error.

NOTE: If broader programmatic scope is applicable to other disciplines/activities or is not within the P/F/F authority to correct, include an action to address.

## Issue Analysis:

## 14. Causal Analysis Technique: Barrier Analysis

## 15. Causal Analysis Results:

In most cases evaluations of the 19 reviewed Occurrence Reports resulted in successful corrective actions within the facilities and projects, and some sharing of information outside of the projects, but there were few cases where corrective actions were instituted FH wide. Corrective actions taken simply did not preclude recurrence of similar events at other FH occasions. A management methods inadequacy of A4B1C06 - Previous industry or in-house experience was not effectively used to prevent recurrence, was therefore selected as an apparent cause.

The issue with electrical safety was found to spill heavily into two closely related areas, lock & tag and work control. For example, many of the occurrences cited in the surveillance involved errors made in these two fields. Therefore all three fields were examined in this analysis.

While the surveillance sample includes incidents of errors with lock and tag, it was acknowledged FH has developed a strong lock and tag program, with visible leadership at the FH level, a standard FH wide process and effective issue resolution and communication. No programmatic shortfalls were identified. The FH Lock & Tag Program was acknowledged by the surveillance report to now be in a satisfactory condition.

FH trending of electrical safety issues had not identified a statistically significant increase in events, however, a programmatic weaknesses was identified at the FH level. The primary FH forum for the gathering and dissemination of information regarding electrical safety is the Hanford Workplace Electrical Safety Board (HWESB). It is chaired by a FH employee assigned to one of the projects as the Director of Facility Management. The board meets on a monthly basis, but its composition is not balanced to reflect even representation of the projects, and while information on events and issues is shared to some degree, the board members generally do not uniformly assume ownership for dissemination of identified issues within their respective projects. Consequently, there is little to no follow up action by the board, or visible improvements to processes at facility level that are attributable to it. A management methods inadequacy of A4B1C07 -

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## Document:

1. Corrective Action Record File No.: 20041283

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**Responsibility of personnel not well defined or personnel not held accountable, was therefore selected as an apparent cause.**

The FH Occupational Safety and Health organization, responsible to oversee the FH Electrical Safety Program, has been without the Electrical Safety Program Administrator who has been on long-term disability for some time. The previously mentioned project person who chairs the HWESB has been fulfilling this requirement as best he can in a part-time status. The absence of a full-time person in this critical position constitutes a weakness. A resource management inadequacy of **A4B2C03 - Insufficient manpower to support identified goal/objective**, was therefore selected as an apparent cause and is considered to be the root cause for the shortfall with electrical safety.

Sharing of information across FH on problem areas, as well as on successes, is the role of the Hanford Site Lessons Learned (LL) Program. However, while corrective actions for 11 of the 19 Occurrence Reports cited in the surveillance included submission of an LL to the FH LL Coordinator, only six were distributed site wide. This lack of information dissemination is considered to be a weakness. A written communication inadequacy of **A5B3C01 - Lack of written communication**, was therefore selected as an apparent cause.

Review of the 19 Occurrence Reports cited in the surveillance also revealed considerable diversity in the application of CAM trending codes. This potentially leads to inaccurate trending and is classified as a weakness. A written communication weakness of **A5B2C03 - Data/computations wrong/incomplete**, was therefore selected as an apparent cause.

Review of the surveillance data revealed that numerous errors had been made in work control, such as work performed outside of the work package, unauthorized revisions being made to the package, and failure to identify all hazards. This analysis provided indication that there may be inadequate resources to support various stages of the work management process, and that competing priorities have restricted our ability to staff the Work Management Technical Authority function on a full-time basis. A resource management inadequacy of **A4B2C03 - Insufficient manpower to support identified goal/objective**, was therefore selected as an apparent cause and is considered to be the root cause for the shortfall in work management.

## 16a. Apparent Cause Code(s):

A4B1C06 - Previous industry or in-house experience was not effectively used to prevent recurrence  
 A4B1C07 - Responsibility of personnel not well defined or personnel not held accountable  
 A4B2C03 - Insufficient manpower to support identified goal/objective  
 A5B3C01 - Lack of written communication  
 A5B2C03 - Data/computations wrong/incomplete

## 16b. Apparent Cause(s)/Action Relationship:

A4B1C06 - Previous industry or in-house experience was not effectively used to prevent recurrence, is addressed by Action 03 - Schedule an independent assessment of the FH electrical safety program, and Action 08 - Prepare a communication strategy to disseminate management expectations on execution of work, with emphasis on electrical safety.

A4B1C07 - Responsibility of personnel not well defined or personnel not held accountable, is addressed by Action 01 - Review/revise the Charter for HWESB to strengthen the authority and responsibilities of the board members relative to the feedback of information, and determine if formal designation of the board membership is necessary.

A4B2C03 - Insufficient manpower to support identified goal/objective, pertaining to



**SIGNIFICANT ISSUE DOCUMENTATION (continued)**

**Document:**

1. Corrective Action Record File No.: **20041283**

2. Action Request Number:

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electrical safety, is addressed by Action 02 - Provide a full-time TA for electrical safety.

A4B2C03 - Insufficient manpower to support identified goal/objective, pertaining to work management, is addressed by Action 06 - Form independent team to review a sample of work packages at varied facilities, and Action 09 - Provide a full-time TA for work management.

A5B3C01 - Lack of written communication, is addressed by Action 04 - Evaluate the LL process for effectiveness of dissemination of information across FH, and identify any possible improvements.

A5B2C03 - Data/computations wrong/incomplete, is addressed by Action 05 - Evaluate the CAM application of HNF-GD-7083, Trending Codes, for consistency, and take appropriate actions.

**17a. Root Cause Code(s):**

A4B2C03 - Insufficient manpower to support identified goal/objective

**17b. Root Cause/Action Relationship:**

A4B2C03 - Insufficient manpower to support identified goal/objective, pertaining to electrical safety, is addressed by Action 02 - Provide a full-time TA for electrical safety.

A4B2C03 - Insufficient manpower to support identified goal/objective, pertaining to work management, is addressed by Action 06 - Form independent team to review a sample of work packages at varied facilities, and Action 09 - Provide a full-time TA for work management.

**18. Analysis Attendees (Other than CAM Rep and Responsible Manager Owning Issue):**

SM Kelley, SL Kooiker, NP Daniel, JR Bell, CJ Wolfe, MS Holowczak

**Issue Evaluation:**

19. PAAA Determination:

Minor

20. PAAA Code(s):

PA050105 - 10CFR830.122, (e) - Criterion 5 - Performance/Work Processes

21. Descriptor Code:

D01 -  
Administrative

22. Event Trend Code(s):

OS0102- Safety management, electrical safety  
QA0301- Corrective Action Management

**Corrective Action Plan:**

## SIGNIFICANT ISSUE DOCUMENTATION (continued)

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## Document:

1. Corrective Action Record File No.: 20041283

2. Action Request Number:

3. Document Number: S-04-SED-FHI-014

23. Action No.

01

24. Action Type:

CA

25. Action:

Revise HWESB charter to strengthen authority/responsibility

26. Action Notes and Closure Requirements:

Action Continuation: Review/revise the Charter for HWESB to strengthen the authority and responsibilities of the board members relative to the feedback of information, and determine if formal designation of the board membership is necessary, i.e., one representative from each project or facility.

Closure Requirements: Provide a copy of the revised charter. Provide a written closure statement indicating what was done, by whom, and when this was completed.

27. Responsible Mgr. Owning Action:

Bell, JR

28. Alert Group No.: DT=IF3220

29. Actionee:

Bell, JR

30a. Due Date:

11/01/2004

30b. Completion Date:

31. Closure Statement: (If Action is complete)

NA

23. Action No.

02

24. Action Type:

CA

25. Action:

Provide a full-time TA for electrical safety

26. Action Notes and Closure Requirements:

Closure Requirements: Provide a memo describing this appointment. Provide a written closure statement indicating what was done, by whom, and when this was completed.

27. Responsible Mgr. Owning Action:

Bell, JR

28. Alert Group No.: DT=IF3220

29. Actionee:

Bell, JR

30a. Due Date:

12/01/2004

30b. Completion Date:

31. Closure Statement: (If Action is complete)

NA

## SIGNIFICANT ISSUE DOCUMENTATION (continued)

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## Document:

1. Corrective Action Record File No.: 20041283

2. Action Request Number:

3. Document Number: S-04-SED-FHI-014

23. Action No.

03

24. Action Type:	CA	
25. Action:	Schedule independent assessment for electrical safety	
26. Action Notes and Closure Requirements:	<p>Action Continuation: Schedule an independent assessment of the FH electrical safety program.</p> <p>Closure Requirements: Provide a copy of the assessment schedule containing this entry. Provide a written closure statement indicating what was done, by whom, and when this was completed.</p>	
27. Responsible Mgr. Owning Action:	Bell, JR	28. Alert Group No.: DT=IF3220
29. Actionee:	Bell, JR	
30a. Due Date:	11/01/2004	30b. Completion Date:
31. Closure Statement: (If Action is complete)	NA	

23. Action No.

04

24. Action Type:	CA	
25. Action:	Evaluate LL process for effectiveness across FH	
26. Action Notes and Closure Requirements:	<p>Action Continuation: Evaluate the screening process and identify any possible improvements.</p> <p>Closure Requirements: Provide a copy of the evaluation. Provide a written closure statement indicating what was done, by whom, and when this was completed.</p>	
27. Responsible Mgr. Owning Action:	Barmettlor, RB	28. Alert Group No.: DT=IF4670
29. Actionee:	Barmettlor, RB	
30a. Due Date:	12/01/2004	30b. Completion Date:
31. Closure Statement: (If Action is complete)	NA	

## SIGNIFICANT ISSUE DOCUMENTATION (continued)

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## Document:

1. Corrective Action Record File No.: 20041283

2. Action Request Number:

3. Document Number: S-04-SED-FHI-014

23. Action No.

05

24. Action Type:

CA

25. Action:

Evaluate application of trending codes for consistency

26. Action Notes and Closure Requirements:

Action Continuation: Evaluate the CAM application of HNF-GD-7083, Trending Codes, for consistency, and take appropriate actions.

Closure Requirements: Provide a memo on results of the evaluation. Provide a written closure statement indicating what was done, by whom, and when this was completed.

27. Responsible Mgr. Owning Action:

Kelley, SM

28. Alert Group No.: DT=IF4200

29. Actionee:

Kelley, SM

30a. Due Date:

12/31/2004

30b. Completion Date:

31. Closure Statement: (If Action is complete)

NA

23. Action No.

06

24. Action Type:

CA

25. Action:

Form team to review work packages at varied facilities

26. Action Notes and Closure Requirements:

Action Continuation: Form independent team to review a sample of work packages at varied facilities to determine:

- Effectiveness & use of the FH Work Planning/AJHA Facilitator Checklist, and need for formalizing the use of this Checklist.
- If there is adequate representation by subject matter experts during hazard analysis reviews.
- If subject matter experts understand the responsibilities and accountability for quality of the work planning when approval signature is documented.

(continued in Part 31 below)

27. Responsible Mgr. Owning Action:

Salinas, CA

28. Alert Group No.: DT=SN6600

29. Actionee:

Salinas, CA

30a. Due Date:

12/31/2004

30b. Completion Date:

31. Closure Statement: (If Action is complete)

- If workers and Field Work Supervisors understand their responsibilities when performing service ticket or No Planning Required tasks.
- If feedback/LL are used in the work planning process.
- If there is a more effective way to communicate the role of the functional area manager for work management, similar to the approach taken with lock and tag.

Closure Requirements: Provide a memo on results of the review. Provide a written closure statement indicating what was done, by whom, and when this was completed.

## SIGNIFICANT ISSUE DOCUMENTATION (continued)

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## Document:

1. Corrective Action Record File No.: 20041283

2. Action Request Number:

3. Document Number: S-04-SED-FHI-014

23. Action No.

07	24. Action Type:	CA	
	25. Action:	Conduct collective significance of incorrect wiring.	
	26. Action Notes and Closure Requirements:	<p>Action Continuation: Conduct a collective significance review of the six listed Occurrence Reports dealing with incorrect drawings and wiring.</p> <p>Closure Requirements: Provide a memo on the results of the review. Provide a written closure statement indicating what was done, by whom, and when this was completed.</p>	
	27. Responsible Mgr. Owning Action:	Gray, BJ	28. Alert Group No.: DT=NMA000
	29. Actionee:	Gray, BJ	
	30a. Due Date:	11/01/2004	30b. Completion Date:
	31. Closure Statement: (If Action is complete)	NA	

23. Action No.

08	24. Action Type:	CA	
	25. Action:	Strategize communicating expectations regarding work	
	26. Action Notes and Closure Requirements:	<p>Action Continuation: Prepare a communication strategy to disseminate management expectations on execution of work, with emphasis on electrical safety.</p> <p>Closure Requirements: Provide a memo on the strategy. Provide a written closure statement indicating what was done, by whom, and when this was completed.</p>	
	27. Responsible Mgr. Owning Action:	Gray, BJ	28. Alert Group No.: DT=NMA000
	29. Actionee:	Gray, BJ	
	30a. Due Date:	11/01/2004	30b. Completion Date:
	31. Closure Statement: (If Action is complete)	NA	

**SIGNIFICANT ISSUE DOCUMENTATION (continued)**

**Document:**

1. Corrective Action Record File No.: **20041283**

2. Action Request Number:

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23. Action No.

09	24. Action Type:	CA	
	25. Action:	Provide a full-time TA for work management	
	26. Action Notes and Closure Requirements:	Closure Requirements: Provide a memo describing this appointment. Provide a written closure statement indicating what was done, by whom, and when this was completed.	
	27. Responsible Mgr. Owning Action:	Adams, DE	28. Alert Group No.: DT=DD1500
	29. Actionee:	Adams, DE	
	30a. Due Date:	11/01/2004	30b. Completion Date:
	31. Closure Statement: (If Action is complete)	NA	

23. Action No.

10	24. Action Type:	IV	
	25. Action:	Identify actions for V/V of corrective actions	
	26. Action Notes and Closure Requirements:	Action Continuation: Identify what actions will/will not be taken to verify/validate completion of the corrective actions.  Closure Requirements: Provide a copy of the completed surveillance, or an e-mail stating the reasons why actions were not verified/validated.	
	27. Responsible Mgr. Owning Action:	Volkman, DD	28. Alert Group No.: DT=IF4610
	29. Actionee:	Volkman, DD	
	30a. Due Date:		30b. Completion Date:
	31. Closure Statement: (If Action is complete)	NA	

**SIGNIFICANT ISSUE DOCUMENTATION (continued)**

**Document:**

1. Corrective Action Record File No.: **20041283**      2. Action Request Number:

3. Document Number: S-04-SED-FHI-014

23. Action No.

11	24. Action Type:	CL	
	25. Action:	Obtain RL closure authority concurrence	
	26. Action Notes and Closure Requirements:	Closure Requirements: Provide a written closure statement indicating what was done, by whom, and when this was completed.	
	27. Responsible Mgr. Owning Action:	Busche, DM	28. Alert Group No.: DT=IF4000
	29. Actionee:	Kelley, SM	
	30a. Due Date:		30b. Completion Date:
	31. Closure Statement: (If Action is complete)	NA	

**Approval:**

32. Responsible Manager Owning Issue (Print): DM Busche	33. Responsible Manager Owning Issue Alert Group: DT=IF4000
Approval (Signature or E-mail) _____ Date _____	
34. CAM Representative (Print): DH Mannion	<b>DTS USE ONLY:</b>
CAM Rep. signs if one or more actions are completed on this form _____ Date _____	