

# **Bechtel Nevada**

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E000-JP-04-0023

September 22, 2004

Kathleen A. Carlson, Manager  
U.S. Department of Energy  
National Nuclear Security Administration  
Nevada Site Office  
P.O. Box 98518  
Las Vegas, NV 89193-8518

**Subject: NATIONAL NUCLEAR SECURITY ADMINISTRATION ELECTRICAL SAFETY**

**Reference: Letter from F. A. Tarantino to K. A. Carlson, "Unnecessary Residual Risk of Injury Resulting from Less Than Full National Electric Code (NEC) Enforcement," dated January 18, 2002.**

This letter provides an update to the Bechtel Nevada (BN) Electrical Safety Action Plan (ESAP) that was originally transmitted to the National Nuclear Security Administration Nevada Site Office (NNSA/NSO) in the above referenced letter. This updated ESAP is being provided for use in NNSA/NSO's response to the memorandum dated July 19, 2004, from Everet H. Beckner.

The updated ESAP reflects the closure of the original action plan items and the addition of new items that represent the ongoing efforts to continuously improve BN's electrical safety program. The enclosed current version of the ESAP includes recent and planned activities that are based on monitoring of BN electrical incidents and lessons learned from throughout the Department of Energy Complex. The ESAP includes a description, responsibility assignment, recommended action, forecast date, and status for each item identified. As requested by Mr. Beckner, BN will provide NNSA/NSO a quarterly status report on the progress of the ESAP beginning in October 2004.

If you have any questions concerning this matter, please contact Edward C. Laner at 295-3244.



James E. Powell  
General Manager

ECL:pdl

Enclosure: as stated

cc: See page 2

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Kathleen A. Carlson  
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cc w/enc.

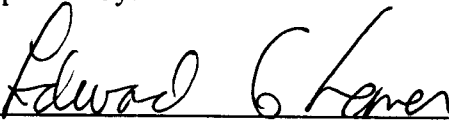
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N. F. Cochrane, BN, NLV098  
K. A. Hoar, NNSA/NSO, 505  
J. H. Honea, BN, NTS327  
J. P. Howanitz, BN, NTS330  
E. C. Laner, BN, NTS330  
A. G. Macenski, BN, NTS327  
C. L. Meyer, BN, NLV016  
C. L. Rivera, BN, NLV004  
N. Sadownik, BN, NLV002  
B. E. Sheridan, BN, NLV001  
D. L. Steinberg, BN, CF084  
T. L. Wallace, NNSA/NSO, 505


# Bechtel Nevada

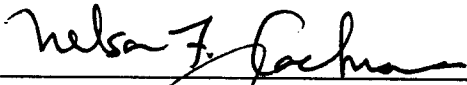
## Electrical Safety Action Plan

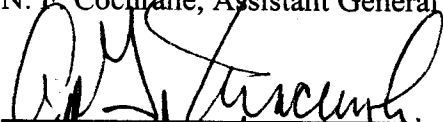
Updated  
September 20, 2004


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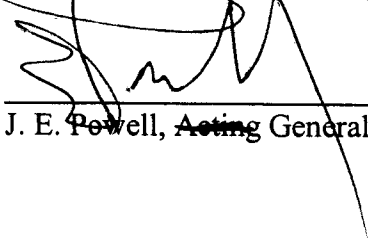
  
\_\_\_\_\_  
E. C. Laner, Electrical Authority Having Jurisdiction 9/8/04  
Date

  
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J. P. Howanitz, Assistant General Manager, Nevada Test Site Operations 9/14/04  
Date

  
\_\_\_\_\_  
N. F. Cochran, Assistant General Manager, North Las Vegas Operations 9/15/04  
Date

  
\_\_\_\_\_  
A. C. Macenski, Assistant General Manager, Environment, Safety & Health 9/13/04  
Date

  
\_\_\_\_\_  
B. E. Sheridan, Principal Deputy General Manager 9/21/04  
Date

  
\_\_\_\_\_  
J. E. Powell, Acting General Manager 9/21/04  
Date

## Executive Summary

This Electrical Safety Action Plan (ESAP) is an update to the plan transmitted to the National Nuclear Security Administration Nevada Site Office (NNSA/NSO) in Bechtel Nevada (BN) letter 0001-FT-02-0068 dated January 18, 2002, from Frederick A. Tarantino to Kathleen A. Carlson, "Unnecessary Residual Risk of Injury Resulting from Less Than Full National Electric Code (NEC) Enforcement."

This update reflects the closure of the original action plan items and the addition of new items that represent the ongoing progress to continuously improve BN's electrical safety program. It includes recent and planned activities that are based on monitoring of electrical incidents and lessons learned from both BN and throughout the Department of Energy (DOE) Complex. For all items, a description, the responsibility, recommended action, forecast date, and status has been provided.

Most of the items deal with specific electrical safety or lockout/tagout (LO/TO) issues; however, several affect company and/or department processes on a larger scale (e.g., confined space, warning tag use, and excavation/penetration). In those cases, the assigned actions address the broader issue, rather than just limiting it to the electrical portion.

The summary schedule for the items and actions in the ESAP is provided below.

<b>Item</b>	<b>Title</b>	<b>Responsibility</b>	<b>Forecast Date</b>
1	Arc Flash Hazard Analysis	Steinberg (Engineering)	December 3, 2004
2	Arc-Flash Protective Clothing Training	Laner (AHJ)	December 16, 2004
3	Non-NRTL Legacy Examinations	Cochrane (Assistant General Manager, NLV Operations)	June 1, 2008
4	Non-NRTL Facility Equipment	Laner (AHJ)	May 26, 2005
5	Excavation and Penetration Improvements	Honea (S&IH)	Completed
6	LO/TO Implementation	Honea (S&IH)	Completed
7	Assess Impact of NFPA 70E, 2004 Version	Honea (S&IH)	December 16, 2004
8	Improvements to Electrical Safety Training	Meyer (Training)	December 16, 2004
9	Electrical Glove Inspection Program	Tharin (Utilities)	December 1, 2004
10	Confined Space Inventory	Honea (S&IH)	Completed
11	Facility Electrical Equipment Risk Assessment	Laner (AHJ)	January 28, 2005
12	Warning (Red) Tag Tracking	Honea (S&IH)	December 16, 2004
13	Electrical Safety Awareness	Honea (S&IH)	November 19, 2004
14	Verification of Surface Laid Cable Memorandum of Understanding (MOU) Implementation	Laner (AHJ)	January 28, 2005
15	Pre-Approval of Temporary Surface Laid Cable Designs	Honea (S&IH)	December 16, 2004
16	Improved Electrical Safety Trend Analysis	Honea (S&IH)	October 29, 2004

**List of Referenced Documents:**

1. CD-0444.030, "Electrical Safety," Revision 2, Change Notice 2
2. CD-0444.062 "Warning and Notice Tags," Revision 1
3. CD-0444.064 "Permit-Required Confined Space Entry," Revision 0
4. CD-2100.004 "Acceptance of Non-Nationally Recognized Testing Laboratory Equipment," Revision 0, Change Notice 1
5. CM-0444.001-021, "Excavation and Surface Penetration," Revision 0
6. CM-0444.001-064 "Confined Space Entry," Revision 0
7. Lesson Plan, Course #1E000150, "Electrical Safety Training – High Voltage"
8. Lesson Plan, Course #1E000151, "Electrical Safety Training – High Voltage"
9. Letter 0001-FT-02-0068 dated January 18, 2002, from Frederick A. Tarantino to Kathleen A. Carlson, "Unnecessary Residual Risk of Injury Resulting From Less Than Full National Electric Code (NEC) Enforcement"
10. National Fire Protection Association (NFPA) 70E, "Standard for Electrical Safety in the Workplace," 2004 Edition
11. OI-0444.025 "Confined or Enclosed Spaces," Revision 0
12. OP-0444.004 "Facility/Project Hazard Analysis and Risk Assessment," Revision 0
13. OP-2100.036 "Lockout/Tagout," Revision 0
14. OP-2100.037 "Tagging Authority," Revision 0
15. PY-2170.001 "Surface Laid Power Cable," Revision 0

## **BN Electrical Incidents**

BN is committed to continually improve safety, including electrical safety. An ongoing electrical safety improvement initiative has been in place for three years. This initiative consists of several programs that provide a comprehensive approach to ensuring continuous electrical safety improvement. One of these efforts was to establish performance metrics that provide information to help identify areas for additional improvement, an overall measure of performance relative to severity, and trends in safety performance.

An extensive review of electric safety metrics was performed during the second and third quarter of Fiscal Year (FY) 01. BN initiated this task and various DOE sites were contacted and interviewed, other government and commercial industry organizations were consulted, and the safety community was contacted. The results of these efforts found no specific standards for measuring electrical safety performance and in general, most locations did not separate electrical accidents and incidents from other types of incidents. BN took the position to separate and track electrical safety performance and determined that the best potential source for electric safety metrics was the DOE/EH-0531, DOE Performance Indicators, Environmental Safety and Health. (Note: the last report was issued for the quarter ending June 1999.) The report, while based on the relatively high threshold level of Occurrence Reports, provided a reasonable approach to measuring electrical safety. Metrics and data criteria were established based on the concept of DOE/EH-0531 but tailored to the Nevada Test Site (NTS) operation and the application of electrical incidents below the reporting threshold for Occurrence Reporting.

A list of known electrical events from FY96 through August 2004 was reviewed and categorized using these criteria. This data is used to establish the charts and graphs that follow.

Electrical accidents, incidents, and events are identified through the Accident/Incident Notifying, Investigating, and Reporting process. Safety personnel ensure that accidents/incidents are adequately reported and the information forwarded to the Senior Electrical Review Board (SERB) Chair. Other events that are not required to be reported through the accident/incident process are also provided to the SERB Chair by BN, NNSA/NSO, and contractor personnel.

The SERB Chair and the Safety & Industrial Hygiene (S&IH) Manager (or representative) categorize each event for Category, Cause, Consequence Severity, and Activity.

**Data Analysis and Summary:**

1. Figure 1 shows all electrical incidents reported to S&IH during FY04 (through August 2004). The chart summarizes information from a total of 11 incidents. Five of the incidents involved excavations; four concerned cutting communication or abandoned power cables (difficult to detect, and not shown on drawings). One incident involved cutting a live 120V cable, which was an Occurrence Reporting and Processing System (ORPS) reportable incident. The other ORPS reportable involved a lack of procedure for an electrical check of portable engine-generator units after being returned from use. This procedural flaw has been corrected. Two of the remaining events involved inattention to detail, which resulted in equipment damage.

The only first aid case involved a subcontractor employee who claimed to receive an electrical shock from a light switch. Subsequent disassembly and examination of the switch by the Electrical Authority Having Jurisdiction (AHJ) found no indication of any substantial arcing or defect in the switch; however, the possibility of a minor shock could not be ruled out.

In summary, no personnel injuries occurred and the severity of electrical incidents continues to decline.

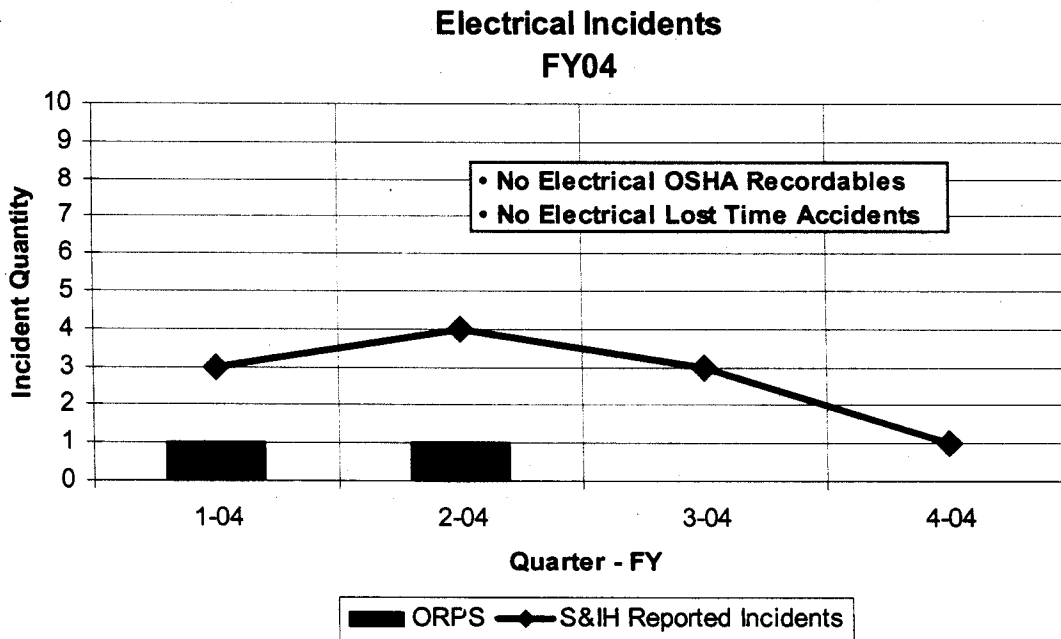


Figure 1

2. Figures 2 and 3 represent data that was reported to the SERB Chair from October 1, 2002 through August 31, 2004, by quarter and the direct cause of the incident/event. The information contained in the SERB Chair's records includes all electrical incidents reported to S&IH and additional events that were outside the S&IH criteria (e.g., equipment failures, design problems, procedural violations). The SERB Chair captures these additional events as part of the ongoing review of electrical safety implementation and effectiveness of BN electrical safety-related directives and procedures. The data represents a total of 42 incidents and events. Figure 2 shows electrical incidents/events quarterly, separated by direct cause. Figure 3 summarizes electrical incidents/events separated by activity.

**Electrical Incident - Direct Cause  
FY03 - FY04 (August 31, 2004)**

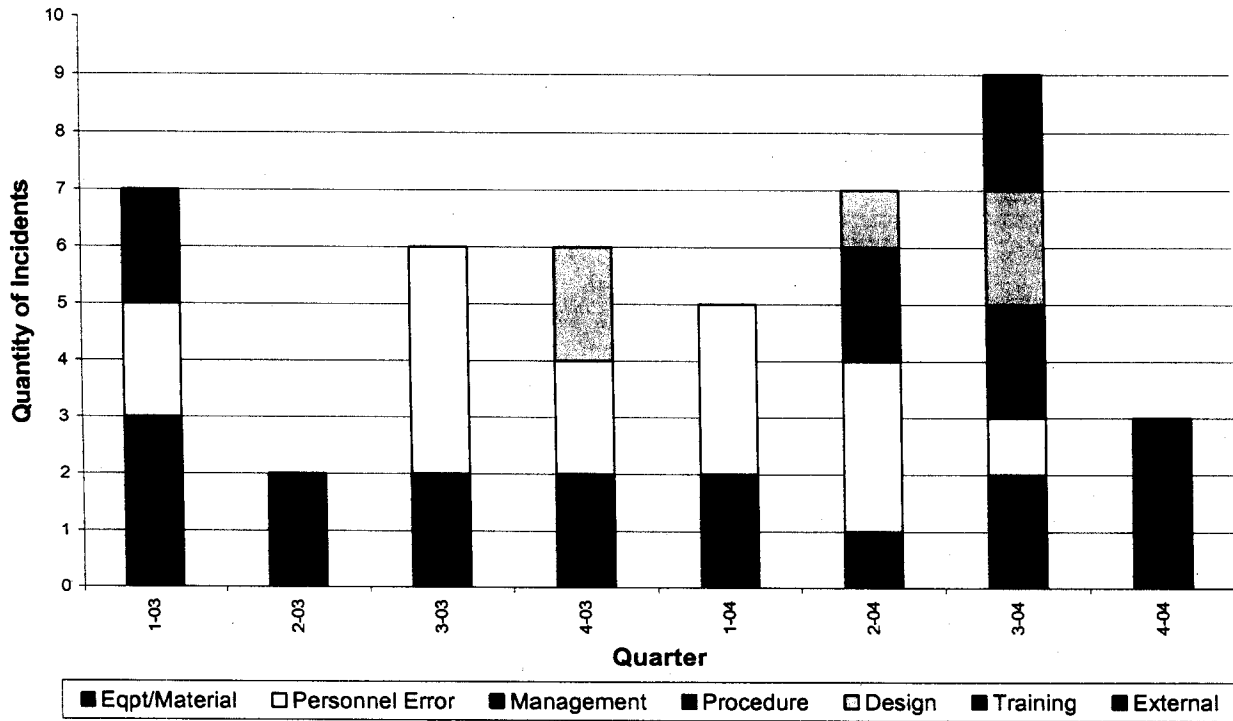


Figure 2

**Electrical Incidents - Major Cause by Activity  
FY03 - FY04 (August 31, 2004)**

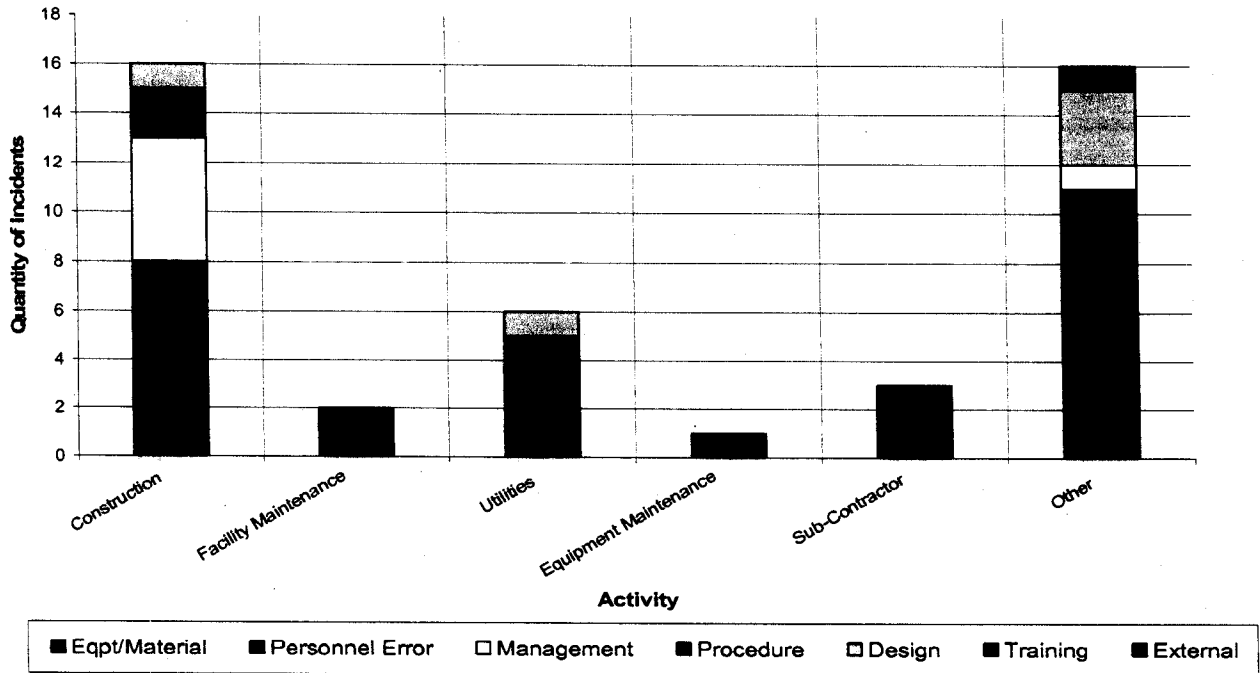


Figure 3



Analysis shows that nearly half of all incidents and events occur during activities that do not involve Construction, Maintenance, or Utilities. Rather, the incidents occurred during normal operations or involved non-Craft personnel. Sixty percent of the incidents attributed to "Other" were due to equipment or material failure. In addition, the data points to Personnel Error (both in design and implementation) as an area for improvement; this accounted for 48 percent of the total cause of problems in FY03-04. Equipment and material failures due to both aged and failed equipment accounted for 31 percent of the total problems.

Increased accountability has been enforced for personnel failure to follow procedures. Third party reviews of electrical protection and coordination calculations have been implemented. There are increasing efforts to identify equipment problems, including the Management Evaluation Team facility inspections and non-Nationally Recognized Testing Laboratory (NRTL) examinations of legacy electrical equipment.

The Management Evaluation Team provides NTS Management with an independent, knowledge-based, proactive approach to reduce risk to facility personnel, mitigate consequences of incidents, and provide essential information for timely preventive intervention and risk based decision making. The team is comprised of the NTS Operations Manager, the Fire Marshal, the Electrical AHJ, the NTS Operations Safety Supervisor, and the NTS Operations Contractor Assurance representative. Their evaluations involve document review, multi-disciplined facility inspection, and interviews with facility personnel. They concentrate on industrial safety compliance, fire protection/life safety code compliance, electrical safety compliance, the flow down of requirements (e.g., permits, formal workplace inspections), and personnel understanding of stop work intervention and notifications.

3. Longer term trending of electrical incidents is represented in Figures 4 and 5, which contain data from July, 1996 through August 2004. The data represents a total of 99 incidents and events.

It is important to note the sudden increase in the number of events starting in the third quarter of FY01. This reflects an increase in reporting as a result of greater visibility being placed on electrical safety and the inclusion of "Electrical Events" in the data. Electrical Events are those incidents, procedure violations, or actions related to electrical safety that could not injure personnel, but may result in property damage. High potential electrical events (such as fire, arc-blasts, explosions, etc.) are considered to have potential personnel safety impacts and are categorized as a "near miss" unless demonstrated otherwise.

Analysis of these longer term charts reconfirms that personnel error and equipment/material failures are the causes of a significant portion of known incidents (41 percent and 25 percent respectively). But it also shows that management problems comprise 19 percent of the cause of electrical incidents.

The long-term charts show that 69 percent of known incidents involved Construction, Maintenance, or Utilities. Only 23 percent involved "Other" activities. This differs from the FY03-04 chart, which shows a much higher quantity of incidents in "Other." This difference is believed to be related to the absence of data for the time before FY02. The concerted effort was begun in FY02 to educate employees regarding electrical safety and incident reporting increased.

**Electrical Incident - Predominant Cause  
FY96 - FY04 (August 31, 2004)**

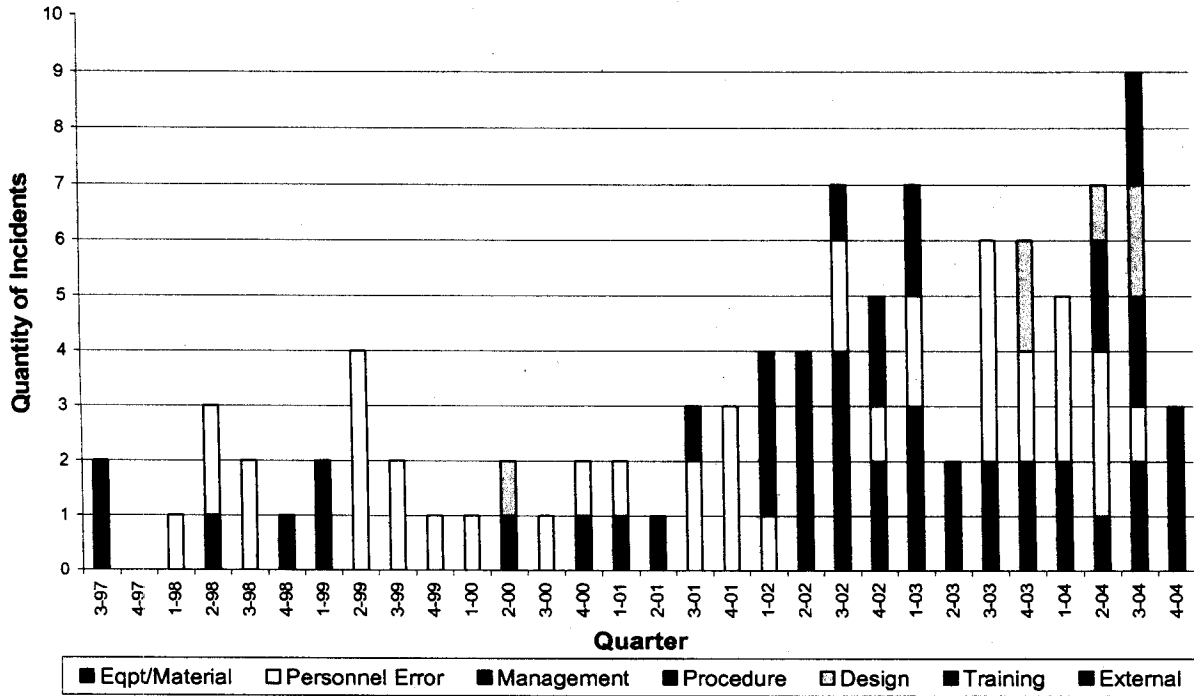


Figure 4

**Electrical Incident - Activity  
FY96 - FY04 (August 31, 2004)**

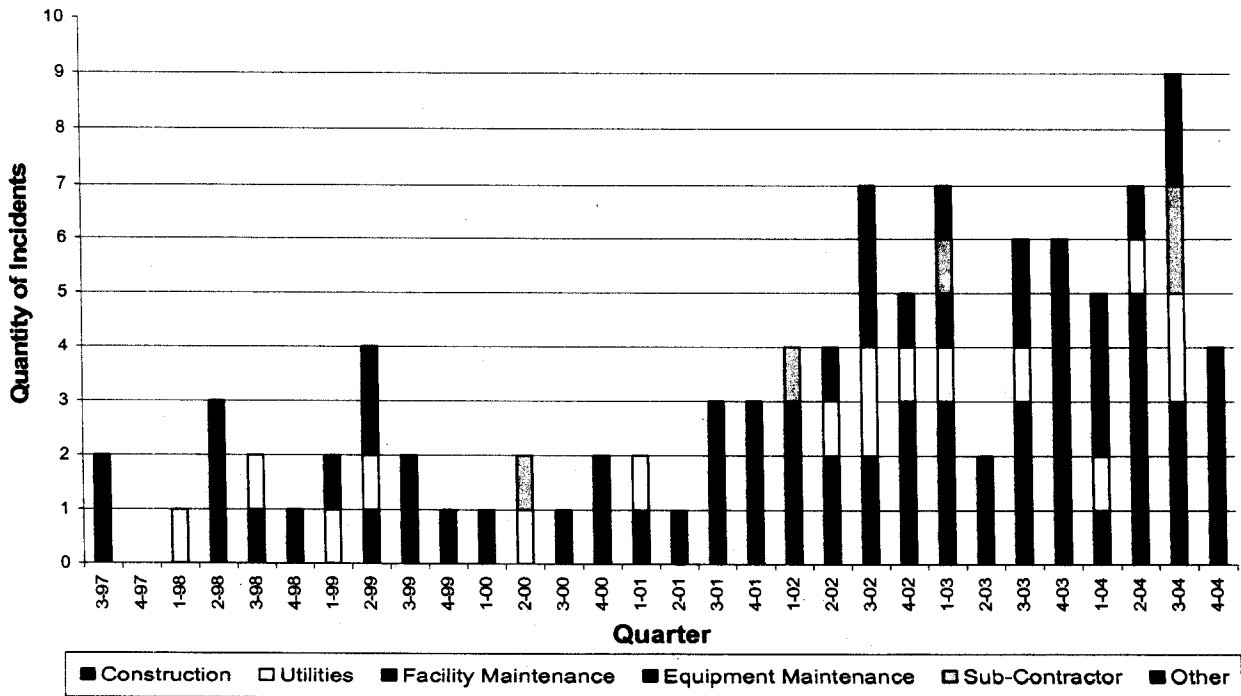


Figure 5

As a result of reviewing the longer term data, a comparison was made between the direct cause and the activities going on when the incidents occurred. Figure 6 represents those relationships.

Examination of this chart indicates that within the three major activities of Construction, Utilities, and Facility Maintenance, the highest percentage of incidents over the long term is attributed to personnel error, followed by management problems. However, within "Other" the highest percentage is equipment/material failures. Management-associated causes are also seen to be significant in Construction.

The information has been correlated, and the results point to the need to focus on personal and management-related issues within the three major implementing groups, and the need to explore equipment/material related failures within the operating facilities.

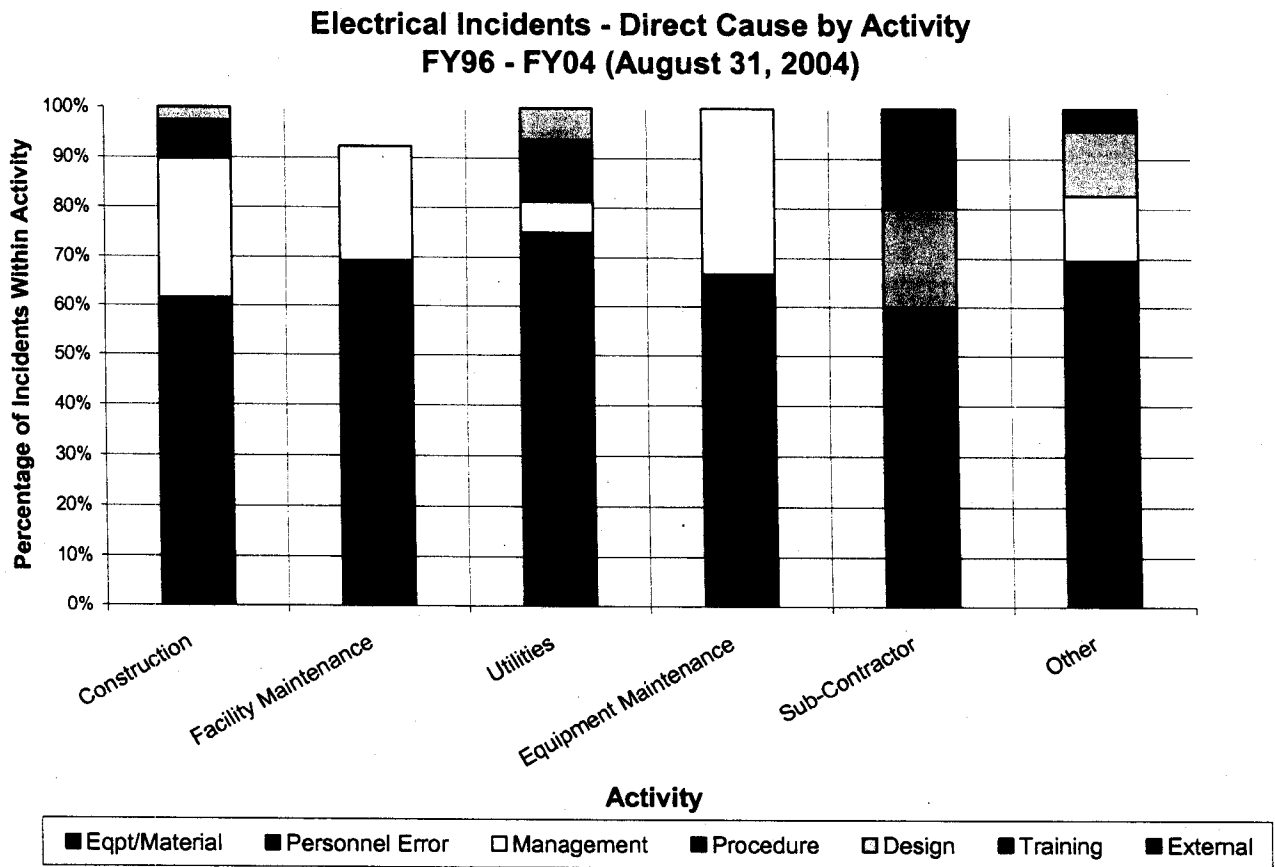


Figure 6

**Item #: 1**

**Title: Arc Flash Hazard Analysis**

**Responsibility: Steinberg (Engineering)**

**Forecast Date: December 3, 2004**

**Item Description:**

Perform flash hazard analyses for all operating facilities at NTS, North Las Vegas (NLV), and Remote Sensing Laboratory (RSL).

**Recommended Action:**

Determine the feasibility of performing enveloping flash hazard analyses for all operating facilities at NTS, NLV, and RSL.

If feasible, then Engineering should:

- Validate the existing four foot default flash protection boundary (from NFPA 70E, 2004 Edition) for 600V and below installations.
- Determine the default flash protection boundaries for installations above 600V.
- Determine the arc-flash incident energy levels ( $\text{cal}/\text{cm}^2$ ) for equipment that presents an arc-flash hazard to personnel.
- Document the analyses with Engineering calculations and issue the results to appropriate departments for use in determining protective clothing requirements for activities within the flash protection boundaries.

If not feasible, Engineering in conjunction with other appropriate departments (e.g., Utilities, Facility Maintenance, etc.) should determine a plan of action to collect data and perform specific analyses.

**Status:**

Feasibility study is approximately 80% complete.

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**Item #: 2**

**Title: Arc-Flash Protective Clothing Training**

**Responsibility: Laner (AHJ)**

**Forecast Date: December 16, 2004**

**Item Description:**

Feedback and observations of personnel in Construction, Facility Maintenance, and Utilities indicate confusion regarding the proper application and wearing of arc-flash protective clothing.

**Recommended Action:**

Prepare and conduct arc-flash protective clothing briefings for all NTS Operations Qualified Electrical Workers and supervisors of personnel that will be performing activities within the flash protection boundaries of equipment.

**Status:**

A meeting was held between the Electrical AHJ and the SERB representatives from Utilities, Construction, and Facility Maintenance on September 1, 2004. The content of the briefing was determined and presentation materials are being assembled. The SERB representatives will develop a schedule for the briefings in conjunction with the department managers.

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**Item #: 3**

**Title: Non-NRTL Legacy Examinations**

**Responsibility: Cochrane (Assistant General Manager, NLV Operations)**

**Forecast Date: June 1, 2008**

**Item Description:**

Develop and implement a process to approve non-NRTL legacy equipment and materials.

**Recommended Action:**

A process must be implemented for BN that addresses legacy non-NRTL equipment. The process should include the following (as a minimum):

- Organizational ownership and structure;
- Process implementation schedule; and
- Process cost estimate.

**Status:**

Company Directive CD-2100.004, "Acceptance of Non-Nationally Recognized Testing Laboratory Equipment" was developed and became effective on June 1, 2003. Since that time, an AHJ- Field Representative (FR) training class has been developed (1E000575), 3 training classes have been given, and approximately 60 BN employees have been qualified to do non-NRTL inspections. Approximately 315 pieces of in-use non-NRTL electronic equipment have been accepted and inspection reports generated by AHJ-FRs. All new non-NRTL BN fabricated electronic equipment and legacy electronic equipment returned to active use since June 1, 2003 has been inspected and accepted per CD-2100.004. Based on the magnitude of this task, a Six Sigma Process Improvement Project was developed to target areas to streamline the inspection process and reduce labor costs. A Six Sigma control plan and a timeline to schedule each target area inspection are being developed for approval by the Six Sigma coordinator. Legacy electronic equipment that is being held for use only during underground nuclear testing will not be inspected.

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**Item #: 4**

**Title: Non-NRTL Facility Equipment**

**Responsibility: Laner (AHJ)**

**Forecast Date: May 26, 2005**

**Item Description:**

Develop and implement a process to approve non-NRTL equipment and materials associated with facility-related electrical distribution systems and equipment.

**Recommended Action:**

A process must be implemented for BN that addresses facility-related electrical distribution systems and equipment. The process should be in accordance with CD-2100.004, "Acceptance of Non-Nationally Recognized Testing Laboratory Equipment," and be tailored to the specific concerns associated with facility-related equipment. Appropriate AHJ FRs should be trained as appropriate in the specifics of examining facility-related equipment.

**Status:**

Development of the facility non-NRTL process is pending the arrival of an assistant to the AHJ (forecast for September 20, 2004).

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**Item #: 5**

**Title: Excavation and Penetration Improvements**

**Responsibility: Honea (S&IH)**

**Forecast Date: Completed July 15, 2004**

**Item Description:**

Review and revise the excavation and blind penetration company directives to improve the process used by BN.

**Recommended Action:**

- Combine the excavation and blind penetration company directives into one directive with consistent direction and common forms.
- Review and incorporate change to reflect DOE complex-wide lessons learned, feedback from BN employees, and the results of incident critiques and root cause analyses.
- Implement a Permitting Authority (similar to the Tagging Authority used for LO/TO) in order to centralize accountability and reduce the number of unnecessary reviews and approvals.

**Status:**

Completed.

Company Manual CM-0444.001-021, "Excavation and Surface Penetration" was issued July 15, 2004 and incorporated these recommendations. This section of the manual had a delayed effective date of September 14, 2004 in order to allow for any necessary retraining of personnel prior to formally implementing the process changes.

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**Item #: 6**

**Title: LO/TO Implementation**

**Responsibility: Honea (S&IH)**

**Forecast Date: Completed July 15, 2004**

**Item Description:**

Review and revise the lockout/tagout company directive and organization procedures to improve the process used by BN.

**Recommended Action:**

- Review and incorporate change to reflect DOE complex-wide lessons learned, feedback from BN employees, and the results of incident critiques and root cause analyses.
- Void Organization Procedures OP-2100.036, "Lockout/Tagout," and OP-2100.037, "Tagging Authority," since they conflict in part with CM-0444.001-063, "Lockout/Tagout," and have lead to confusion in the implementation of a consistent process.
- Review lockout/tagout training to determine if retraining of employees will be required as a result of changes.

**Status:**

Completed.

Company Manual CM-0444.001-063, "Lockout/Tagout" was issued July 15, 2004 and incorporated these recommendations. This section of the manual had a delayed effective date of September 14, 2004 in order to allow for any necessary retraining of personnel prior to formally implementing the process changes.

It was subsequently determined that no additional training of authorized employees was necessary (email from Mike Schnars [Training] to Robert Skier [S&IH] dated July 26, 2004); however, a re-indoctrination was held for all Tagging Authorities on July 15, 2004

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**Item #: 7**

**Title: Assess Impact of NFPA 70E, 2004 Version**

**Responsibility: Honea (S&IH)**

**Forecast Date: December 16, 2004**

**Item Description:**

Review NFPA 70E, 2004 Edition, "Standard for Electrical Safety in the Workplace," and revise BN's electrical safety program documents and training as necessary to reflect the latest requirements.

**Recommended Action:**

- The AHJ is to conduct a review of NFPA 70E, 2004 Edition, and compare it with the existing BN Electrical Safety Program requirements.
- The AHJ is to make recommendations to S&IH regarding any necessary changes to CD-0444.030, "Electrical Safety."
- The AHJ is to make any other necessary recommendations to the appropriate responsible organizations regarding necessary changes in their documents related to electrical safety.
- S&IH is to review and implement the AHJ recommendations as appropriate following review and approval of changes in accordance with BN procedures.

**Status:**

The AHJ has completed the review. Recommended changes to CD-0444.030 were submitted to S&IH on August 12, 2004. S&IH is in the process of resolving and incorporating comments.

Note: CD-0444.030 will be superseded by CM-0444.001-030.

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**Item #: 8**

**Title: Improvements to Electrical Safety Training**

**Responsibility: Meyer (Training)**

**Forecast Date: December 16, 2004**

**Item Description:**

Review Course# 1E000150 "Electrical Safety Training – High Voltage" and revise it to reflect changes in BN's electrical safety program.

**Recommended Action:**

The AHJ and a representative from Training (at a minimum) should review the existing materials used for Course# 1E000150 and update the course as necessary to reflect changes made to the electrical safety directive and other Electrical Safety Program documents. In addition, they should solicit review and acceptance of the revised course material from the SERB.

**Status:**

Course 1E00150 has been divided into two courses (1E000150 and 1E000151):

- Course# 1E000150 fulfills the QEW electrical safety training requirement, but has been geared toward the research and development oriented employees. It was devised based on input from several QEWs and AHJ FRs presently working in Experimentation Support, along with input from the AHJ.
  - Course# 1E000151 presently uses materials that were developed from the previous electrical safety directive. Training and the AHJ are reviewing it in order to revise it to reflect the latest electrical safety requirements, and restructure it to better present the material.
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**Item #: 9**

**Title: Electrical Glove Inspection Program**

**Responsibility: Tharin (Utilities)**

**Forecast Date: December 1, 2004**

**Item Description:**

Improve compliance with periodic glove testing requirements in CD-0444.030, "Electrical Safety."

**Recommended Action:**

Improve the turn-around time for electrical rubber glove periodic testing and establish periodic testing cycles for all rubber glove users. Analyze the existing process and implement improvements (based on existing data) with the goal of improving testing efficiency and increasing compliance.

**Status:**

The Six Sigma process is being used to collect and analyze data. A Yellow Belt Process Improvement Project is underway.

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**Item #: 10**

**Title: Confined Space Inventory**

**Responsibility: Honea (S&IH)**

**Forecast Date: Completed July 15, 2004**

**Item Description:**

Review and revise the confined space company directive and organization instructions in order to clarify requirements and eliminate confusion with regard to permitted and non-permitted entry into electrical vaults.

**Recommended Action:**

- Eliminate OI-0444.025 "Confined or Enclosed Spaces," and merge the requirements into CD-0444.064 "Permit-Required Confined Space Entry."
- Update the inventory of all enclosed spaces and vaults, to include owner, location, and permitted or non-permitted.

**Status:**

Completed.

CM-0444.001-064 "Confined Space Entry," was issued 7/15/04 to replace both CD-0444.064 and OI-0444.025. This new section of the company manual eliminates conflicting/confusing direction and clarifies the requirements for entry into confined spaces (such as electrical vaults).

The inventory of confined spaces was updated in early May 2004 and now reflects the latest information available.

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**Item #: 11**

**Title: Facility Electrical Equipment Risk Assessment**

**Responsibility: Laner (AHJ)**

**Forecast Date: January 28, 2005**

**Item Description:**

Conduct risk assessments of facility-related electrical distribution equipment to determine if undue risk exists due to aging or degradation of the equipment.

**Recommended Action:**

- Determine types of facility-related electrical distribution equipment that should be assessed (e.g., panelboards, transformers, meterboards, motor control centers, wiring, etc.).
- Develop and schedule and perform risk assessments based on the guidance in OP-0444.004, "Facility/Project Hazard Analysis and Risk Assessment."
- Review the preliminary results of the risk assessments with the AHJ and SERB and solicit comments and recommendations.
- Document the final risk assessments and forward the results and recommendations to NTS Operations management.

**Status:**

Development of the risk assessments is pending the arrival of an assistant to the AHJ (forecast for September 20, 2004).

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**Item #: 12**

**Title: Warning (Red) Tag Tracking**

**Responsibility: Honea (S&IH)**

**Forecast Date: December 16, 2004**

**Item Description:**

Determine if centralized tracking of Warning Tags would enhance safety.

**Recommended Action:**

Examine the possibility of setting up a centralized tracking and trending process for Warning Tags. Determine if the additional trending information that might be available justifies the added expense and complexity such a process might entail. Revise CD-0444.062, "Warning and Notice Tags," if necessary to implement the process.

**Status:**

The Manager of S&IH will appoint a safety professional to study this recommendation and provide an analysis of the feasibility and associated cost.

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**Item #: 13**

**Title: Electrical Safety Awareness**

**Responsibility: Honea (S&IH)**

**Forecast Date: November 19, 2004**

**Item Description:**

Implement a long-term electrical safety awareness program for BN.

**Recommended Action:**

- Determine what communication avenues presently exist within BN that might be used to disseminate electrical safety awareness information.
- Investigate sources and costs of appropriate electrical safety awareness materials.
- Task appropriate personnel to obtain and distribute or communicate electrical safety awareness messages and literature.
- Implement the awareness program.

**Status:**

The Manager of S&IH will appoint a safety professional to oversee the implementation of the long-term electrical safety awareness program.

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**Item #: 14**

**Title: Verification of Surface Laid Cable Memorandum of Understanding (MOU) Implementation**

**Responsibility: Laner (AHJ)**

**Forecast Date: January 28, 2005**

**Item Description:**

Conduct walkdowns of surface laid cable installations to verify that corrective actions identified in the MOUs (signed in the June 2001 timeframe) were implemented.

**Recommended Action:**

Determine if the corrective actions required by those MOUs have been implemented. Prepare a report for NTS Operations management documenting the results of the walkdowns. Enter appropriate actions into caWeb for those actions that have not been implemented.

Take appropriate action to have mitigated any immediate hazards found during the verification walkdowns.

**Status:**

Verification of the implementation of the MOUs is pending the arrival of an assistant to the AHJ (forecast for September 20, 2004).

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**Item #: 15**

**Title: Pre-Approval of Temporary Surface Laid Cable Designs**

**Responsibility: Honea (S&IH)**

**Forecast Date: December 16, 2004**

**Item Description:**

Provide pre-approved surface laid power cable designs for temporary installations such as test trailers.

**Recommended Action:**

Revise CD-0444.030, "Electrical Safety," to include information on pre-approved surface laid cable designs for temporary installations. Include the necessary requirements to allow responsible managers to implement specific types of surface laid power cable installations without the need for custom engineering design.

Revise PY-2170.001, "Surface Laid Power Cable," if necessary to reflect this concept.

**Status:**

The AHJ recommended wording changes to CD-0444.030 and submitted them to Engineering on August 5, 2004. Engineering has reviewed and approved the recommended changes and added the specific requirements that must be included in order to pre-approve the designs.

The recommended changes to CD-0444.030 were submitted to S&IH on August 12, 2004. S&IH is in the process of resolving and incorporating comments.

Note: CD-0444.030 will be superseded by CM-0444.001-030.

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**Item #: 16**

**Title: Improved Electrical Safety Trend Analysis**

**Responsibility: Honea (S&IH)**

**Forecast Date: October 29, 2004**

**Item Description:**

Review existing electrical incident metrics and determine what improvements can be made to better represent and trend electrical incidents within BN.

**Recommended Action:**

The AHJ and representatives of S&IH should review the existing metrics collection and analysis methods. They should review them for consistency with other reporting and trending systems presently in use within BN (e.g., caWeb, ORPS, etc.), at other DOE sites, and within Bechtel. Changes to the present method shall be recommended to the Assistant General Manager of Environment, Safety & Health for implementation.

**Status:**

The AHJ and S&IH are reviewing existing metrics in conjunction with the annual performance objective effort.