



U.S. Department of Energy
Office of River Protection

P.O. Box 450, MSIN H6-60
Richland, Washington 99352

MAY 15 2006

06-ESQ-034

Mr. W. S. Elkins, Project Manager
Bechtel National, Inc.
2435 Stevens Center
Richland, Washington 99352

Dear Mr. Elkins:

CONTRACT NO. DE-AC27-01RV14136 – ASSESSMENT REPORT A-06-ESQ-RPPWTP-002
– INDUSTRIAL HEALTH AND SAFETY PROGRAM, FEBRUARY 14 THROUGH
FEBRUARY 22, 2006

This letter forwards the results of the U.S. Department of Energy, Office of River Protection assessment of the Bechtel National, Inc. (BNI) Industrial Health and Safety program conducted from February 14 through February 22, 2006 (attached).

The assessment team concluded that the Waste Treatment and Immobilization Plant construction project has an effective Industrial Health and Safety program. However, the Team identified a number of implementation weaknesses. The Team identified instances where protective barrier protection from falling objects were inadequate, incomplete inspections of Ground Fault Circuit Interrupters, and aerial lift operator qualifications that were not current. The Team identified two Findings, four Observations, and one Assessment Follow-up Item. BNI is requested to provide a response to the above Finding within 30 days from receipt of this letter. The response should include the following:

- The reason for the Finding, if admitted, and if denied, the reason why;
- The corrective steps that have been taken and the results achieved; and
- The corrective steps that will be taken to avoid further Findings.

The direction herein is considered to be within the limitations of the Technical Direction (TD) clause in the Contract and does not meet any of the conditions described in Paragraph (b) (1) through (4) of the TD clause. If, in the opinion of the Contractor, any instruction or direction by the Contracting Officer Representative in this letter falls within one of the categories defined in TD Clause (b)(1) through (b)(4), the Contractor shall not proceed but shall notify the Contracting Officer immediately orally, and in writing within five (5) working days, after receipt of any such instruction or direction and shall request the Contracting Officer to modify the contract accordingly. The Contracting Officer will respond as required by the TD clause.


MAY 15 2006

Mr. W. S. Elkins
06-ESQ-034

-2-

If you have any questions, please contact me, or your staff may call Robert C. Barr, Director,
Office of Environmental Safety and Quality, (509) 376-7851.

Sincerely,



John R. Eschenberg, Project Manager
Waste Treatment and Immobilization Plant

ESQ:PRH

Attachment

cc w/attach:

C. M. Davis, BNI
D. E. Gergley, BNI
J. P. Henschel, BNI
P. W. Schuetz, BNI
G. T. Shell, BNI
BNI Correspondence

Attachment
06-ESQ-034
A-06-ESQ-RPPWTP-002

U.S. DEPARTMENT OF ENERGY
Office of River Protection
Environmental, Safety and Quality

ASSESSMENT: Industrial Health and Safety Program Assessment
Bechtel National, Inc.

REPORT: A-06-ESQ-RPPWTP-002

FACILITY: Bechtel National, Inc. Waste Treatment and Immobilization Plant

LOCATION: Hanford Site

DATES: February 14 through 22, 2006

ASSESSORS: Paul Hernandez, Lead Assessor
John Cavanaugh, Assessor
Jeff Bruggeman, Facility Representative
Josef Christ, Facility Representative

APPROVED BY: Patrick P. Carrier, Team Lead
Verification and Confirmation Team

Executive Summary

The U.S. Department of Energy (DOE), Office of River Protection (ORP) conducted an assessment of Bechtel National, Inc.'s (BNI) Industrial Health and Safety program. The assessment team evaluated Occupational Health and Safety Administration (OSHA) and contractor procedural requirements, performed walk downs of the Waste Treatment and Immobilization Plant (WTP) facilities under construction and of work completed, observed ongoing work activities, interviewed employees on the job, and examined records. The assessment evaluated the effectiveness of the Contractor's implementation of OSHA 29 Code of Federal Regulations 1926, "Safety and Health Regulations for Construction," requirements. The BNI contract requires compliance with 29 CFR 1910, "Occupational Safety and Health Standards for General Industry," and 29 CFR 1926, "Safety and Health Regulations for Construction," as invoked by ORP M 440.1-2, Appendix A, Numbers 12a and b.

WTP employees demonstrated safe work practices and awareness of DOE and BNI Management safety expectations. The Team concluded BNI had implemented DOE and OSHA safety requirements effectively. However, the Team identified a number of implementation weaknesses. The Team identified two Findings, made four Observations, and had one Assessment Follow-up Item (AFI).

The first Finding (A-06-ESQ-RPPWTP-002-F01) identified aerial and scissor lift operators running equipment without current, updated Qualification cards for that particular equipment.

The second Finding (A-06-ESQ-RPPWTP-002-F02) identified inadequate barricading to protect against falling objects underneath overhead work. ORP requires a formal written response to these findings.

The Team identified four Observations, which were based upon the Team's experience base rather than regulatory or contractual non-compliances. The following four Observations note areas requiring improvement:

- Weakness in the process that identified and tracked Ground Fault Circuit Interrupter receptacle testing;
- One instance of inadequate fall protection use;
- Backhoe parked against temporary electrical wiring; and
- Office ergonomics.

No response is required for the Observations, yet ORP encourages BNI to implement actions to address the conditions noted in the Observations.

The Job Hazard Analysis (JHA) Process has been under revision for several months. At the time of the ORP assessment, BNI had not completed implementation of its revised JHA processes. ORP will review the final JHA procedure, closure of CAR-05-323, and implementation of the revised process, as an AFI.

Table of Contents

Executive Summary	ii
Table of Contents	iv
List of Acronyms	v
Scope.....	6
Details.....	6
Items Opened.....	13
Items Closed	14
Assessment Follow-up Item:	15
Signature.....	15

List of Acronyms

AFI	Assessment Follow-up Item
BNI	Bechtel National, Inc.
CCP	Chiller-Compressor Plant
DOE	U.S. Department of Energy
GFCI	Ground Fault Circuit Interrupter
H&R	Hoisting and Rigging
IH&S	Industrial Health and Safety
JHA	Job Hazard Analysis
LAW	Low-Activity Waste
ORP	Office of River Protection
OSHA	Occupational Safety and Health Administration
PT	Pretreatment
RPP	River Protection Project
STARRT	Safety Analysis Risk Reduction Talk
USC	Underground Services Coordinator
WTP	Waste Treatment and Immobilization Plant

Industrial Health and Safety (IH&S) Program Assessment of Bechtel National, Inc. (BNI)

Scope

From February 14 through 22, 2006, the U.S. Department of Energy (DOE), Office of River Protection (ORP) conducted an assessment of BNI's IH&S program. The contractor's nonradiological worker safety and health program is required by Standard 7(e)(1)(ii) of the Contract to conform to DOE's regulatory program, described in ORP M 440.1-2 (was RL/REG-2000-04), "Industrial Health and Safety Oversight Plan for the Waste Treatment Plant Contractor." The Contractor is required to comply with 29 CFR 1910, "Occupational Safety and Health Standards for General Industry," and 29 CFR 1926, "Safety and Health Regulations for Construction," as invoked by ORP M 440.1-2, Appendix A, Numbers 12a and b.

Details

The assessment team reviewed relevant documentation, including BNI's IH&S program procedures. The assessment team evaluated the program areas described below.

Assessed Program Areas

Occupational Medicine Program and Bloodborne Pathogens Program

The assessment team toured the WorkCare Waste Treatment and Immobilization Plant (WTP) First Aid Clinic, interviewed employees, and reviewed documentation related to the occupational medicine program. WorkCare provided medical treatment including minor first aid, with provisions to transport seriously injured workers to Kadlec Medical Center by means of the Hanford Fire Department ambulance. WorkCare provided qualification examinations, U.S. Department of Transportation and Crane Operator physicals, hearing and vision testing, and urinalysis sampling for illegal drug use. WorkCare is responsible for the review of all monitored care of ill and injured employees to maximize their recovery and safe return to work, and to minimize lost time and its associated costs. They also refer injured employees to local medical practitioners within the community to provide specialized care and follow-up services, such as physical or occupational therapy. The assessment team observed the storage of patient medical records in a locked, fire-rated cabinet. Medical records are kept confidential and access limited in accordance with Health Insurance Portability and Accountability Act Privacy Rule (45 CFR Parts 160 and 164).

WorkCare administers the WTP Bloodborne pathogen and biohazardous program on behalf of BNI. The assessment team reviewed the Bloodborne Pathogen Exposure Control Plan, the Bloodborne Pathogen training module with associated quiz, and verified WorkCare employee training records were complete. ORP evaluated the clinic's

hand washing facilities, medicine and equipment storage areas, contaminated and used sharps disposal containers, personal protective equipment, and treatment areas.

The assessment team found that the Contractor's Occupational Medicine and Bloodborne Pathogens program was implemented in accordance with requirements of ORP M 440.1-2, Appendix A, Section 16, "Occupational Medical," and the worker protection requirements of 29 CFR 1926.50.

Electrical Safety Program

The assessment team reviewed documentation, interviewed workers, and conducted field walkdowns observing safe electrical conditions associated with temporary power cords and distribution panels, assured grounding program inspections, and panel access. Temporary power and extension cords were found adequately maintained. Cords were routed in accordance with site procedures, properly tagged, labeled, and supported to minimize potential for damage. Electrical panels were maintained clear for access.

During the assessment the team observed several instances where Ground Fault Circuit Interrupter's (GFCI) had not been tested per BNI's procedure, 24590-WTP-GPP-SIND-039, "GFCI and Assured Grounding," Revision 4. The procedure required that GFCI receptacles installed in temporary systems be tested monthly. Based on site tours and document reviews it was noted that GFCI receptacles located in areas not routinely accessed or used by construction personnel were more likely to be missed. Record reviews also confirmed inaccuracies in documenting locations and the number of receptacles needing testing. On the other hand, GFCI receptacles which were routinely used were found to be tested as documented by a punch card being attached near the receptacle. Based on these indications BNI's tracking process is not as rigorous as it should be and needs improvement. While this condition fails to meet BNI's requirements for monthly GFCI testing, it still exceeds 29 CFR Part 1926, Section 404 requirements and is therefore determined to be an Observation (A-06-ESQ-RPPWTP-002-O01).

The Team performed field walkdowns in WTP buildings and outside areas to determine if temporary power cords were safely installed and used. In one outside area used to store backhoes and forklifts the bucket of a parked John Deer Backhoe was observed to be compressing a 125 volt temporary power cord. Other backhoe buckets stored in the vicinity were close to draped temporary power cords. This was discussed with the contractor and the backhoe was moved away from electrical cord. Within two days this condition was corrected by moving the concrete parking stops farther away from wiring stanchions. This corrective action will prevent equipment from getting too close to the temporary power cords. There were no regulations prohibiting storage of equipment against cords, but it was deemed an undesirable practice. Because BNI did not exercise care in parking equipment in the vicinity of electrical cords, this issue was determined to be an Observation (A-06-ESQ-RPPWTP-002-O02).

Fall Protection Program

The assessment team performed several walk-throughs during the assessment period, to observe work in process and to evaluate the implementation of BNI's fall protection program. This included all levels of the Low-Activity Waste (LAW) Facility, the Laboratory Facility, portions of the Pretreatment Facility, the Chiller-Compressor Plant (CCP), the T-1 Support Facility and other support facilities. The WTP Fall Prevention and Protection Program has been repeatedly assessed and evaluated throughout the construction of the WTP by the ORP Facility Representatives. The operational awareness and demonstrated practices of BNI and subcontractor personnel in relation to fall prevention and protection was observed to be good.

A minor discrepancy, immediately addressed and corrected, was noted during this assessment. An operator and worker raising a scissor lift in the CCP did not have fall protection secured to the lift cage. In this one case a single worker at the CCP was observed moving a scissor lift in the vertical direction without his fall protection equipment being attached. He was notified by the assessor that fall protection was required whether the lift moved horizontally or vertically. He corrected the situation by attaching his safety harness immediately. This was contrary to requirements in BNI procedure GPP-SIND-027, Section 3.2.1.14. Because this was a single isolated incident and workers took immediate corrective action, the Team decided not to make this a finding, but rather, an observation (A-06-ESQ-RPPWTP-002-O03).

Trenching and Excavation Program

BNI required an excavation permit prior to performing any excavation deeper than 18 inches (including driving stakes) below rough grade, whether by hand, machinery, or equipment. The excavation permit system provided a method of ensuring a systematic review of all aspects of a proposed excavation by all parties involved. The permits provided the location and approximate size of the proposed excavation, along with the reason for the excavation. The Underground Services Coordinator (USC) reviewed the information on the excavation permit, compared it against the latest revision of relevant design drawings, field sketches, as-built information, and underground utility model to locate all known underground installations in the area to be excavated. Survey crews marked the existing installations and excavation boundaries.

The original copies of the excavation permits were maintained in a file by the USC for the time the excavation permit is open (i.e., being worked). A copy of the signed-off excavation permit was located at the excavation site at all times during the excavation for reference. Vacuum truck potholing was used to expose all existing utilities. Electrical lines were de-energized and locked out and tagged out during potholing.

Existing structures and utilities adjacent to excavations were protected to preclude settlement. Daily inspections of excavations, the adjacent areas, and protective systems were made by a competent person for evidence of a situation that could result in possible cave-ins, indications of failure of protective systems, hazardous atmospheres, or other

hazardous conditions. Inspections were conducted by the competent person prior to the start of work and as needed throughout the shift. Daily Trench Safety Reports were filled out by a competent person. A stairway, ladder, ramp or other safe means of egress were located in trench excavations four feet or more in depth to provide no more than 25 feet of lateral travel for workers. There were no issues in the area of trenching and excavation. The contractor effectively implemented the requirements of 29 CFR 1926.651.

Cranes and Hoists

The assessment team observed Hoisting and Rigging (H&R) equipment in transit, during positioning, setup and inspection, and during operation including positioning and lifting material. The crane lifts observed included:

- Waste refuse containers at Pretreatment (PT) and LAW buildings;
- Structural steel and backfill material in a concrete bucket at the Laboratory;
- Piping and structural steel at the Chiller plant; and
- Bundled material at the PT building.

Cranes, hoists, elevators, and conveyors are used, maintained, inspected, and modified according to the precautions and limitations of IH&S regulations. All lifts observed were performed in accordance with 29 CFR 1926, Section 550. Riggers set slings and/or attachment devices to the loads, and guided the ascent and descent of loads through the use of tag lines. The lifts were directed by the signalmen (Bellmen) at all times. The Bellman used hand signals or a walkie talkie to communicate with the crane operator. Employees in the vicinity of the load were alerted by the Bellman, who used a whistle to warn others a load was in the air. No one was observed under any loads.

Maintenance and inspection records were filed in the Operating Engineering shop. The assessor selected 13 machines that were actively in use and reviewed records for monthly and annual inspections. All records were complete. There were no issues in the area of H&R. Based on the above, the assessor concluded the contractor had effectively implemented the provisions of 29 CFR 1926 550.

Aerial Lifts

The Team observed operations including fall protection tie off, reviewed equipment maintenance records, operator cards and training records, daily inspection records, and interviewed BNI staff and workers. Scissor lifts and aerial lifts were found adequately maintained and serviced. Defective equipment was reported to be taken out of service when identified and repaired in a timely manner. All equipment reviewed contained appropriate operating controls.

Workers were observed to operate scissor lifts and aerial lifts in a safe and Occupational Safety and Health Association (OSHA) compliant manner with the exception of several not having current operator cards, and in one case, a worker at the CCP was observed moving a scissor lift without fall protection equipment being attached. He was notified by the inspector and corrected the situation immediately. Aerial lift operators at the CCP and the LAW were requested to show their operator's card to demonstrate their authorization to operate the equipment being used. Out of six reviews, three workers did not have cards authorizing them to operate the equipment they were using. A similar review was performed for scissor-lifts by using the daily inspection record and comparing it to the training records. Out of five scissor-lifts reviewed, training records for two workers indicated that On-the-Job Training had not been completed for the scissor lift they each operated.

Overall the operation and use of scissor and aerial lifts was acceptable with the exception of several workers not having up-to-date operator cards, as required by 29 CFR Part 1926, Section 453. This was contrary to requirements in BNI procedure GPP-SIND-033, Section 3.2.2 and determined to be a Finding (A-06-ESQ-RPPWTP-002-F02).

Hand and Power Tool Safety

The assessment team evaluated BNI Implementation of hand and power tool safety requirements from 29 CFR 1926.300-306. The assessor performed field walkdowns and found a drill press not bolted down as required. BNI took corrective actions and a follow-up inspection verified the drill press had been bolted to the floor.

Tool boxes in the LAW and Lab facilities were inspected and tool usage observed with no adverse behaviors. BNI was inventorying tools being returned from the PT and High-Level Waste facilities are part of the onsite work cessation process. An interview with the laborer foreman involved with this process reported that no returned tool has had any obvious damage that required it to be removed from service. Based on the large number of tools that were removed from the field for inventory, the assessor considered this lack of observable damage as a good indicator that tools were maintained effectively. The assessment team found that the Contractor's hand and power tool safety program was adequate.

Stairways and Ladders

The assessment team walked through and around WTP facilities to evaluate stairways and ladders for compliance with 29 CFR 1910.23(d) and (e), 29 CFR 1926.1053, and 29 CFR 1926.1052. Stairway and ladder usage and condition at the WTP site was acceptable. No discrepancies, except the item noted below, were found in stairway and ladder configuration, usage, tagging or record of inspection.

During the January 2005 ladder and stairway inspection by a DOE Facility Representative, it was noted that two stairways in the LAW Facility had stair rail systems against the concrete wall that did not provide an adequate handhold for employees to

grasp. The stairways did have a stair system along the unprotected edge, thus complying with code requirements. BNI was aware of the conditions and (reportedly) had requested Design Engineering to permanently modify the stair rail system to a handrail connected directly to the concrete wall.

During the February 15, 2006, inspection, it was noted that the condition of these two stairways had not changed - no modification had been made to connect the handrail directly to the concrete wall. Subsequent to inspection, the Team found the stairway had been corrected in accordance with OSHA requirements.

Signs and Barricades

The assessment team toured various site areas and facilities under construction including the PT, LAW, CCP, offices, shops, parking areas, and open areas to evaluate compliance with 10 CFR 1926.501(c), "Protection from falling objects." The Team evaluated protective corrective measures implemented as a result of falling objects that had occurred at WTP. The procedure required that red danger tape or rope be used to barricade all areas where overhead work was being performed, and where the risk of falling objects presented an "imminent" danger. Where not possible, the Superintendent and/or the Safety Representative were to be contacted for resolution before work is performed at height.

The use of tool/equipment lanyards where possible or practical and a containment area was an acceptable means to mitigate, or minimize imminent danger situations under overhead work. All red danger barricades were to have a danger sign or tag attached to the tape or rope, which included a description of the hazard(s), and the name, phone number, or radio channel of the responsible supervisor.

Contrary to the requirements of BNI Procedure GPP-SIND-028, Section 3.4, the Team found three instances where barricades were not erected below overhead work areas, and one location where danger tags were missing from a red danger barricade. This recurring deficiency with BNI's barricade implementation was determined to be a Finding (A-06-ESQ-RPPWTP-002-F03).

Job Hazard Analysis – Planning Process

The Team evaluated BNI's Job Hazard Analysis (JHA) to assess compliance with the BNI Procedure, 24590-WTP-GPP-SIND-002, "JHA/Safety Task Analysis Risk Reduction Talk (STARRT)." BNI's JHA program has evolved throughout the life of the River Protection Project (RPP)/WTP, and the current JHA procedure was going through the fifth revision. Though the official management-approved version at that time was Revision 4, some aspects of the anticipated Revision 5 were actively being employed at the WTP. In particular, the STARRT Card found in the officially approved Revision 4 had been replaced by a newer STARRT Card version. The instructor noted that this new STARRT Card is a major revision of the previous format and concept, in that the new card emphasizes more active involvement and thinking by workers in identifying

potential hazards and protective measures. Rather than relying on workers merely checking off on a long list of potential hazards listed on the Revision 4 version of the STARRT Card, the Revision 5 STARRT Card format incorporates the Integrated Safety Management System Core Functions to address potential hazards and associated precautions. Before a task begins, the Revision 5 STARRT Card required that the task supervisor and each of the workers assigned to that task plan and discuss the task activities. The crew then documents the scope of work on the card, analyzes and lists the potential hazards, and documents how to implement the necessary hazard controls. After performing the work, the crew documents feedback for future improvements. If properly used, this STARRT Card procedure requires meaningful communication among the crew members.

The assessor determined that the “Stop Work” statement was inadvertently omitted from the most recent version of BNI’s procedure, Revision 5. At the time of the assessment the procedure had not been corrected. This issue will be documented as an Assessment Follow-up Item (AFI) to ensure the procedure is corrected (A-06-ESQ-RPPWTP-002-AFI01).

Scaffolding

The Team performed field walkdowns and inspections of WTP scaffolding to evaluate compliance with 29 CFR 1926 Subpart L and BNI Procedure 24590-WTP-GPP-SIND-004, “Scaffolding.” Required attributes were verified for all scaffolding at the WTP site. All scaffold erection required a Scaffold Request Form. Scaffold capacity requirements were met by following the manufacture’s standard installation requirements. All hanging, suspended, or interior hung scaffolds required approval of the Scaffold Engineer using the Scaffold Request Form. Employees who performed work on scaffolding were trained by a qualified person to recognize the hazards associated with the type of scaffold being used and to understand the procedures to control or minimize those hazards.

The following two discrepancies were noted:

OSHA and BNI procedures require the competent person to sign and scaffold tags to indicate that all components of the scaffold have been visually inspected by the competent person for damages or defects prior to each shift’s use. A scaffold with a yellow tag at the -21’ elevation of the LAW Facility had not been inspected since February 8, 2006 (one week out of inspection). No one was observed using the scaffolding. The LAW Safety Representative was notified and had the scaffolding inspected.

OSHA and BNI procedures require the mandatory use of scaffold tagging. All scaffolds shall be tagged by a competent person. No one shall work on an untagged scaffold. An untagged scaffold is to be treated as a red-tagged scaffold. A scaffold over the compressor at the Combination Shop was not tagged. No one was observed using the scaffolding. The Field Superintendent was notified and had the scaffolding inspected and tagged.

Two scaffolds that were not in use had inspection/tagging discrepancies and they were corrected immediately. Overall, the assessment team found that the Contractor's scaffolding program was adequate.

Ergonomics

OSHA has not codified standards for ergonomic hazards. However, they have developed guidelines that provide information to help employers identify ergonomic hazards in their workplaces and implement feasible measures to control such hazards. As an employer BNI has an obligation under the General Duty Clause, Section 5(a)(1) to keep the workplace free from recognized serious hazards, including ergonomic hazards. The ORP assessor used the OSHA web-based guidelines to evaluate office conditions in the T-1 Administrative building. In general, the assessor noted that many desks were the old metal type with a single center drawer, making them difficult to appropriately retrofit with an articulating keyboard tray. In a walkthrough sample of workstations, the assessor found approximately 70% of the workstations with less than desirable ergonomics. Examples include monitors off center and at an angle to employees, improper monitor height, lack of wrist rests, mouse/trackball on desks instead of using keyboard trays, and keyboards on desks. Positioning a keyboard and mouse up on desk surface may result in employees raising their hands above the neutral (90 to 120 degree) position. This is a contributing cause of cumulative trauma disorder (repetitive stress injury) for office workers.

BNI has an ergonomics program to evaluate problems employees report. However the program relies on employees initiating action, in some cases after feeling pain from cumulative trauma disorder. Although not required, BNI should consider furnishing ergonomically adjustable office workstations to employees. Because BNI lacks a preventative ergonomics program, this issue was determined to be an Observation (A-06-ESQ-RPPWTP-002-004).

Items Opened

Finding A-06-ESQ-RPPWTP-002-F01

Aerial lift operators did not have approved operator cards. This was contrary to the requirements of 29 CFR1926, Section 453, Paragraph (b)(2)(ii), which states, "Only authorized persons shall operate an aerial lift."

A formal response to this finding is required.

Finding A-06-ESQ-RPPWTP-002-F02

BNI did ensure adequate barriers were in place to protect against falling objects underneath overhead work. Four instances were observed; one in LAW, and three in the CCP building. This is contrary to the requirements of GPP-SIND-028, Section 3.4,

which states, "All areas where overhead work is being performed, and where a risk of falling objects presents and imminent danger, must be barricaded using red danger tape or rope. All red danger barricades shall have a danger sign or tag attached to the tape or the rope, and must include a description of the hazard(s), and the name, phone number, or radio channel of the responsible supervisor."

A formal response to this finding is required.

Observation A-06-ESQ-RPPWTP-002-O01

Numerous GFCIs across the site did not receive a monthly check for February 2006 and in many cases for January 2006. This was contrary to requirements of GPP-SIND-039, 3.3.1.3.

29 CFR Part 1926 requires tests performed on GFCIs to be recorded. This test record shall identify each receptacle, cord set, and cord- and plug-connected equipment that passed the test and shall indicate the last date it was tested or the interval for which it was tested. BNI procedure GPP-SIND-039 requires GFCI receptacles to be tested monthly by an Authorized Employee, which exceeds the OSHA requirements.

Because BNI's procedure was more restrictive than OSHA requirements, this issue was determined to be an observation.

Observation A-06-ESQ-RPPWTP-002-O02

Electrical Safety – The bucket of backhoe JO 11107 was observed compressing a 125 volt temporary power cord east of the CCP.

Observation A-06-ESQ-RPPWTP-002-O03

Fall Protection - One case of worker in moving scissor lift not using fall protection in Chiller building (isolated incident).

Observation A-06-ESQ-RPPWTP-002-O04

Passive office ergonomics program relies on employees reporting problems rather than preventing injury by providing ergonomic workstations. Examples of workstation concerns included: monitors off center at an angle; improper monitor height; lack of wrist rests; mouse on desk; keyboard on desk. Metal desks were not ergonomically adjustable.

Items Closed

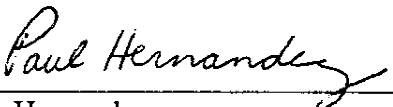
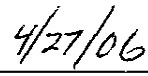
None

Assessment Follow-up Item:

Assessment Follow-up Item A-06-ESQ-RPPWTP-002-AFI01

The JHA Process has been under revision for several months. When BNI completes implementation of revised JHA processes ORP will review the final JHA procedure, closure of CAR-05-323, and implementation of the revised process.

Signature

	
Paul R. Hernandez	Date
Lead Assessor	

Task# ORP-ESQ-2006-0036

E-STARS™ Report
 Task Detail Report
 05/15/2006 1000

TASK INFORMATION			
Task#	ORP-ESQ-2006-0036		
Subject	CONCUR:06-ESQ-034; ASSESSMENT REPORT A-06-ESQ-RPPWTP-002 - INDUSTRIAL HEALTH AND SAFETY PROGRAM, FEBRUARY 14 - 22, 2006		
Parent Task#		Status	CLOSED
Reference	06-ESQ-034	Due	
Originator	Gano, Becky	Priority	High
Originator Phone	(509) 376-6004	Category	None
Origination Date	03/27/2006 1552	Generic1	
Remote Task#		Generic2	
Deliverable	None	Generic3	
Class	None	View Permissions	Normal
Instructions	Correspondence is being routed for concurrence via hard copy instead of electronically. Once you receive the correspondence, please approve or disapprove electronically via E-STARS and route to next person on the routing/concurrence list. BCC: ESQ OFF FILE ESQ RDG FILE MGR RDG FILE R.C.BARR, ESQ P.P.CARIER, ESQ P.R.HERNANDEZ, ESQ J.J.SHORT, PA RECORD NOTE:		
ROUTING LISTS			
1	Route List	Inactive	

- Hernandez, Paul R - Review - Concur - 05/05/2006 1119
Instructions:
- Carier, Patrick P - Review - Concur - 05/15/2006 1003
Instructions:
- Barr, Robert C - Review - Concur - 05/05/2006 1118
Instructions:
- Short, Jeff J - Review - Concur - 05/08/2006 1514
Instructions:
- Hamel, William F - Review - Concur with comments - 05/15/2006 1003
Instructions:
- Eschenberg, John R - Review - Concur - 05/10/2006 1419
Instructions:
- Schepens, Roy J - Approve - Approved - 05/12/2006 0656
Instructions:

RECEIVED

MAY 15 2006

DOE-ORP/ORPCC

ATTACHMENTS

- | | |
|-------------|--|
| Attachments | 1. 06-ESQ-034 att Assessment Report A-06-ESQ-RPPWTP-002.doc
2. 06-ESQ-034 BNI LTR Assessment Report A-06-ESQ-RPPWTP-002.doc |
|-------------|--|

Task# ORP-ESQ-2006-0036

COLLABORATION

COMMENTS

Poster Hamel, William F (Gano, Becky) - 05/15/2006 1005

Concur

Bill Hamel concurred on 5/9/06.

TASK DUE DATE HISTORY

No Due Date History

SUB TASK HISTORY

No Subtasks

-- end of report --

Task# ORP-ESQ-2006-0036

E-STARS™ Report
Task Detail Report
03/27/2006 0354

TASK INFORMATION

Task#	ORP-ESQ-2006-0036		
Subject	CONCUR:06-ESQ-034; ASSESSMENT REPORT A-06-ESQ-RPPWTP-002 - INDUSTRIAL HEALTH AND SAFETY PROGRAM, FEBRUARY 14 - 22, 2006		
Parent Task#		Status	Open
Reference	06-ESQ-034	Due	
Originator	Gano, Becky	Priority	High
Originator Phone	(509) 376-6004	Category	None
Origination Date	03/27/2006 1552	Generic1	
Remote Task#		Generic2	
Deliverable	None	Generic3	
Class	None	View Permissions	Normal

Instructions Correspondence is being routed for concurrence via hard copy instead of electronically. Once you receive the correspondence, please approve or disapprove electronically via E-STARS and route to next person on the routing/concurrence list.

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RECORD NOTE:

ROUTING LISTS

1 Route List Active

- Hernandez, Paul R - Review - Awaiting Response
Instructions:
- Carrier, Patrick P - Review - Awaiting Response
Instructions:
- Barr, Robert C - Review - Awaiting Response
Instructions:
- Short, Jeff J - Review - Awaiting Response
Instructions:
- Hamel, William F - Review - Awaiting Response
Instructions:
- Eschenberg, John R - Review - Awaiting Response
Instructions:
- Schepens, Roy J - Approve - Awaiting Response
Instructions:

PRR 4/16/06
PK 4/26/06
RRB 5/5/06
JJ 5/8/06
WFB 5/9/06
JK 5/10

*2/27/06
3/12
5/4/06*

ATTACHMENTS

- Attachments
1. 06-ESQ-034 att Assessment Report A-06-ESQ-RPPWTP-002.doc
 2. 06-ESQ-034 BNI LTR Assessment Report A-06-ESQ-RPPWTP-002.doc

BACKGROUND
(PLEASE SCAN)

LETTER # 06-ESQ-034

Assessment Note Number: A-06-ESQ-RPPWTP-002

Assessors: Paul Hernandez, Lead Assessor
John E. Cavanaugh, Jr., Assessor/SME
Josef Christ, Facility Representative
Jeff Bruggeman, Facility Representative

Dates of Assessment: February 14 – 22, 2006

Areas/Items Inspected: BNI INDUSTRIAL HEALTH AND SAFETY
(IH&S) PROGRAM

The U.S. Department of Energy (DOE), Office of River Protection (ORP) conducted an assessment of Bechtel National, Inc.'s (BNI) Industrial Health and Safety program. The assessment team evaluated Occupational Health and Safety Administration (OSHA) and contractor procedural requirements, performed walk downs of Waste Treatment Plant (WTP) facilities under construction and of work completed, observed ongoing work activities, interviewed employees on the job, and examined records. The assessment team used criteria and approach documents (CRAD) as the primary means of documenting the assessment of their program areas. The CRADS were derived from requirements found in OSHA 29 Code of Federal Regulations 1926, "Safety and Health Regulations for Construction."

The assessment team evaluated the following program areas:

- Occupational Medicine/Bloodborne Pathogens
- Fall Prevention and Protection
- Electrical Safety
- Excavation and Trenching
- Cranes and Hoists
- Aerial Lifts
- Hand and Power Tools
- Stairways and Ladders
- Signs and Barricades
- Job Hazard Analysis
- Scaffolding
- Ergonomics

The assessment notes are comprised of the attached CRADS.

Submitted By: Paul Hernandez Date: 3/24/06
Paul Hernandez

**Criteria and Review Approach Document
BNI IH&S February 2006 – Assessment Form**

Functional Area: BNI IH&S	Assessment Element: Occupational Medicine, Ergonomics, Bloodborne Pathogens	Facility or Process: WTP	Date: February 14-22, 2006	CRITERIA MET YES: <u> X </u> NO: <u> </u>
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OBJECTIVE:

Performance Criteria or Assessment Elements:

Contractor to have a comprehensive occupational medicine program to address injuries and illnesses, employee wellness, fitness for duty, and other relevant medical issues on the construction site. The Contractor is required to prepare a written plan that describes and implements an effective occupational medicine program at the job site throughout all phases of construction. The plan must implement the requirements of ORP M 440.1-2, Appendix A, Section 16, "Occupational Medical." Section 12 of Appendix A also requires the Contractor to comply with the worker protection requirements of 29 CFR 1926.50.

Approach: Evaluate –

DOE O 440.1A OCCUPATIONAL MEDICAL.

The establishment of a contractor occupational medical program shall be a basic worker protection requirement. *Program is established and operational.*

A formal, written contractor occupational medical program detailing the methods and procedures used to implement the occupational medical requirements necessary for worker protection and the promotion of a healthful work environment shall be established, maintained, reviewed, and updated. *In Home Office; not reviewed.*

Maintenance of a Healthful Work Environment.

(1) Occupational medical physicians and selected medical staff shall:

(a) Coordinate with other safety and health professionals (industrial hygienists, health physicists, safety specialists/managers) to identify work-related or work site hazards and their possible health risks to employees;

(b) Possess a current knowledge of actual or potential work-related hazards (physical, chemical, biological, **ergonomic**); *See report for ergonomic program concerns.*

d. Employee Health Examinations.

- (b) qualification examinations, *For respirator users, operators.*
- (c) fitness for duty,
- (d) medical surveillance and health monitoring,
- (e) return to work health evaluations,
- (f) termination examinations.

Monitored Care.

(1) The occupational medical program shall be responsible for the review of all monitored care of ill and injured employees to maximize their recovery and safe return to work, and to minimize lost time and its associated costs. *Confirmed during OSHA Injury/Illness recordkeeping reviews.*

Medical Records.

- (1) An employee medical record shall be developed and maintained for each employee for whom medical services are provided. *Acceptable.*
- (2) The confidentiality of all employee medical records shall be observed. *Acceptable.*
- (3) Employee medical records shall be adequately protected and stored permanently. *O.K.*

Organizational Staffing.

The physician responsible for the delivery of medical services shall be a graduate of a school of medicine or osteopathy. *Medical College of Wisconsin*

Documentation:

- *WorkCare Employee Training Record for Bloodborne Pathogens, dated September 29, 2003*
- *WorkCare Bloodborne Pathogen Quiz, dated September 29, 2003*
- *WorkCare Bloodborne Pathogen Training Record, last updated May 5, 2005*
- *WorkCare Bloodborne Pathogen Training Module, dated April 2004*
- *WorkCare Exposure Control Plan for Bloodborne Pathogens*
- *Container – Bloodborne Pathogen and Body Fluid Spill Kit, First Aid Only No. J-0133*
- *Computer Workstations – Good Working Positions, www.osha.gov website*
- *Computer Workstations – Monitors, www.osha.gov website*
- *Computer Workstations – Chairs, www.osha.gov website*
- *Computer Workstations – Desks, www.osha.gov website*
- *Computer Workstations – Keyboards, www.osha.gov website*

Interviews Conducted:

- *Medical Director*
- *Registered Nurse*

Field Observation:

- *Toured the WorkCare WTP On Site Medical Facility on 2/14/06 – Assessor inspected examination areas, hand washing facilities, personnel protective equipment, refrigerators, supply cabinets, and biohazard waste containers.*

- Assessor reviewed recordkeeping processes and verified that medical records are secured in a locked cabinet. The assessor reviewed dozens of medical records while performing OSHA Injury/Illness recordkeeping reviews over the last two years. All records reviewed met recordkeeping requirements. No cases of Bloodborne pathogen (BBP) exposure have occurred at WTP; therefore no BBP patient records were reviewed.
- The assessor performed walkthroughs of the T-1 Administration office to evaluate work station ergonomics and observed an employee ergonomic evaluation performed by BNI Safety. The majority of desks were the old metal type with a single center drawer, making them difficult to appropriately retrofit with an articulating keyboard tray.

Discussion of Results:

WorkCare provided medical treatment including minor first aid, with provisions to transport seriously injured workers to Kadlec Medical Center by means of the Hanford Fire Department ambulance. WorkCare provided qualification examinations, Department of Transportation (DOT) and Crane Operator physicals, hearing and vision testing, and urinalysis sampling for illegal drug use. WorkCare is responsible for the review of all monitored care of ill and injured employees to maximize their recovery and safe return to work, and to minimize lost time and its associated costs. They also refer injured employees to local medical practitioners within the community to provide specialized care and follow-up services, such as physical or occupational therapy. The assessment team observed the storage of patient medical records in a locked, fire-rated cabinet. Medical records are kept confidential and access limited in accordance with privacy regulations.

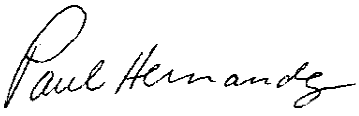
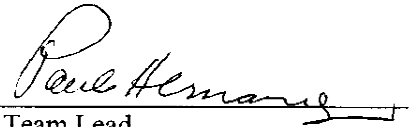
Conclusion:

The Occupational Medicine and Bloodborne Pathogen programs are effectively implemented at WTP by WorkCare. No issues in these areas.

In a walkthrough sample of workstations, the assessor found approximately 70% of the workstations with less than desirable ergonomics. Examples include monitors off center at an angle to employees, improper monitor height, lack of wrist rests, mouse/trackball on desks instead of using keyboard trays, and keyboards on desks. Positioning a keyboard and mouse up on desk surface may result in employees raising their hands above the neutral (90 to 120 degree) position. This is a contributing cause of cumulative trauma disorder (repetitive stress injury) for office workers.

Issue(s):

BNI has an ergonomics program to evaluate problems employees report. However the program relies on employees initiating action, in some cases after feeling pain from cumulative trauma disorder. Because BNI lacks a preventative ergonomics program, this issue was determined to be an Observation.

<p>Assessor: Paul Hernandez </p>	<p>Approved:  Team Lead</p>
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**Criteria and Review Approach Document
BNI IH&S February 2006 – Assessment Form**

Functional Area: BNI IH&S	Assessment Element: Electrical Safety	Facility or Process: WTP	Date: 2/23/06	CRITERIA MET YES: <u> X </u> NO: <u> </u>
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OBJECTIVE:

Performance Criteria or Assessment Elements:

Electrical Safety

Approach:

Review documentation and conduct field tours observing safe electrical conditions associated with temporary power cords and distribution panels, assured grounding program inspections, and panel access. Interview construction staff and workers as necessary.

Records Reviewed:

- 24590-WTP-GPP-CON-3313, *Quarterly Inspection of Power Distribution Boards*, Revision 0, Effective Date: November 3, 2005
- 24590-WTP-GPP-CON-3314, *Labeling, Routing, and Supporting of Construction Power Cords*, Revision 0, Effective Date: October 5, 2005
- 24590-WTP-GPP-SIND-039, *GFCI and Assured Grounding*, Revision 4, Effective Date: October 3, 2005
- 24590-WTP-GPP-SIND-024, *General Safe Work Practices*, Revision 2, Effective Date: August 31, 2004
- 24590-WTP-CAR-QA-06-062, *Violation of Lock/Out Tag/Out Process*, Dated February 17, 2006.
- Monthly Ground Fault Circuit Interrupter (GFCI) Logs for June 2005 and February 2006.
- In-field labeling to identify completion of the monthly and quarterly GFCI and assured grounding inspection program.

Interviews Conducted:

The inspector interviewed the BNI Temporary Power Authority to understand how the assured grounding and GFCI inspection program was implemented.

Field Observation:

The inspector toured various site areas and facilities/buildings including the marshall yard observing electrical safety conditions. This included:

- Placement of temporary power cords and power distribution centers and panels,
- Evaluating equipment condition and accessibility,
- Reviewing in-field assured grounding, GFCI, and load center inspection documentation (plastic inspection cards and colored tape),
- Cord inspections, and
- Any other electrical conditions that might not be compliant with safe expectations.

Discussion of Results:

1. During site tours the inspector observed the weather covers on several GFCI outlets had come off and were not effective at protecting the GFCI. It was typically found that the extension cords plugged into GFCI receptacles interfered with closing the cover. The covers appear to have a cord slot; however the cord's construction does not allow using this feature.
2. 24590-WTP-GPP-SIND-039, *GFCI and Assured Grounding*, section 3.3.1.3 requires the GFCI monthly testing be recorded on the ground Fault Interrupter Log (appendix 1). However, the log sheets found in the February file do not reflect the type of information being requested by the log sheet in the procedure. A review of the July and February log sheets also identified numerous inconsistencies consisting of:
 - Line outs with no explanations,
 - Information missing,
 - Some pages were left entirely blank, and
 - Instances of GFCIs not on the list being written in.In summary the lists identifying the GFCI locations are incomplete and do not provide understandable identifiers and can lead to missing inspections.
3. A spot check of the carpenter shop GFCI list provided to the inspector indicated that the form being used did not contain the information required by the Appendix 1 example. Six GFCI receptacles on the list were missing the February inspection (based on the plastic inspection cards not having the February space punched). The location description on the form provides insufficient information to describe the location of each GFCI. In the carpenter shop, the upstairs office on the southwest side was not listed. In that office, two GFC receptacles were observed that did not have the plastic inspection card attached. At the fabrication shop a similar condition was observed where two GFCI receptacles in the northwest area were missing the plastic inspection cards. Other GFCI receptacles throughout the site are also missing recent inspections. Portable power distribution panels and other temporary load centers were found to be inspected; however at the Pre-Treatment facility several

instances of missing inspections were observed.

4. During this inspection, two examples of cords being run through a hole in the wall were observed. One was at the fabrication shop and involved two extension cords running along the southwest wall (caged area) and through a hole in the wall. It appears that these cords were supplementing installed receptacles on the exterior of the building. If more receptacles are needed they should be installed. One relatively close GFCI receptacle was tagged out of service due to failing its monthly check and should be repaired thus providing another available receptacle. The other example was at the carpenter's shop in the northeast corner. Its purpose was not determined.
5. The bucket of a parked John Deere Backhoe JO 11107 was observed to be compressing a 125 volt temporary power cord east of chiller building. Other backhoe buckets stored in the vicinity were very close to draped temporary power cords. This was discussed with the contractor and the backhoe (JO 11107) was moved away from electrical cord. As of 2/21/06 this condition was corrected by moving the concrete parking stops away from wiring which will prevent equipment from getting too close to the temporary power cords.
6. Three incidences of temporary power cords not being current with the assured grounding inspection program were identified:
 - At the southeast corner of Chiller-Compressor building, a 480 volt ac temporary power cord feeding a spider box was observed to not have a current inspection,
 - At the northwest corner of the Pretreatment Facility it was a 480 volt temporary power cord was observed to not have a current inspection, and
 - In Conex container JO-55-060, a 480 volt temporary power cord feeding a heater was observed to not have a current inspection.

All three situations were later observed to have been re-taped with yellow indicating that the ground assurance inspection was completed and now up to date. Based on the large number of cords being maintained these three instances do not constitute a non-compliance with the BNI procedure nor OSHA requirements.
7. During this assessment the inspector came across a defective equipment tag that was being used to prevent operation of a disconnect switch feeding a distribution panel. The tag had no information identifying why the tag was hung. This observation was passed on to a BNI safety representative for follow-up. Further investigation by BNI management led them to file an Occurrence Report on 2/16/06, EM-RP--BNRP-RPPWTP-2006-0006, Lockout/Tagout Process Violation. On 2/17/06, BNI also submitted a corrective action report 24590-WTP-CAR-QA-06-062 documenting its actions to address the violation of the Lockout/Tagout process. BNI is investigating further whether the violation is against its hazardous energy control program or another program controlling equipment usage when a worker hazard does not exist.
8. A safety inspection at the Marshall Yard indicated that electrical circuits were properly identified, all but one GFCI circuit were tagged with current monthly inspection performed, and electrical cords were in good condition and not in pinch

points. There were two cords on the ground. One had the connections on the ground. They were not in walk ways. The Marshall Yard Superintendent stated he would install wood stands to get the cords off the ground.

Conclusion:


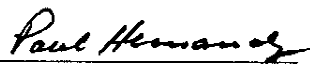
In general temporary power and extension cords were found to be maintained well; cords were routed in accordance with site procedures, properly tagged and labeled demonstrating its use and periodicity for assured grounding inspections, and properly supported to minimize potential for damage. Electrical panels were also maintained clear for access.

The numbers of GFCI receptacles on site is substantial (in the several hundreds) and are associated with many temporary systems and facilities. Based on site tours and document reviews it was noted that GFCI receptacles located in areas not routinely accessed or used for construction activities were more likely to be missed. Record reviews also confirmed inaccuracies in documenting locations and the number of receptacles needing testing. Alternatively, GFCI receptacles which were routinely used for construction activities were found to be tested and documented with an attached punch card. Improvement is needed in the process that identifies and tracks GFCI receptacle testing. While this condition appears to violate BNI's requirements for monthly GFCI testing, it still exceeds 29 CFR Part 1926, Section 404 requirements.

Issue:

Procedure, 24590-WTP-GPP-SIND-039, *GFCI and Assured Grounding*, Rev 4, Section 3.3.1.3 requires GFCI receptacles to be tested monthly by an Authorized Employee.

Contrary to the above requirement, BNI's process for ensuring that all GFCIs are tested on a monthly basis is not effective. See comments 2 and 3 above.

Assessor: Joe Christ 	Approved:  Team Lead
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**Criteria and Review Approach Document
BNI IH&S February 2006 – Assessment Form**

Functional Area: BNI IH&S	Assessment Element: Fall Prevention and Protection	Facility or Process: WTP	Date: February 13-22, 2006	CRITERIA MET YES: X NO: _____
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OBJECTIVE:

Verify that the Fall Prevention and Protection Program being used at the River Protection Project/Waste Treatment Plant (RPP/WTP) provides meets DOE expectations and OSHA Requirements and is in compliance the RPP/WTP **Fall Prevention and Protection Procedure: 24590-WTP-GPP-SIND-027, Rev.3; Effective Date: December 14, 2005**

Performance Criteria or Assessment Elements:

The performance criteria and assessment elements are contained in the subject BNI procedure and the applicable fall prevention and protection standards found in 29 CFR 1926, Occupational Safety and Health Standards for the Construction Industry.

Approach: Evaluate – through document review, personal interviews and worksite observations.

Documentation:

Records Reviewed:

24590-WTP-GPP-SIND-028_5 Procedure: Tags

Procedure: 24590-WTP-GPP-SIND-027, Rev.3, **Fall Prevention and Protection Procedure**, Effective Date: December 14, 2005

Interviews Conducted:

ORP Facility Representatives

- *The ORP Facility Representative contacted the BNI Iron Worker Forman and explained the observation of the BHI Iron Worker installing the horizontal life line with no falling object protection in place to warn personnel of the potential hazard within- the vulnerable area on the open floor below this work.*

Field Observation:

On 2/14/2006 at 1:05pm the ORP Team observed a BNI Iron Worker installing a horizontal life

line across the mid-section of the 68-foot level of the Low Activity Waste (LAW) Facility. This worker was properly tied off with the required fall protection equipment while working off a steel beam along the north edge of the LAW. However, the area below him had not been barricaded to assure no one might enter that area and be subject to falling objects resulting from the work activity. This potential hazardous condition was brought to the attention of the Iron Worker Foreman. He immediately contacted the Iron Worker, stopped his work, and then installed a red danger tape barrier on the level below the work location. He attached the required Danger Tag to identify the hazard and control measures.

DOE SED Assessor walked through and around the outer perimeter of most of the main facilities at WTP on multiple occasions throughout the assessment period, both alone and with other DOE assessment team members. This included each of the floors levels of the Low Activity Waste (LAW) Facility, the Laboratory Facility, portions of the Pretreatment Facility, the Chiller/Compressor Plant, the T-1 Support Facility and other support facilities. During these field reviews the DOE SED Assessor conducted concurrent reviews of the JHA Program elements, Fall Prevention and Protection practices, Stairway and Ladder condition and inspection currency, and other General Safe Work Practices.

Field observations of construction work activity, and related personnel interview, within or around these facilities throughout the assessment period include:

- Several instances of craft installing or removing scaffolding on different levels of the LAW.
- The installation of a horizontal life line at the 68-ft elevation, and the installation of the falling-object-protection red ribbon barrier and warning tag on the 48-ft elevation below this work activity after the missing barrier was pointed out by the DOE Assessors.
- Five separate instances on multiple levels of the LAW facility of craft using scissor lifts to conduct elevated work. In each instance these operations utilized a spotter for safety and to assist the operator of the scissor lift during repositioning moves and setup. Once in place, if the elevated work required a significant period of time to complete, the spotter usually fenced off the area around the scissor lift with red barrier ribbon and a warning tag.
- Two Intermec sheet metal craft fabricating a ventilation grating. The STARRT Card for this task was reviewed, and both craft interviewed. Both said they liked the STARRT Card process for planning and hazard identification emphasis.
- Two surveyors in the parking area on the west side of the Pretreatment Facility sighting underground utility line locations in support of utility excavation work. The STARRT Card for this task was reviewed, both surveyors interviewed, and each said they like the STARRT Card process because it provides a good tool to plan their tasks and to consider hazards they might encounter during their work.
- One craft Operator of a Class VII forklift who was assisting in relation to the Chiller Compressor Plant construction work. He proudly presented his qualification cards for several models of forklifts, noting he is also a qualified crane operator. He stated he appreciated the STARRT Card as a good communications tool for the work crew.
- Observed a two-person BNI technical team conducting sampling and investigation work related to the fire protection coating on the outer north side of the LAW. The BNI Senior Field Engineer-Coatings was interviewed and his STARRT Card reviewed. He likes it

because it augments communication among the crew for planning and discussing their intended work and identifying potential hazards.

- Attended Plan-of-Day meeting for pipe fitters, iron workers and carpenters at LAW Facility on 2/22/06.
- Attended the iron workers and carpenters section meeting after the POD, and participated in morning stretch exercises. Then attended the Foremen meeting and explain the reason for assessment is to observe and review the STARRT card process with crews.
- Visit carpenters conducting demolition of a temporary rolling roof structure at the south west corner of the 48 elevation of the LAW. Reviewed the STARRT Card and one carpenter, a 14-year Hanford worker, says they like the card as a good tool to discuss the task and identify hazards and protective measures.
- Visit with iron worker crew on 48-foot elevation near the north end of LAW. They will be doing some steel bolt up work. The STARRT Card was reviewed and discussed with the Foreman. They like the card process as a communication tool, hazard identification aid, easy to fill out.

Discussion of Results:

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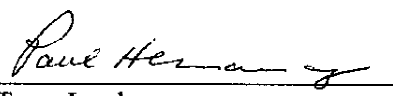
Barricade the area to which objects could fall, prohibit employees from entering the barricaded area, and keep objects that may fall far enough away from the edge of a higher level so that those objects would not go over the edge if they were accidentally displaced.

Conclusion:

The WTP Fall Prevention and Protection Program has been strongly assessed and evaluated throughout the operational period of the RPP by the OPR Facility Representatives. One minor discrepancy, which was immediately addressed and corrected, was noted during this assessment period. The operational awareness and demonstrated practices of BNI and subcontractor personnel in relation to fall prevention and protection was observed to be very good.

Issue(s):

Issues involving fall protection are covered in Signs and Barricades, and Aerial Lifts.

<p>Assessor: John E. Cavanaugh, P.E., CSP DOE RL SED Safety & Health Engineer </p>	<p>Approved:  Team Lead</p>
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**Criteria and Review Approach Document
BNI IH&S February 2006 – Assessment Form**

Functional Area: BNI IH&S	Assessment Element: Excavations	Facility or Process: WTP	Date: February 22, 2006	CRITERIA MET YES: <u> X </u> NO: <u> </u>
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OBJECTIVE:

Performance Criteria or Assessment Elements:

Excavations are planned, designed, and conducted according to IH&S regulations. (29 CFR 1926.651)

Approach:

Conduct field tours and construction areas to determine if excavation work was performed in accordance with requirements.

Documentation:

Engineering Specification 24590-BOF-3PS-CE01-T0001, *Excavation and Backfill*, Revision 5, dated August 22, 2003.

Construction Procedure 24590-WTP-GPP-CON-1901, *Rigging Work Operations*, Revision 4, dated May 10, 2005.

Construction Procedure 24590-WTP-GPP-CON-3202, *Excavation and Backfill*, Revision 5, dated November 23, 2005.

OSHA Standards for the Construction Industry 29 CFR Part 1926.650 Subpart P, *Excavations* and 1226.502 Subpart M, *Fall Protection Systems Criteria & Practices*.

WTSC99-1036-42-17, *Geotechnical Investigation Report by Shannon & Wilson H-1616-51*.

Records Reviewed:

Daily Trench Safety Reports

Excavation Permits

Interviews Conducted:

BOF Safety Representative

BOF Laborers

Competent Person

Underground Services Coordinator

Field Observation:

Prior to performing any excavation deeper than 18 inches (including driving stakes) below rough grade, whether by hand, machinery, or equipment, an excavation permit is required. The excavation permit system provides a method of ensuring a systematic review of all aspects of a proposed excavation by all parties involved. It serves as a communication tool for work planning and documentation of the reviews conducted. Permits and permit renewals are valid for a maximum of two weeks. A permit is only valid for the purpose or work activity stated on the permit. The Field Engineer is responsible for initiation an excavation permit to support construction activities. The permit provides the location and approximate size of the proposed excavation, along with the reason for the excavation. The Underground Services Coordinator (USC) assigns a unique identification number and maintains a tracker of all excavation permits. The USC reviews the information on the excavation permit, compares it against the latest revision of relevant design drawings, field sketches, as-built information, and underground utility model to locate all know underground installations in the area to be excavated. The prior installations are noted on the permit and copies of the pertinent drawings are attached to the permit. Survey crews are used to mark the existing installations and excavation boundaries.

A Competent Person (CP) evaluates the proposed excavation and notes any special requirements for the excavation. All protective systems and means of egress are described on the excavation permit and approved, as indicated by the CP signature on the permit. Safety Assurance reviews the excavation permit and approves it, as indicated by their signature. The original copy of the excavation permit is maintained in a file by the USC for the time the excavation permit is open (i.e., being worked). A copy of the signed off excavation permit is located at the excavation site at all times during the excavation for reference. Vacuum truck potholing is used to expose all existing utilities. Electrical lines are de-energized and locked out and tagged out during potholing.

Excavations are made in a manner that precludes weakening of surrounding areas or damage to adjacent structures. Existing structures and utilities adjacent to excavations are protected to preclude settlement. The geotechnical report is used as the criteria for trench and excavation slopes. Daily inspections of excavations, the adjacent areas, and protective systems are made by a competent person for evidence of a situation that could result in possible cave-ins, indications of failure of protective systems, hazardous atmospheres, or other hazardous conditions. Inspections are conducted by the competent

person prior to the start of work and as needed throughout the shift. Daily Trench Safety Reports (DTSRs) are filled out by a competent person. The DTSRs are located in protective plastic covers within planning areas identified on the DTSR location map. All planning areas with open trenches had a DTSRs. The information on the DTSR was current and relevant to the excavations. On the bottom of the DTSR form is the following statement, "The original of this form must be kept at the workplace. A duplicate copy of this form may be kept at the Safety Assurance Office." A duplicate copy is not kept at the Safety Assurance Office. Bechtel National, Inc. (BNI) intends to revise the form to remove the note. The procedure does not require the duplicate copy. Workers in the trenches were knowledgeable of where the appropriate DTSR was located. BNI recently issued a *Safely Speaking Bulletin* reinforcing the location of DTSRs and trench requirements.

A stairway, ladder, ramp or other safe means of egress is located in trench excavations that are 4 feet or more in depth so as to provide no more than 25 feet of lateral travel for workers. Workers wear highly visible warning vests to minimize exposure to vehicular traffic. When mobile equipment is operated adjacent to an excavation, or when such equipment is required to approach the edge of an excavation, and the operator does not have a clear and direct view of the edge of the excavation, a warning system is utilized such as barricades, hand or mechanical signals, or stop logs. Emergency rescue equipment, such as safety harness and line and a basket stretcher, are readily available. Walkways are provided where employees are required or permitted to cross over excavations. Guardrails are provided where walkways are 6 feet or more above lower levels.

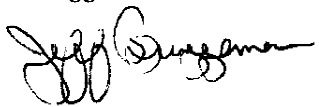
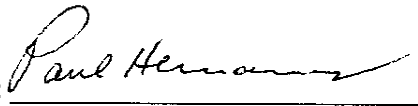
Trench boxes are used in accordance with the manufacture's recommendations. The lifting of trench boxes is defined as a Light Lift Category. The rigging operations are under the Field Engineer, using qualified crane operators and craftsmen. A pre-lift discussion takes place between the rigging crew and the equipment operator(s) prior to making the lift. Clear communications between the Operator(s) and the Rigging crew was observed.

Conclusion:

The assessor verified all active excavation permits were at the excavation locations, update within the last two weeks (if applicable), and only stated work activities were being performed. The assessor witnessed potholing being performed and verified, by interview, that workers had received training. The assessor field verified electrical lines were de-energized and locked out and tagged out during potholing/excavations. Daily inspections of excavations, the adjacent areas, and protective systems are made by a competent person for evidence of a situation that could result in possible cave-ins, indications of failure of protective systems, hazardous atmospheres, or other hazardous conditions. Inspections are conducted by the competent person prior to the start of work and as needed throughout the shift. Inspection reports were located at the job sites.

Issue(s):

None

<p>Assessor: Jeff Bruggeman  2/23/06</p>	<p>Approved:  Team Lead</p>
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**Criteria and Review Approach Document
BNI IH&S February 2006 – Assessment Form**

Functional Area: BNI IH&S	Assessment Element: Cranes, hoists, conveyors	Facility or Process: WTP	Date: 2/14 – 2/22/06	CRITERIA MET YES: ____ NO: ____
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OBJECTIVE:

Performance Criteria or Assessment Elements:

Cranes, hoists, elevators, and conveyors are used, maintained, inspected, and modified according to the precautions and limitations of IH&S regulations. (29 CFR 1926.550-555)

Approach:

Conduct field tours and observe hoisting and rigging operations to determine compliance with requirements.

Records Reviewed:

24590-WTP-GPP-CON-1903, Rev. 0, *Crane Use and Operation*, dated April 20, 2004

24590-WTP-GPP-SIND-018, Rev. 1, *Crane Load Test*, dated November 4, 2002

24590-WTP-GPP-SIND-017, Rev. 1, *Crane Operator Qualification*, dated November 4, 2002

Inspection and Maintenance Records for the following equipment:

H&R Equipment – Documentation Reviewed on 2/16/05

JO 15-004 GEHL DL Series DynaLift Handler (Tele Boom Forklift) Reviewed Operator's Manual, Maintenance Manual, and 4 page Maintenance checklist dated 1/23/06. BNI informed assessor that the Operator's Manuals and Service Manuals for all equipment is maintained in the Vehicle Maintenance Building. Records reviewed included Lubrication dated 1/23/06; 10/10/05; 8/3/05; 5/10/05. Used "Lube Watch" analysis of engine fluids used to determine maintenance recommendations for equipment.

JO 54-020 Work Order # 07816; Annual inspection 1/11/06; Monthly inspection 2/2/06; C&G service 5/24/05; A service 4/20/05

JO 15-020 Lubrication dated 1/23/06; 11/16/05; 9/7/05; 6/13/05.

JO 14-036 LAW East Lubrication 11/16/05; 5/2/05. Annual Inspection and Load Test 5/17/05; Monthly Inspection 1/18/06; 12/13/05; Wire Rope Inspection 1/18/06.

JO 14-089 Chiller North (Cobra records) – Lubrication 2/14/05; monthly inspection 1/21/06.

JO 54-065 Lubrication 8/23/05; 7/12/05; 6/7/05; monthly inspection 1/10/06; annual inspection 2/8/06.

JO 54-141 Lubrication 7/7/05; 6/13/05; monthly inspection 2/1/06; annual inspection 1/10/06.

JO 54-086 Lubrication 8/1/05; 7/13/05; annual inspection 1/11/06

JO 54-133 Lubrication 7/21/05; 6/6/05; monthly inspection 1/9/06; annual inspection 8/6/06.

JO 54-110 Lubrication 7/12/05; 5/24/05; annual inspection 2/1/06.

JO 14-015 Linkbelt @ Chiller Lubrication 10/24/05; 3/4/05; 2/1/05; annual inspection 10/26/05; wire rope and monthly inspection 10/23/04

JO 14 016 Linkbelt @ Chiller Lubrication 1/24/06; annual inspection 10/20/05; wire rope inspection 1/24/06; monthly inspection 1/24/06; 12/19/05

JO 54-018 @ Chiller East Lubrication 12/22/05; annual inspection 1/12/06; monthly inspection 2/1/06

JO 54-063 @ Chiller East Lubrication 8/28/05; monthly inspection 1/14/06; 1/21/06; annual inspection 2/1/06.

JO 14-102 LinkBelt @ Lab: Daily Inspection dated 2/21/06; current operator qualification card;

JO 14-015 LinkBelt @ Chiller: Daily Inspection dated 2/21/06; current operator qualification card; STAART Card dated 2/22/06; Load rating chart

Interviews Conducted:

Crane Union Foreman
Crane Operator JO 14-012
Oiler JO 14-012
Superintendent @ Chiller Plant

Crane Operator JO 14-015
Oiler JO 14-015
Bellman at Chiller
Terex Operator @ LAW
Bellman @ LAW
Crane Inspector

Field Observation:

Over five days in the field the assessor observed Hoisting and Rigging (H&R) equipment in transit, during positioning, setup and inspection, and during operation including positioning and lifting material. The crane lifts observed included:

- Waste refuse containers at Pretreatment (PT) and Low Activity Waste (LAW) buildings,
- Structural steel and backfill material in a concrete bucket at the Laboratory,
- Piping and structural steel at the Chiller plant, and
- Bundled material at the PT building.

All lifts observed were performed in accordance with requirements. Riggers set slings and/or attachment devices to the loads, and guided the ascent and descent of loads through the use of tag lines. The lifts were directed by the signalmen (Bellmen) at all times. The Bellman used hand signals or a walkie talkie to communicate with the crane operator. Employees in the vicinity of the load were alerted by the Bellman, who used a whistle to warn others a load was in the air. No one was observed under any loads.

The assessor participated in a Crane Operator morning safety meeting. The meeting commenced with a stretching and exercise routine, followed by discussion of weather conditions and safety hazards. Following the meeting the assessor observed an operator performing the daily inspection of a Crawler-mounted Latticework Boom Crane. Following the inspection the assessor reviewed the daily checklist and verified it as complete.

Maintenance and inspection records were filed in the Operating Engineering (OE) shop. The assessor selected thirteen machines that were actively in use and reviewed records for monthly and annual inspections. All records were complete.

Discussion of Results:

All lifts observed were performed in accordance with requirements.

Conclusion:

All lifts observed were performed in accordance with requirements.

Issue(s):

None

<p>Assessor: Paul Hernandez <i>Paul Hernandez</i></p>	<p>Approved: <i>Paul Hernandez</i> _____ Team Lead</p>
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**Criteria and Review Approach Document
BNI IH&S February 2006 – Assessment Form**

Functional Area: BNI IH&S	Assessment Element: Aerial Lifts	Facility or Process: WTP	Date: 2/22/06	CRITERIA MET YES: <u> X </u> NO: <u> </u>
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OBJECTIVE:

Performance Criteria or Assessment Elements:

Aerial Lift Use and Maintenance

Approach: Evaluate –

Review equipment maintenance and condition, observe operations including fall protection tie off, review operator cards and training records, review daily inspection records and interview BNI staff and workers as necessary.

Documentation:

Records Reviewed:

- 24590-WTP-GPP-SIND-033, *Articulated Boom Platforms*, Revision 1, Effective Date November 4, 2002
- 24590-WTP-GPP-SIND-027, *Fall Prevention and Protection*, Revision 3, Effective Date December 1, 2005
- Various worker training records for scissor lift and aerial lift documentation
- Completed equipment daily inspection forms scissor lifts and aerial lifts.

Interviews Conducted:

Interviews consisted of speaking to:

- Several various craft workers operating scissor lifts and aerial lifts at the Low Activity Waste facility (LAW) and the Chiller-Compressor Plant (CCP) regarding operator cards, maintenance, and equipment upkeep,
- Rigging and Equipment Superintendent regarding the daily equipment inspection form process, and
- The Equipment Inspection Records Administrator regarding the daily equipment inspection forms process.

Field Observation:

In the field the inspector:

- Inspected numerous scissor lifts and aerial lifts to evaluate equipment condition (No concerns noted),
- Observed workers using scissor-lifts and aerial lifts at the LAW and CCP, noting proper use and technique for operating the equipment including personal fall protection tie-off, and
- Checking operators for proper authorization for the equipment being used.

Discussion of Results:

1. The process for completing the daily inspections is adequate although some inspection forms are not being returned to the records administrator. Additionally the form being used to document the daily inspection does not match what is provided in procedure 24590-WTP-GPP-SIND-033, *Articulated Boom Platforms Appendix*.
2. Scissor lifts and aerial lifts were found adequately maintained and serviced. Defective equipment was reported to be taken out of service when identified and repaired in a timely manner. All equipment reviewed contained appropriate operating controls.
3. Workers were observed to operate scissor lifts and aerial lifts in a safe and OSHA compliant manner with the exception of some not having current operator cards and in one case a worker at the CCP was observed moving a scissor lift without his fall protection equipment being attached. He was notified by the inspector and he corrected the situation immediately. Aerial lift operators at the CCP and the LAW were requested to show their operator's card to demonstrate their authorization to operate the equipment they were using. Out of six reviews, three workers did not have cards authorizing them to operate the equipment they were using. A similar review was performed for scissor-lifts by using the daily inspection record and comparing it to the training records. Out of five scissor-lifts reviewed, training records for two workers indicated that OJT had not been completed on the scissor lift they each operated.
4. A good practice was observed at the LAW. Another type of lifting device was being used to lift pipe and duct work up into the overhead (called High Lifts or High Jackers). One subcontractor (Intermech) has a program to document inspection of the lifts each day. A review of the users manual indicated the manufacturer expects a before use inspection.
5. 24590-WTP-GPP-SIND-027, *Fall Prevention and Protection*, Section 3.2.1.2 appears to contradict section 3.2.1.14 which allows the worker to detach the lanyard from the platform anchorage when the scissor lift is stationary.


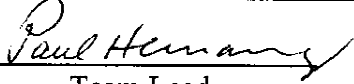
Conclusion:

Overall the operation and use of scissor and aerial lifts is acceptable with the exception of several workers not having up-to-date operator cards and one instance where a worker did not have his fall-protection harness attached to the scissor lift platform anchorage.

Issue(s):

29 CFR Part 1926, Section 453, Paragraph (b)(2)(ii) states, "Only authorized persons shall operate an aerial lift." Contrary to this requirement, several workers did not have operator cards or OJT that authorized them to operate the equipment. See comment 3.

24590-WTP-GPP-SIND-027, *Fall Prevention and Protection*, Section 3.2.1.14 states in part, "The employee must be reattached the lanyard to the platform anchorage before any movement of the platform." Contrary to this requirement, a worker was observed at the CCP moving a scissor lift in the vertical direction without his lanyard being attached to a platform anchorage." See comment 3.

Assessor: Joe Christ  2/23/06	Approved:  Team Lead
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**Criteria and Review Approach Document
BNI IH&S February 2006 – Assessment Form**

Functional Area: BNI IH&S	Assessment Element: Hand & Power Tools	Facility or Process: WTP	Date: 2/22/2006	CRITERIA MET YES: <u> X </u> NO: <u> </u>
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OBJECTIVE:

Performance Criteria or Assessment Elements:

Hand and power tools are properly maintained in a safe working condition and properly used. (29 CFR 1926.300-306)

Approach:

Conduct field tours observing tool usage, maintenance, and storage at various locations around the WTP site and interview workers as necessary.

Documentation:

24590-WTP-GPP-CON-2301, *Construction Tool and Equipment Inspection*, Revision 2, Effective Date: April 5, 2004

24590-WTP-GPP-SIND-024, *General Safe Work Practices*, Revision 2, Effective Date: August 31, 2004

Records Reviewed:

None

Interviews Conducted:

Laborer foreman at Warehouse

Field Observation:

During a tour of the LAW on 2/15/2006 a drill press located at the west end of the +3 elevation was not bolted down as required by 29CFR1926.300(b)(6). This condition was discussed with a worker using the drill press and he was requested to notify his supervisor. A follow up inspection on 2/16/2006 indicated that the drill press had been bolted to the floor.

A tour of the vehicle maintenance shop, the fabrication shop, and the carpenter shop found acceptable conditions for tool and equipment use. In the fabrication shop an Ellis

bandsaw (JO-55-253) was not bolted to the floor as required by 29CFR1926.300(b)(6). This was the only significant deficiency found in the three shops.

Tool boxes in the LAW and Lab facilities were inspected and tool usage observed with no adverse behaviors observed other than some tools were being stored with bits and blades remaining installed.



BNI is currently inventorying tools being returned from the Pretreatment and High Level Waste facilities are part of the on-site work cessation process. An interview with the laborer foreman involved with this process reported that no returned tool has had any obvious damage that would require it to be removed from service. Based on the large number of tools that were removed from the field for inventory, the inspector considered this lack of observable damage as a good indicator that tools are being maintained effectively.

Conclusion:

Power and hand tools are being used and inspected properly.

Issue(s):

None

Assessor: Joe Christ  2/23/06	Approved:  Team Lead
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**Criteria and Review Approach Document
BNI IH&S February 2006 – Assessment Form**

Functional Area: BNI IH&S	Assessment Element: Stairways and Ladders	Facility or Process: WTP	Date: February 13-22, 2006	CRITERIA MET YES: X NO: _____
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OBJECTIVE:

Verify that the RPP/WTP ladders and stairways are in compliance with OSHA 29 CFR 1926.1052 Stairways and OSHA 29 CFR 1926.1053 Ladders and meet the procedural requirements of the RPP/WTP Procedure: 24590-WTP-GPP-SIND-031, **Portable Ladders—Control and Inspection**, Revision 1, Effective Date: November 4, 2002

Approach : DOE Assessor walked through and around the outer perimeter of most of the main facilities at WTP on multiple occasions throughout the assessment period, both alone and with other DOE assessment team members. This included each of the floors levels of the Low Activity Waste (LAW) Facility, the Laboratory Facility, portions of the Pretreatment Facility, the Chiller/Compressor Plant, the T-1 Support Facility and other support facilities. During these field reviews the DOE S Assessor conducted concurrent reviews of the JHA Program elements, Fall Prevention and Protection practices, Stairway and Ladder condition and inspection currency, and other General Safe Work Practices.

Performance Criteria or Assessment Elements:

Criteria contained in the applicable WTP procedures and OSHA requirements.

Records Reviewed:

29 CFR 1926.1052 Stairways
 29 CFR 1910.23 (d) Stairway railings and guards
 29 CFR 1926.1053 Ladders
 Procedure: 24590-WTP-GPP-SIND-031, **Portable Ladders—Control and Inspection**, Revision 1, Effective Date: November 4, 2002
 Procedure: 24590-WTP-GPP-SIND-031, **Portable Ladders—Control and Inspection**, Revision 2, (Currently in revision with no effective date yet assigned)

Field Observation:

Stairway and ladder usage and condition at the WTP site was acceptable. No discrepancies, except the item noted below, were found in stairway and ladder configuration, usage, tagging or record of inspection.


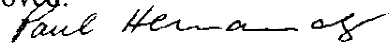
Discussion of Results:

NOTE: During the January 21-27, 2005, ladder and stairway inspection by the DOE Facility Representative (FR), it had been noted that, "Two stairways in the LAW Facility, going from the +3 foot elevation to the -21 foot elevation, have stair rail systems against the concrete wall that do not provide an adequate handhold for employees to grasp. The stairways do have a sari rail system along the unprotected edge, thus complying with code requirements. The contractor is aware of the conditions and (reportedly) has requested Design Engineering to modify the stair rail system to a handrail connected directly to the concrete wall."

During the February 15, 2006, inspection, it was noted that the condition of stair rails along the concrete wall have not been changed—no modifications have been made to connect the handrails directly to the concrete wall. The documentation showing that this unacceptable design/fabrication flaw has been reported to Design Engineering by BNI, and scheduled for remediation, needs to be provided by BNI personnel to the DOE Assessment Team.

Conclusion:

Stairway and ladder usage and condition at the WTP site was acceptable. No discrepancies, except the stair rail design/fabrication discrepancy previously identified during January 2005, by the ORP FR, were found in stairway and ladder configuration, usage, tagging or record of inspection.

<p>Assessor: John E. Cavanaugh, P.E., CSP DOE RL SED Safety & Health Engineer</p> 	<p>Approved:  Team Lead</p>
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**Criteria and Review Approach Document
BNI IH&S February 2006 – Assessment Form**

Functional Area: BNI IH&S	Assessment Element: Signs and barricades	Facility or Process: WTP	Date: 2/22/06	CRITERIA MET YES: ____ NO: <u> x </u>
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OBJECTIVE:

Performance Criteria or Assessment Elements:

Signs and barricades

Approach:

Conduct field tours observing overhead work with the potential for falling objects. Evaluate construction areas to determine if barricade systems were designed to warn of hazards and physically identified hazards.

Records Reviewed:

Code of Federal Regulations, 29 CFR 1926, *Safety and Health Regulations For Construction*.

BNI Procedure 24590-WTP-GPP-SIND-028_Rev 5, *Tags, Signs, Rope, Warning Tape and Barricades*, dated December 14, 2005.

Danger Tag, "Do Not Enter Overhead Work" LAW building, undated.

Inspection Note No. A-05-AMWTP-RPPWTP-002-62, dated May 18, 2005.

Interviews Conducted:

Foreman for Iron Workers, LAW

Foreman for Cobra Construction, Chiller-Compressor Plant

Foreman for BNI, Chiller Compressor Plant

Field Observation:

The ORP assessor toured various site areas and facilities under construction including the Pretreatment and Low Activity Waste Plants, Chiller-Compressor Plant, offices, shops, parking areas, and open areas. The assessor was evaluating protective corrective measures implemented as a result of falling objects that had occurred at WTP.

Discussion of Results:

On 2/14/2006 the ORP Team observed a BNI Iron Worker installing a horizontal life line across the mid-section of the 68-foot level of the Low Activity Waste (LAW) Facility. This worker was properly tied off with the required fall protection equipment while working off a steel beam along the north edge of the LAW. However, the area below him had not been barricaded to assure no one might enter that area and be subject to falling objects resulting from the work activity. This potential hazardous condition was brought to the attention of the Iron Worker Foreman. He immediately contacted the Iron Worker, stopped his work, and then installed a red danger tape barrier on the level below the work location. He attached the required Danger Tag to identify the hazard and control measures. (1st)

On 2/15/06 the OPR assessor observed a Chiller Compressor Plant worker in aerial lift JO-14-089 performing overhead work with no barricade under work area and non-tethered materials. At lunch break a 4" piece of metal was left up on the web of a structural steel roofing member. The assessor discussed the issue with the Cobra Superintendent. (2nd)

ORP assessor observed a LAW employee in aerial lift JO 54 020 performing overhead work with a barricaded area under the work area. However, there were no warning signs or tags used in conjunction with the red barricade tape. As outlined in section 3.2 of BNI Procedure 24590-WTP-GPP-SIND-028_Rev 5, *Tags, Signs, Rope, Warning Tape and Barricades*, all signs or tags will include Danger information, the supervisor's name, a description of the hazard, phone extension or radio channel, and any other pertinent warnings. (3rd)

ORP assessor observed a Chiller Compressor Plant worker in aerial lift performing overhead work with no barricade under work area. There was a sizable barricaded area but the aerial lift had been telescoped (boomed) out so that the area below the worker was outside the barricaded area. By the time the assessor discussed the issue with the Cobra Superintendent the worker had retracted the boom and was once again above a barricaded area. (4th)

Conclusion:

In general there was a high level of awareness of the dangers of falling objects and adherence to the provisions contained in the BNI Procedure 24590-WTP-GPP-SIND-028_Rev 5, *Tags, Signs, Rope, Warning Tape and Barricades*. In spite of aggressively working this problem over the last there were indications that not all workers understood or embraced the falling object provisions. In particular, 50% of the incidents took place at the Chiller Compressor Plant by Cobra workers. The provisions of the BNI procedures are required to be flowed down to BNI subcontractors.

Issue(s):

RL-REG-2000-04, Section 1.0 states "The specific IH&S requirements of the plan to which the Contractor is committed by Contract are provided as Appendix A." Appendix A, *Industrial Health and Safety Requirements*, Section 12.b, states that the Contractor must comply with Title 10 CFR, Part 1926, "Safety and Health Regulations for Construction."

10 CFR 1926.501(c), *Protection from falling objects*, requires the following: "When an employee is exposed to falling objects, the employer shall have each employee wear a hard hat and shall implement one of the following measures: (1) Erect toe boards, screens, or guardrail systems to prevent objects from falling from higher levels; or (2) Erect a canopy structure and keep potential fall objects far enough from the edge of the higher level so that those objects would not go over the edge if they were accidentally displaced; or (3) Barricade the area to which objects could fall, prohibit employees from entering the barricaded area, and keep objects that may fall far enough away from the edge of a higher level so that those objects would not go over the edge if they were accidentally displaced.

Although 29 CFR 1926.501(c) does not require a formal written program or procedures for implementation of protection from falling objects, BNI had a procedure *Tags, Signs, Rope, Warning Tape and Barricades*, in place. Section 3.2 states, "All signs and/or tags will include warning "Danger" or "Caution" hazard information, the supervisor's name, a description of the hazard, phone extension or radio channel and any other pertinent warnings. Hand written information on the signs and/or tags must be legible, in indelible ink, visible at all times when work is being performed and shall be removed or covered promptly when the hazards no longer exist."

Section 3.4 states, "Where immediate (imminent) danger to life or health is present, red danger tape or rope will be used to identify and isolate the area.

All areas where overhead work is being performed, and where a risk of falling objects presents an "imminent" danger, must be barricaded using red danger tape or rope.

Red danger tape or rope barricades are required anytime overhead work creates or presents an imminent dangerous hazard. Where this is not possible, the Superintendent and/or the Safety Representative shall be contacted for resolution before work is performed at height. This may include the use of a spotter to warn other employees of the imminent dangerous situation.

To mitigate, or minimize imminent danger situations all overhead work shall include the use of tool/equipment lanyards where possible or practical and a containment area as described within this paragraph. All red danger barricades shall have a danger sign or tag attached to the tape or rope, and must include a description of the hazard(s), and the name, phone number or radio channel of the responsible supervisor."

Contrary to the above requirements the assessment team found three instances where barricades were not erected below overhead work areas, and one location where danger tags were missing from a red danger barricade.

Assessor: Paul Hernandez <i>Paul Hernandez</i>	Approved: <i>Paul Hernandez</i> _____ Team Lead
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**Criteria and Review Approach Document
BNI IH&S February 2006 – Assessment Form**

Functional Area: BNI IH&S	Assessment Element: Job Hazard Analysis Program	Facility or Process: WTP	Date: February 13-22, 2006	CRITERIA MET YES: X NO: _____
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OBJECTIVE:

Verify that the Job Hazard Analysis Program being used at the River Protection Project/Waste Treatment Plant (RPP/WTP) meets DOE expectations and is in compliance with the RRP/WTP JHA Procedure: **Job Hazard Analysis (JHA)/Safety Task Analysis Risk Reduction Talk (STARRT)**, 24590-WTP-GPP-SIND-002, Rev 4 & 5

Note: The BNI officially accepted JHA procedure revision, as noted by BNI Management approval signatures on November 4, 2004, during this DOE assessment was Rev. 4. However, it was noted by BNI officials that Rev. 5 had been, and continued to be, actively worked during this assessment period, and certain portions of Rev. 5, such as the new version of the ISMS-based STARRT Card, had been incorporated into the daily WTP task JHA process for the past several months.

Performance Criteria or Assessment Elements:

The Assessor will verify that:

- this is a procedure for conducting pre-job planning to ensure that potential Environmental Safety and Health hazards are identified and controlled, and that appropriate hazard information is communicated to each employee prior to starting a job or task.
- the JHA process ensures employee involvement in both hazard identification and hazard control and is recognized to be essential to this process.
- the JHA procedure implements the Project Integrated Safety Management System (ISMS) by addressing the following ISMS Core Functions: Analyze the Hazards, Develop and Implement Hazard Control, Perform work Within Controls, and feedback and Continuous Improvement.
- the JHA procedure also demonstrates the Project's support for the following ISMS Guiding Principles: Line Management Responsibility for Safety, Clear Roles and Responsibilities, Identification of Safety Standards and Requirements, and Hazard Controls Tailored to Work Being Performed.

Approach: Evaluate – through document review, personnel interviews and worksite observations.

Documentation:

Records Reviewed:

- Procedure 24590-WTP-GPP-SIND-002, Rev 4, **Job Hazard Analysis/Safety Task Analysis Risk Reduction Talk (STARRT), Approved by BNI signature on November 4, 2005**
- Draft Procedure, obtained on February 13, 2006: 24590-WTP-GPP-SIND-002, Rev 5, **Job Hazard Analysis/Safety Task Analysis Risk Reduction Talk (STARRT)**
- Draft Procedure, obtained on February 22, 2006: 24590-WTP-GPP-SIND-002, Rev 5, **Job Hazard Analysis/Safety Task Analysis Risk Reduction Talk (STARRT)**
- Job Hazard Analysis 24590-WTP-JHA-CONS-03-029, Rev.001, **Installation of Structural and Miscellaneous Steel**, dated June 8, 2005
- **WTP Plan-Of-Day Planning Schematics for LAW Facility**, February 22, 2006, Elevations - 21', 3', 28', 48' and 68'
- Corrective Action Report, Number 24590-WTP-QA-05-323 Rev.0, Finding Date December 13, 2005, Entry Date December 21, 2005 **SAFETY BULLETIN RPP/WTP**, February 23, 2006, **Key JHA Requirements**
- **Office of River Protection Site Action Plan for the WP&C Commitment 23-DNFSB Recommendation 2004-1**, Performance Objective WPC-4: Work Planning and Control Activity, Opportunity for Improvement: **WPC-BNI-OFI-2**

Interviews Conducted:

- BNI Safety Assurance Manager
- BNI Safety Representative/Senior Trainer
- BNI Project General Foreman
- BNI Site Foreman
- BNI Iron Worker Foreman
- BNI Senior Field Engineer-Coatings
- 2 Intermec Sheet Metal Workers
- 2 White Shield Surveyors
- 5 BNI Iron Workers
- 2 BNI Carpenters
- 1 BNI Operator (Forklifts/Cranes)
- 4 DOE ORP Facility Representatives

Field Observations:

DOE SED Assessor walked through and around the outer perimeter of most of the main facilities at WTP on multiple occasions throughout the assessment period, both alone and with other DOE assessment team members. This included each of the floors levels of the Low Activity Waste (LAW) Facility, the Laboratory Facility, portions of the Pretreatment Facility, the Chiller/Compressor Plant, the T-1 Support Facility and other support facilities. During these field reviews the DOE SED Assessor conducted concurrent reviews of the JHA Program elements, Fall Prevention and Protection practices, Stairway and Ladder condition and inspection currency, and other General Safe Work Practices.

Field observations of construction work activity, and related personnel interview, within or around these facilities throughout the assessment period include:

- Several instances of craft installing or removing scaffolding on different levels of the LAW.
- The installation of a horizontal life line at the 68-ft elevation, and the installation of the falling-object-protection red ribbon barrier and warning tag on the 48-ft elevation below this work activity after the missing barrier was pointed out by the DOE Assessors.
- Five separate instances on multiple levels of the LAW facility of craft using scissor lifts to conduct elevated work. In each instance these operations utilized a spotter for safety and to assist the operator of the scissor lift during repositioning moves and setup. Once in place, if the elevated work required a significant period of time to complete, the spotter usually fenced off the area around the scissor lift with red barrier ribbon and a warning tag.
- Two Intermec sheet metal craft fabricating a ventilation grating. The STARRT Card for this task was reviewed, and both craft interviewed. Both said they liked the STARRT Card process for planning and hazard identification emphasis.
- Two surveyors in the parking area on the west side of the Pretreatment Facility sighting underground utility line locations in support of utility excavation work. The STARRT Card for this task was reviewed, both surveyors interviewed, and each said they like the STARRT Card process because it provides a good tool to plan their tasks and to consider hazards they might encounter during their work.
- One craft Operator of a Class VII forklift who was assisting in relation to the Chiller Compressor Plant construction work. He proudly presented his qualification cards for several models of forklifts, noting he is also a qualified crane operator. He stated he appreciated the STARRT Card as a good communications tool for the work crew.
- Observed a two-person BNI technical team conducting sampling and investigation work related to the fire protection coating on the outer north side of the LAW. The BNI Senior Field Engineer-Coatings was interviewed and his STARRT Card reviewed. He likes it because it augments communication among the crew for planning and discussing their intended work and identifying potential hazards.
- Attended Plan-of-Day meeting for pipe fitters, iron workers and carpenters at LAW Facility on 2/22/06.
- Attended the iron workers and carpenters section meeting after the POD, and participated in morning stretch exercises. Then attended the Foremen meeting and explain the reason for assessment is to observe and review the STARRT card process with crews.
- Visit carpenters conducting demolition of a temporary rolling roof structure at the south west corner of the 48 elevation of the LAW. Reviewed the STARRT Card and one carpenter, a 14-year Hanford worker, says they like the card as a good tool to discuss the task and identify hazards and protective measures.
- Visit with iron worker crew on 48-foot elevation near the north end of LAW. They will be doing some steel bolt up work. The STARRT Card was reviewed and discussed with the Foreman. They like the card process as a communication tool, hazard identification aid, easy to fill out.

Discussion of Results:

The DOE Assessor's review of the BNI RPP/WTP Job Hazard Analysis (JHA) program began with the attendance of the six-hour RPP/ WTP Safety Orientation Class on February 13, 2006. The BNI Trainer did an excellent job explaining the basics of the JHA program. He pointed out that the JHA program has been going through an ongoing evolution throughout the operational life of the RPP/WPT, and the current JHA procedure was now going through the fifth revision. Though the official BNI Management-approved version at that time was Rev. 4, some aspects of

the anticipated Rev. 5 were actively being employed at the WTP. In particular the Safety Analysis Risk Reduction Talk (STARRT) Card found in the officially approved Rev.4 had been replaced by a newer STARRT Card version. The instructor noted that this new STARRT Card is a major revision of the previous format and concept, in that the new card emphasizes more active involvement and thinking by workers in identifying potential hazards and protective measures. Rather than relying on workers merely checking off on a long list of potential hazards listed on the Rev.4 version of the STARRT Card, the Rev.5 STARRT Card format incorporates the ISMS Core Functions to address potential hazards and associated precautions. Before a task begins, the Rev.5 STARRT Card requires that the task supervisor and each of the workers assigned to that task work together to plan and think through and discuss the task activities. The crew then documents on the card the scope of work, they must analyze and list the potential hazards, they document how to implement the necessary hazard controls, and after performing the work, the crew can document feedback for improvement. If properly used, this STARRT Card procedure requires meaningful communication among the crew members.

As part of the assessment on February 16th, the DOE assessor also attended a WTP class on the Job Hazard Analysis process. The class was attended by 31 WTP craft personnel, including 3 Foremen. The BNI Instructor did an excellent job explaining the JHA and STARRT Card program and process. The class members were very attentive and asked good questions relative to the STARRT Card process. Though this task safety review process has been in operation for several months and the workers indicated they liked it as a tool, they asked for clarification regarding what might be expected as documentation in a couple sections of the STARRT Card. The instructor explained that some of the items within the card, such as those in the two sections at the top of page 2 that deal with Emergency Preparedness issues and basic Personal Protective Equipment, are meant to be reminders or common topics that should be discussed and provided for in the conduct of all construction tasks. He noted some sections may not require specific documentation other than a check to note the subject was discussed. The trainer stated that the STARRT Card process has been, and probably will continue to be, a dynamic process, and he emphasized that the BNI Safety department welcomes feedback from the employees and ideas to improve the Job Hazard Analysis process. According to the instructor, with this class completion all of the WTP craft had received this JHA training.

On the February 22, 2006, the DOE Assessment Team became aware of a BNI Internal Audit Finding and a resulting Corrective Action Report. The BNI Audit, conducted on December 13, 2005, found that: *WTP personnel were working under an outdated JHA. The supervisor of the crew was aware of the revised JHA. However, in lieu of pausing the work and contrary to procedure requirements, he elected to have the crew continue working without first reviewing the revised JHA with them.* As a result of this finding, a BNI **Safety Bulletin** was to be issued by February 23, 2006, *specifying the key points about the JHA requirements, responsibilities and what takes place when there is a revision to the JHA.* On February 22, 2006, at the preliminary closeout meeting of this DOE assessment, the BNI Safety Assurance Manager provided an updated version of Rev.5 of the BNI JHA procedure. This new version of the draft Rev.5 JHA procedure has been significantly revised with several specific statements addressing managerial involvement and with supervisory responsibility clearly specified. These changes definitely strengthen the procedure rigger and should improve the effectiveness of the BNI JHA process. On February 23rd, the RPP/WTP **Safety Bulletin** titled, *Key JHA Requirements*, was published addressing the December 21, 2005, BNI CAR. Much of the material in this bulletin, particularly the information defining supervisory roles and responsibilities, is found in the newly revised draft Rev.5 JHA.

Conclusion:

The BNI JHA/STARRT procedure defines an effective process for conducting pre-job planning to ensure that potential Environmental Safety and Health hazards are identified and controlled. The JHA process, which has been positively evolving during the life of the RPP/WTP, when properly administered, enables appropriate hazard information to be formulated and presented to each employee prior to starting a job or task. It was found that the JHA process effectively involves employees in both hazard identification and hazard control and is recognized to be essential to this process. The BNI JHA process incorporates the ISMS core functions and demonstrates the Project's support of ISMS. The STARRT Card process is an excellent task planning and communication tool that should augment the adoption of the Voluntary Protection Program. The recent additions to the draft JHA Rev.5, which more clearly specify roles and responsibilities of BNI supervision in the JHA process, enforce the credibility of the BNI commitment to employee safety and should result in an improved JHA process.

Issue(s):

The current officially accepted **Job Hazard Analysis (JHA)/Safety Task Analysis Risk Reduction Talk (STARRT)**, 24590-WTP-GPP-SIND-002, Rev. 4, effective date November 4, 2004, contains the following statement in section 3.2.4:


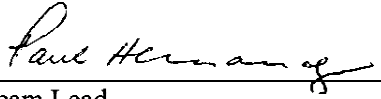
Employee—Employee(s) will be trained by their supervisor on the requirements of this procedure and their individual responsibilities to:

.....
.....

- Stop work, notify supervision, and resolve all safety and health concerns when unexpected hazards or unsafe conditions are identified during performance of the task.

This **STOP WORK** statement has been removed from the most recent versions of draft procedure, **Job Hazard Analysis (JHA)/Safety Task Analysis Risk Reduction Talk (STARRT)**, 24590-WTP-GPP-SIND-002, Rev.5.

BNI Management was made aware of this oversight and will incorporate the stop work statement in Rev. 5.

<p>Assessor: John E. Cavanaugh, P.E., CSP DOE RL SED Safety & Health Engineer</p> 	<p>Approved:  Team Lead</p>
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**Criteria and Review Approach Document
BNI IH&S February 2006 – Assessment Form # 1**

Functional Area: BNI IH&S	Assessment Element: Scaffolding	Facility or Process: Waste Treatment Plant	Date: February 15, 2006	CRITERIA MET YES: <u> X </u> NO: <u> </u>
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OBJECTIVE: The purpose of this assessment is to confirm whether the Contractor complies with the requirements of DOE O 440.1A, 29 CFR 1910, "Occupational Safety and Health Standards for General Industry," and 29 CFR 1926, "Safety and Health Regulations for Construction," and with Contractor-defined policies and procedures for protecting employees from conventional workplace hazards.

Performance Criteria or Assessment Elements:

1. Scaffolding is designed, constructed, used, and maintained according to IH&S regulations. (29 CFR 1926.451, 452, 453, and 454)

Approach:

Conduct field tours of construction areas with scaffolding to determine compliance with requirements.

Documents Reviewed:

29 CFR 1926 Subpart L Scaffolds.

Procedure 24590-WTP-GPP-SIND-004, *Scaffolding*. Revision 4, Effective date of June 1, 2005.

Records Reviewed:

Scaffold Request Form LAW#00245

Interviews Conducted:

LAW Carpenter Forman (Competent Person)
Scaffold Engineer
Scaffold Superintendent
Craft

Field Observation:

The above attributes were verified for all scaffolding at the Waste Treatment Plant

(WTP) site. All scaffold erection requires a Scaffold Request Form. Light duty scaffolding is not allowed to be used on the WTP project. Medium duty scaffold with posts spaced not more than 3 ½ feet apart by 8 feet along the length of the scaffold do not require engineering review. Heavy duty scaffold with the posts spaced not more than 6 feet by 6 feet do not require engineering review. Scaffold capacity requirements are met by following the manufacture's standard installation requirements. All hanging, suspended, or interior hung scaffolds require approval of the Scaffold Engineer using the Scaffold Request Form. Employees who perform work on scaffolding are trained by a qualified person to recognize the hazards associated with the type of scaffold being used and to understand the procedures to control or minimize those hazards.

The following two discrepancies were noted:

1926.451(f)(3) requires scaffolds and scaffold components to be inspected for visible defects by a competent person before each work shift, and after any occurrence which could affect a scaffold's structural integrity. Specification 24590-WTP-GPP-SIND-004, Paragraph 3.3.10 Scaffold Inspection requires the competent person to sign and date the back side of the scaffold tag to indicate that all components of the scaffold have been visually inspected by the competent person for damages or defects **prior to each shift's use** and following any occurrence that could affect the scaffold's structural integrity. A scaffold with a yellow tag at the -21' elevation of the LAW Facility providing access to ductwork in the corridor outside of Pour Cave #1 had not been inspected since February 8, 2006 (1 week out of inspection). No one was observed using the scaffolding. The LAW Safety Representative was notified and had the scaffolding inspected.

1926.451(f)(3) requires scaffolds and scaffold components to be inspected for visible defects by a competent person before each work shift, and after any occurrence which could affect a scaffold's structural integrity. Specification 24590-WTP-GPP-SIND-004, Paragraph 3.3.9 Scaffold Tagging requires the mandatory use of scaffold tagging. All scaffolds shall be tagged by a competent person. No one shall work for an untagged scaffold. An untagged scaffold is to be treated as a red-tagged scaffold. A scaffold over the compressor at the Combination Shop was not tagged. No one was observed using the scaffolding. The Field Superintend was notified and had the scaffolding tagged and inspected.

Conclusion:

Scaffolding at the WTP site was satisfactory. No discrepancies were found in scaffolding configuration, assembly, dismantling, or usage. Only two scaffolds had inspection/tagging discrepancies and they were corrected immediately.

Issue(s):

None

<p>Assessor: Jeff Bruggeman <i>Jeff Bruggeman</i> 2/23/06</p>	<p>Approved: <u><i>Paul Hernandez</i></u> Team Lead</p>
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