Idaho Cleanup Project

Action Plan

Commitment 23, Work Planning and Control
Commitment 25, Feedback and Improvement

DNSFB Recommendation 2004-1

Idaho Cleanup Project

NOTE: Change Control for this Site Action Plan resides with the Field Office Manager (or designee), with a cc: to EM-3.2.

Executive Summary

Evaluation Process

This assessment was conducted as part of the Idaho Cleanup Project (ICP) response to Commitments #23 and #25 of the Department of Energy's Implementation Plan (IP) for Defense Nuclear Facilities Safety Board (DNFSB) Recommendation 2004-1, "Oversight of Complex, High-Hazard Nuclear Operations". This assessment was conducted in accordance with the instructions provided in the November 18, 2005 DOE Headquarters memorandum from the Chief Operating Officer for Environmental Management. Specific direction was provided to perform a review of the contractor in the area of work planning and control, and feedback and improvement. The assessment team determined that a combination of existing assessment data and a conducting a focused assessment would be required to fully evaluate all work planning and control, and feedback and improvement processes utilized by CWI.

The CWI assessment team was organized into five groups with the Project Evaluation Board Manager as the lead for the assessment. Four of the groups were assigned to specific ICP areas (INTEC, RWMC, Construction, and D&D) to evaluate work practices and program implementation. The fifth group was assigned to evaluate ICP programs. Each of the teams was led by an experienced assessor who was familiar with requirements for work control and the ISMS. A pre-assessment meeting was held with the team leaders and the assessment team members to review expectations and the assessment methodology. Daily debriefings were held with the PEB Department Manager to ensure the assessment remained focused and to identify key issues. The assessment started on December 12, 2005 and completed on January 6, 2005. CWI management was briefed on the results of the assessment.

The CWI assessment teams used the Criteria Review and Approach Documents (CRADs) as specified in the following:

- Work Planning and Work Control Assessments and Site Action Plans for Defense Nuclear Facilities Safety Board Recommendation 2004-1, Commitment 23; David K. Garman, Under Secretary for Energy, Science and Environment, November 9, 2005
- Defense Nuclear Facilities Safety Board Recommendation 2004-1, Integrated Safety Management System Feedback and Improvement; David K. Garman, Under Secretary for Energy, Science and Environment, November 9, 2005

The CRADs and associated criteria were reviewed by the team in preparation for the assessment. In addition, the daily debriefings ensured that assessment of the CRADs and their associated criteria remained focused and met the expected needs of the assessment.

Overall Evaluation Summary

WORK PLANNING AND CONTROL, COMMITMENT 23

The results of this assessment determined that ICP meets the objectives for CRAD-3 (*The contractor has developed an effective work planning and control process*). The objectives for CRAD 4 (*Proposed work activities are adequately defined and analyzed to identify hazards and their associated controls*); CRAD 5 (*The contractor work planning process generates work control documents that lead to safe and efficient completion of work activities*); and CRAD 6 (*Contractor personnel perform work in accordance with approved work control documents)* were partially met. The objective for CRAD 7 (*The Contractor has an established process that requires line management and assessment personnel to perform timely assessments/surveillances of the work planning and control process, including periodic reviews of active and in-development work control documents*) was not met.

The following table provides the results of this assessment.

CRAD #	Objective Met	Objective Partially Met	Objective Not Met	Comments
3	X			2 OFI's noted
4		X		1 OFI noted
5		X		2 OFI's noted
6		X		2 OFI's noted
7			X	2 OFI's noted

FEEDBACK AND IMPROVEMENT, COMMITMENT 25

The results of this assessment determined that ICP meets the objectives for CRAD 2.2 (The Contractor has developed and implemented an Operating Experience program that communicates Effective Practices and Lessons Learned during work activities, process reviews, and incident/event analyses to potential users and applied to future work activities); CRAD 2.3 (Contractor line management has established and implemented programs and processes to identify, investigate, report, and respond to operational events and incidents and occupational injuries and illnesses); and CRAD 2.4 (The Contractor has developed and implemented a formal process to evaluate the quality and usefulness of feedback, and track to resolution performance and safety issues and associated corrective actions). The objectives for CRAD 1(Contractor Line management has established a comprehensive and integrated operational assurance system which encompass all aspects of the processes and activities designed to identify deficiencies and

opportunities for improvement, report deficiencies to the responsible managers, complete corrective actions, and share in lessons learned effectively across all aspects of operation) and CRAD 2.1 (Contractor Line management has established a rigorous and credible assessment program that evaluates the adequacy of programs, processes, and performance on a recurring basis. Formal mechanisms and processes have been established for collecting both qualitative and quantitative information on performance and this information is effectively used as the basis for informed management decisions to improve performance) were partially met. The following table provides the results of this assessment.

CRAD #	Objective Met	Objective Partially Met	Objective Not Met	Comments
1		X		2 OFI's noted
2.1		X		2 OFI's noted
2.2	X			No OFI's noted
2.3	X			No OFI's noted
2.4	X			No OFI's noted

This assessment was completed and submitted as requested by Department of Energy's Implementation Plan Commitment 23 and Commitment 25 for Defense Nuclear Facilities Safety Board Recommendation 2004-1, *Oversight of Complex, High-Hazard Nuclear Operations*; Request for Action (OS-QSD-05-13); E. M. Sellers, December 2, 2005. Due to the short amount of time to prepare and complete this assessment and the limited amount of actual work occurring during the assessment period, findings are based upon a limited sample size.

The most significant findings involve: (1) situations where personnel failed to follow work control documents as written (one of these involved a routine task that is performed typically three times a week), (2) excessive reliance on maintenance planners to identify hazards and establish controls for maintenance work without input or review from subject matter experts, and (3) needed improvements in the conduct of self-assessments. Additionally, there appears to be an excessive amount of unscheduled/emergent work that is added to the planned work schedules. This increases worker and supervisor frustration, impacts craft utilization and has the potential to create error likely situations.

These areas of improvement appear to stem from the ineffective implementation of existing programs and processes. Programs, such as the Safety Assessment Center and Executive Safety Review Board, have been implemented for a short period of time and the Site has not been able to fully realize the feedback and improvement value inherently imbedded. In another area, the process outlined within MCP-3562, *Hazard Identification Analysis and Control of Operational Activities*, provides a foundation for a highly rigorous hazard identification program for the development of operating procedures. This same rigor is not imposed upon the development of work documents.

These, and other, programs and processes are in themselves identified as Good Practices later in this document. This evaluation determined that the issues identified from the CRADs of Commitments #23 and 25 are implementation related, not program breakdowns.

SECTION I – DOE Oversight

SECTION II – CWI-ICP

Performance Objective WPC-3: Work Control Program Documentation

When CWI began work on the ICP in May 2005, the work control program documentation that was in effect at the INL remained in effect to provide a framework within which CWI could conduct business under the new, performance based contract. The document hierarchy which existed at the start of the contract continues to be in effect today.

The controlling documents (STD-101, *Integrated Work Control Process*, MCP-3192, *Hazard Identification Analysis and Control of Operational Activities*, and GDE-6210, *Maintenance Guide*) describe and establish requirements for initiating, analyzing and developing work control documents, including job hazard analyses.

There are several different document types used for control of work, including three levels of maintenance work orders (minor maintenance, expedited maintenance, or planned maintenance each according to increasing hazards, complexity and risk), project work orders and operating procedures. Levels of review and approval are established for each of these work control documents in their respective MCPs, STDs and other company-level procedures. The choice of which work control document is used is a function of the organization performing the work, the nature of the work (operations, corrective maintenance [e.g. repair], routine or preventive maintenance [e.g. calibration], D&D, construction and environmental restoration), as well as the degree of risk, hazards and complexity of the work.

Subcontractor work is controlled using project work orders and is subject to the same level of control as that used by CWI organizations, except as noted elsewhere in this report.

Extensive training and qualification requirements exist for crafts and operations personnel. These training topics involve company requirements, craft and operations skills and qualifications, safety and health training and other relevant topics. In addition, many positions, such as maintenance personnel, have core, position specific and facility specific training requirements. Training and qualification requirements also exist for work control managers and planners as well as for other line managers involved in the work control process. Auditable training records are maintained on a web-based system (*TRAIN*) to which first line supervisors and above have access to assure that crafts, technicians, operators, planners, safety subject matter experts and line managers are trained and qualified.

Turnover requirements exist for transfer of responsibilities of first line supervisors in operations and maintenance. Turnovers are used in operations environments as required in MCP-2980. This MCP outlines the process and requirements for recording shiftily/daily activities. Operations personnel promptly record information regarding activities or events for each key position throughout the shift to ensure the accuracy of the entry. Maintenance criteria for turnover are located in STD-101 (chapter 6) and GDE 6210 (chapter 10).

These documents provide direction regarding interfaces and work control coordination, work boundaries, system operability and testing turnover of physical tasks as well as personnel.

Mechanisms exist to collect and utilize lessons learned and feedback from work activities to be used in planning future activities. ICP uses the same lessons learned database that existed at the INL prior to the contract change that is now shared with the INL. Planners are trained in and have access to this database for use in preparing work packages. In some case (e.g. for construction projects), lessons learned were maintained in hard copy and were found to be functional, but were cumbersome to use. Construction projects also lack mechanisms to track and ensure incorporation of post-work review lessons learned on projects related to Voluntary Consent Orders. Furthermore, the assessment identified weaknesses in post-task feedback responses for field operations and maintenance tasks.

Opportunity for Improvement #1

The requirements for periodic review of JSAs in MCP-135 REV 17, Creating, Modifying, And Canceling Procedures and Other DMCS-Controlled Documents, and the requirements in PRD-25, Activity Level Hazard Identification, Analysis and Control need to be evaluated and the procedure(s) needs to be revised as necessary to provide a correct and consistent periodic review frequency. In addition, a review of JSAs needs to be performed to ensure that the periodic JSA reviews are performed at the proper frequency.

CWI Action	Deliverable	Due Date	Owner/Org
Revise MCP-135 REV 17 to provide correct and consistent periodic review frequencies, as applicable.	Evaluation and revision of the MCP-135 REV 17 procedure	3/1/06	Bill Grace Director, Industrial Safety
Ensure JSAs have been reviewed within the required periodic review frequency.	Verification that JSAs have been reviewed within the required periodic review frequency.	5/1/06	Area Project Managers

Responsible Manager: Bill Grace, Director – Industrial Safety

Opportunity for Improvement #2

To support the development of ensuring appropriate changes are made to the controlling documents: STD-101, *Integrated Work Control Processs*, and GDE-6210, *Maintenance Guide*. A review of the feedback process is warranted. The results of this review will be integrated into improvements to the documents.

CWI Action	Deliverable	Due Date	Owner/Org
Perform an in depth review of the feedback process for work activities and recommend process performance improvements in this area, as appropriate.	Formal evaluation of the feedback and improvement processes, including recommendations for process improvements.	3/1/06	William J. Johnson, COO

Responsible Manager: William J. Johnson, Chief Operating Officer

Performance Objective WPC-4: Work Planning and Control Activity; Definition and Hazard Activity

PDD-1004, *Integrated Safety Management System*, is the program document that describes the flow down of ISMS requirements from the contractual level (ISMS DEAR Clauses and DOE policies and orders) to implementing documents. Work planning and control activity definition for maintenance work is described in STD-101, *Integrated Work Control Process*.

GDE-6210, *Maintenance Guide*, and GDE-6212, *Hazard Mitigation Guide for Integrated Work Control Process*, whereas operating activities are governed by MCP-3562, *Hazard Identification Analysis and Control of Operational Activities*.

Maintenance activity planning involves receipt of a request to perform work and assignment of the request to a maintenance expediter or planner to prepare work documents. Initial discussions of work scope, identification of a team to participate in work package development and walk downs and hazard analyses are primarily performed or led by maintenance planners. For planned and project maintenance work orders, planners perform hazard analysis and identification of controls by filling out a Hazards Profile Screening Checklist (HPSC), Form 430.10. In completing this computer-based checklist, planners use the information obtained during the scope of work development and review of facility documents (e.g., the Facility Hazards List (FHL), equipment history, Documented Safety Analyses (DSA), Fire Hazard Assessments (FHA), environmental permits. Based on the planner's input into the HPSC, control sets are generated as are subject matter expert reviews. This process places a very heavy burden on planners to properly identify the right set of hazards. If a planner fails to identify a hazard, there is no additional review of the package by a SME to correct the package or to involve the SME in the walk down process.

For expedited maintenance work orders and minor maintenance work orders, no HPSC is required by STD-101 or GDE-6210, though other hazard analysis approaches are used, including job safety analyses (JSA). Minor maintenance work is restricted to a less hazardous set of activities by using a specified list of circumstances for which the work may not be performed as minor maintenance.

In contrast, MCP-3562 requires that line managers perform screening activities to identify hazards for operational activities and that they review and approve JSAs, determine whether further analysis is needed and designate appropriate individuals to participate in the team that will further analyze the hazards, the Hazard Evaluation Group (HEG). One issue involving improper flow down of CWI requirements for periodic reviews of Job Safety Analysis (JSAs) was identified as part of a recent Project Evaluation Board (PEB) assessment. This PEB assessment noted that several JSAs were overdue for periodic review. Actions were initiated to correct the problem of having JSAs overdue for review. MCP-3562 provides line managers with a detailed process for performing hazard screening for operational activities that includes hazards related to the task, the facility(ies) in which the task will be performed, potential human errors, lessons learned information and error precursor management. Similar detail is provided for the HEG in analyzing hazards, performing walk downs, using standards to mitigate hazards and other related activities. MCP-3562 also requires that line managers select hazard mitigation according to the hierarchy of engineering controls, administrative controls or PPE.

This assessment team concludes from this difference in approaches that STD-101 and GDE-6210:

- Potentially omit subject matter experts in reviewing or approving maintenance work packages after the hazards and controls are established by the planner,
- do not ensure that line managers designate the members of the team assigned to evaluate the hazards (as does MCP-3562),
- may not ensure that the team so designated acts as a team when evaluating the hazards (individuals may contribute separately to the analysis without meeting together in a table top review or during a walk down),
- permit practices at ICP facilities that rely too heavily on table top reviews instead of walk downs,
- do not explicitly establish a preferred hierarchy of controls (neither MCP-3562, STD-101 nor GDE-6210 mention hazard removal as a part of the preferred hierarchy of controls)
- are written to make maintenance planning for hazard identification, analysis and control an expert-based approach relying on maintenance planners as the primary source of expertise, even though planners are not experts in Documented Safety Analysis (DSA), Fire Hazard Assessments (FHA), environmental permits, and are not required to be Unreviewed Safety Question (USQ) qualified (although they decide whether a USQ review of maintenance work orders are required).

This assessment identified examples of improperly performed hazard analyses as follows:

- Hazards for the planned work were not properly identified and controlled in INTEC WO 60004096, emergency/exit light replacement,
- INTEC JSA-1128, Fuel Oil System, used in conjunction with TPR-7194, Fuel Oil System for transferring fuel oil from a tanker truck to CPP-701 did not identify hazards associated with lifting heavy objects and lifting restrictions were not identified in the TPR for worker protection

Hazard control sets at D&D activities are not customized to the exact work being performed.

Hazard control set for Work Order 602907 at RWMC did not identify a LO/TO requirement for the facility air compressor for incorporation into the work package. Although, the work package did require said compressor to be secured and Locked/Tagged. The compressor was secured and locked before any work commenced. The work package development team failed to include said LO/TO in the required hazard set.

Opportunity for Improvement #1

STD-101, *Integrated Work Control Process*, and GDE-6210. *Maintenance Guide* need to be reviewed for possible improvements to correct the issues identified with work document preparation. This review will provide a basis for procedure revisions to improve the quality of these controlling documents. Completion of these actions will result in improved instruction for the development of work control documents.

CWI Action	Deliverable	Due Date	Owner/Org
The Technical Support Services (TSS) will complete a review of STD-101 and GDE-6210 to determine necessary changes and/or training that is necessary to address the issues identified in this assessment	Completed review of procedures.	4/1/06	Michael D. Johnson, Director TSS
	Revised procedures, as applicable, and/or revised training initiated.	5/1/06	Michael D. Johnson, Director TSS

Responsible Manager: Michael D. Johnson, Director – Technical Support Services

Performance Objective WPC-5: Work Planning and Control Oversight Process

Work control documents for maintenance are prepared in accordance with STD-101, *Integrated Work Control Processes*, GDE-6210, *Maintenance Guide*, and GDE-6212, *Hazard Mitigation Guide for Integrated Work Control Process*. Operational activity control documents are prepared in accordance with MCP-3562, *Hazard Identification Analysis and Control of Operational Activities*. The team reviewed over fifty maintenance and operations work control documents to determine whether work control documents were written in a manner that lead to safe and efficient completion of work.

Improperly defined scope of work was an issue in only one work order (WO). At INTEC, the scope of work for minor maintenance WO 60004096 was not clearly defined. This WO was intended to replace twenty emergency and exit lights in CPP-666. The assessment team's observations during the pre-evolutionary briefing revealed that the planner and crafts had discussed and agreed to an undocumented change of scope that would have allowed electricians to initially attempt to repair the lights by working on the portion of the lighting that had a voltage of less than 50 volts. If this was not successful, electricians would then replace the light fixtures, which involved work on AC electrical circuitry up to 277 volts. After discussion among electricians, their foreman and the assessment team member observing the pre-evolutionary briefing, the foreman elected to obtain a WO change prior to beginning the work.

Several problems were noted pertaining to maintenance WOs being written in a clear, concise and worker friendly manner. Assessment team members evaluating construction activities generally found that the ALARA and Waste Stream section of construction WOs were difficult to follow. Additionally, three work documents at INTEC did not meet the requirements of STD-101 and GDE-6210. In one case (WO 602485), a warning statement relating to potential mercury contamination was improperly written (it contained action steps contrary to GDE-6210) and was not located immediately prior to the step in which the hazard was encountered. The requirement for fall protection in WO 60095401 was also not located in the procedure immediately before the steps where the hazard was encountered. Finally, WO 60004096 failed to be clear and concise, because the repair/replacement sequencing discussed above was not mentioned in the WO at all.

Work step sequencing appeared to be satisfactory in all but one of the work control documents reviewed. In D&D WO 603430, Note 1 states: "Steps 3 thru 6 may be worked in any order as directed by the job supervisor," however Step 3 is a "Hold Point" and must be performed prior to Step 4. There were several examples of work control documents not adequately incorporating technical and administrative requirements at INTEC and at D&D activities these were:

- Failure to document the quality level of a replacement part and to include the replacement part in the WO materials list (INTEC WO 602185),
- Conducting work on CPP-603 sludge removal during the week of 12/19/05 with a procedure that had expired on 12/04/05,
- Using a JSA for work on CPP-603 sludge removal that was revised in October 2005 without being reviewed by Fire Protection and Industrial Hygiene (which had reviewed the original JSA).

Using hazard control sets that were not customized to the exact work being performed for five WOs at D&D facilities. In these cases, WOs identified the use of boilerplate hazard identification and mitigation text, forcing end users (e.g. craft personnel) to determine applicability of hazards.

Work hazards identified in hazard analysis processes were generally found to be properly incorporated into work control documents at INTEC and RWMC and for construction activities, but not for D&D activities, where work hazards, controls, and or "Hold Points" were not identified within four WOs. For example, Review of the RTC WO 602329 identified that the hazard control set required the IH to: (1) conduct an exposure assessments during initial cutting activities, (2) evaluate work activities for repetitive motion concerns, and (3) evaluate noisy work activities and post high noise work areas as appropriate. None of these controls were incorporated into the work steps as required by GDE 6210, Section 6.8.4. It was also noted that the IH review of the work package prior to approval was not performed.

Since GDE-6210 is classified as a guide rather than as a requirements document. Planners are using it to merely for guidance in preparing work control documents, consistent with the definition of a guide in MCP-135, *Creating, Modifying, and Canceling Procedures and Other DMCS-Controlled Document*. GDE-6210 states, in part, "This guide provides detailed *direction* for the implementation of the requirements from STD-101." Classifying GDE-6210 as a guide allows work document preparation inconsistencies and degrades its impact on effecting worker safety.

Opportunity for Improvement #1

Troubleshoot and repair activities were included in a single work document. This resulted in personnel initiating repair efforts without evaluating the fact that a review of the hazards was necessary because the work they would perform was not analyzed as part of the original work document hazard set. This action has initiated an immediate corrective action to require a separation between troubleshooting and repair activities. Long term correction will be provided by incorporating this requirement into the controlling documents STD-101, *Integrated Work Control Process*, and GDE-6210. *Maintenance Guide.*

CWI Action	Deliverable	Due Date	Owner/Org
An Executive Management Directive has been issued for work documents that are prepared for Trouble Shoot and Repair activities requiring the troubleshooting work activities to be separate from the repair activities. This requirement will be incorporated into the work planning procedures at the next revision, but no later than May 2006.	Issuance of Executive Management Directive.	Completed	Michael D. Johnson, Director TSS
	Revision to STD-101 and GDE-6210 to incorporate the requirements of the EMD.	5/1/06	Michael D. Johnson, Director TSS

Responsible Manager: Michael D. Johnson, Director – Technical Support Services

Opportunity for Improvement #2

STD-101, *Integrated Work Control Process*, and GDE-6210. *Maintenance Guide* need to be reviewed for possible improvements to correct the issues identified with work document preparation. This review will provide a basis for procedure revisions to improve the quality of these controlling documents. Completion of these actions will result in improved instruction for the development of work control documents.

CWI Action	Deliverable	Due Date	Owner/Org
The Technical Support Services (TSS) will complete a review of STD-101 and GDE-6210 to determine necessary changes and/or training that is necessary to address the issues identified in this assessment	Completed review of procedures.	4/1/06	Michael D. Johnson, Director TSS
	Revised procedures, as applicable, and/or revised training initiated.	5/1/06	Michael D. Johnson, Director TSS

Responsible Manager: Michael D. Johnson, Director – Technical Support Services

Performance Objective WPC-6: Work Planning and Control Oversight

The assessment team interviewed over sixty CWI and subcontractor personnel associated with over 50 jobs and found that first line supervisors and workers are knowledgeable of their work control documents. Training of ICP personnel is recorded in a computerized system, TRAIN. Supervisors and foremen have access to TRAIN to allow them to determine whether personnel assigned to the jobs they supervise meet all relevant training requirements, and interviews revealed that supervisors were knowledgeable about how to access TRAIN to check personnel training records. Based on a sample of the persons associated with the work reviewed, most personnel met all applicable training and qualification requirements. Some examples of individuals who did not meet training and qualification requirements were identified at RWMC and at D&D activities. An electrician at RWMC had not received RWMC Electrician MTELRW0000 (8 of 13 qualifications and courses needed). At TAN, one D&D Forman directing work in the field and conducting pre-job briefings did not have the required qualifications (QLPREJOB, Performing Pre-Job Briefings and QLMNTJSF, INEEL Job Supervisor/Forman). In addition, TRAIN system records showed that one of the D&D supervisors at RTC did not have the pre-job briefing qualification (QLPREJOB). Interviews revealed that he had completed this training, but that the record of his training had been misplaced. Based on a sampling of the persons associated with the work reviewed, all personnel met medical requirements.

Work at ICP is authorized by operations authority, which reviews and authorizes all work control documents prior to commencement of work. Work is scheduled using plan of the week (POW) and plan of the day (POD) formats. At POW/POD meetings, work is evaluated at each facility and/or site to ensure that work activities of one scope do not adversely affect the safe work of another.

At one facility, foremen reported a considerable degree of frustration associated with a general lack of adherence to original/early versions of the POW and POD. Emergent work (e.g. due to equipment failures) is properly added to the POD to be authorized before working as described above, but foreman frequently must change priorities to meet deletions and additions to the schedule. Foremen report that they routinely attempt to prepare well in advance for jobs when they appear on POW/POD. Such preparations include work package review, identification and acquisition of replacement parts and materials and interfaces with operations to ensure systems and equipment are in a condition ready to work. When schedule changes occur, early preparations for deleted jobs are put on hold and hurried preparations for added jobs begins in order to ensure crafts are fully utilized. While foremen report they are not beginning work in unsafe conditions, the impact of frequent schedule changes is increased risk from more error-likely situations. That facility's maintenance management is aware of this problem, tracks adherence to POW schedules and continues to attempt to work this issue. Lack of rigorous adherence to POW/POD schedules increases frustration, impacts craft and labor effort and increases error-likely situations.

Even though the assessment team observed effective pre-evolutionary briefings took place in nearly all cases, the RWMC Site Area Director indicated that he is not fully satisfied with the present execution of this process, noting that management is presently working with their staff to upgrade the presentation mode of associated briefings. At INTEC, a worker performing work on 12/20/05 under INTEC WO 602425 did not receive the required pre-job briefing, and the pre-job briefing form for INTEC WO 602425 was not properly filled out by the foreman who performed the briefing on 12/14/05. In addition, at a TAN D&D activity, completed pre job briefing forms for WO 600413 had some missing pages and missing information.

Adherence to WO and operating procedures needs improvement. This condition was particularly disappointing, since ICP had been in a work stand down due to a series of recent events and occurrences. During the stand down, ICP management emphasized (among other things) the requirement for all workers to follow written instructions or to stop work if unexpected conditions arose and obtain a change to work documents. Several examples of procedural noncompliance observed across ICP as follows:

- An INTEC Utility Operator and Fuel Oil Subcontractor ı not follow TPR-7194, Fuel Oil System, as written to address the additional alignments needed by the Truck Driver to pport continued pumping from tanker sections. This procedure is performed up to several times each week during the co weather, but the need to stop and revise the procedure to allow the actions taken had not been identified.
- At RWMC, Steps 3, 4, 5 on the data sheet for procedure TRE-30 were not initialed or dated as required on the form. Although the data had been taken, the performer did not complete the form. This work package was signed off as complete by management.
- The TAN primary authorized employee (PAE) documented a correctly completed LOTO for TAN Area Firewater Pump FP-P-4 in the wrong place in the work package, leaving the step for the LOTO Hold Point in W.O. 603004 blank. Subsequently, crafts started work even though the PAE had not signed this Hold Point.

- Two RWMC employees keyed up their radio (e.g. transmitted) within an exclusion zone, contrary to the precaution in TPR-7417 that prohibited radio transmission in the marked exclusion area.
- During the conduct of RWMC procedure TPR-7417, maintenance personnel failed to wear safety glasses as required. The operator stopped work until safety glasses were worn as prescribed.
- During the conduct of RWMC procedure TPR-7417 an operator reactivated a drain valve before making notification to management as required by step 4.2.6 of MCP 2978, *Control of Equipment and System Status* which states in part "Reposition components found out of position only upon approval from the cognizant manager/supervisor". The valve had been de-energized (unplugged) but was not re-energized and placed back into service following installation of heat tracing.

The assessment team did not observe any conditions that warranted stop work for safety reasons. During interviews, first line supervisors and workers demonstrated a good understanding of their stop work authority.

STD-101, *Integrated Work Control Process*, discusses the use of status logs with no prescribed direction as to what is desired or required, and GDE-6210, *Maintenance Guide*, describes "Work Status" place holders. In practice, there was a wide variety of methods used to document work status, including work status logs, procedure step annotations and personal logbooks. In most cases, work control documents contained adequate documentation (i.e., work status log) regarding work status. However, no construction documents included provisions for documenting work status. Two work packages for work done by CWI at RTC, WOs 603048 and 602715, had completed steps that were not properly signed off.

Lessons learned are being implemented through incorporation directly into work orders or included in the hazard controls associated with the work order, discussed during pre-job briefings, or presented during all hand briefings/safety phases. The feedback process uses more than one approach to track feedback to closure, depending on the different work order types (PM or CM), but both systems meet the requirements for incorporation of lessons learned into work orders. Planners interviewed know how to access the INL lessons learned database, and search the database for applicable lessons learned based on the scope of their work order.

One example of an incomplete work order record was identified. INTEC WO 602185 involved the repair of PCV-118, which was leaking nitric acid. (See CRAD 23.3.4) While performing the work, INTEC personnel discovered that PI-218-2 was not functioning properly. PI-218-2 was replaced under this WO using a work order change (WOC). The WOC for the PI-218-2 replacement was processed, the work completed and the package closed. The package was sent to be scanned for record retention in EDMS. Due to an oversight during the scanning process, the WOC was not scanned into EDMS.

Some crafts reported that they did not find the Lessons Learned (LL) data base to be a usable tool, due to the scarcity of LLs that appear in the LL database for their facility (RWMC). The database spans five years and has only 27 LL entries. During interviews, some ICP personnel reported that they did not find the ICARE data base to be a usable tool because they do no know how to find issue of interest. Craft personnel need training to search the ICARE system by topic.

Opportunity for Improvement #1

CWI considers the issue of procedure non compliance to be a serious item. A comprehensive cause analysis will be developed to address this issue and to identify needed actions/improvements.

CWI Action	Deliverable	Due Date	Owner/Org
The issue of procedure non compliance is a serious concern of ICP management. A comprehensive cause analysis is being developed that will identify specific actions that are necessary to correct this adverse trend.	Issuance of completed comprehensive causal analysis	Complete	William J. Johnson, COO

Responsible Manager: William J. Johnson, Chief Operating Officer

Opportunity for Improvement #2

CWI will issue a detailed corrective action plan to address the issues identified in the casual analysis described above. The completion of the actions will receive management priority.

CWI Action	Deliverable	Due Date	Owner/Org
Issue a corrective action plan to address the casual analysis for procedure non compliance which is a serious concern of ICP management	A corrective action plan will be issued to address the issues identified in the comprehensive causal analysis	2/1/06	William J. Johnson, COO
The completion of all actions in the corrective action plan to correct the adverse trend. of procedure non-compliance will receive CWI management priority.	Actions identified in the corrective action plan will be completed	5/1/06	William J. Johnson, COO

Responsible Manager: William J. Johnson, Chief Operating Officer

Performance Objective WPC-7: Work Planning and Control Contractor Oversight

The ICP has established procedures for the conduct of independent and self assessment activities. The Integrated Assessment Program, which is described in PDD-1064, "Integrated Assessment Program," is a comprehensive, integrated, risk-based approach for managing assessments. Integrated assessment includes activities managed under the following company requirement documents:

- MCP-9172, *Developing, Integrating, and Implementing Assessment Plans and Schedules*
- LST-202, *Company Level Required Assessments*
- GDE-203, *Planning, Scheduling, and Performing Assessments*
- PDD-124, *Assessor and Lead Assessor Training and Qualification Program*
- MCP-552, *Performing Independent Assessments*
- MCP-8, *Performing Management Assessments and Management Reviews*
- MCP-1221, *Performing Inspections and Surveillances*
- CTR-69, *Charter for the Project Evaluation Board (Revised 2/3/06, PDD-148, Project Evaluation Board)*

Other assessment programs exist, such as CTR-154, *INTEC Senior Supervisory Watch Program*, (as well as similar SSW programs at other ICP facilities) and CTR-175, *INTEC Management Observation Program* (MOP), which is unique to INTEC.

Taken together, a system is therefore in place to provide a means of monitoring and evaluating all work performed, including work performed by subcontractors. Implementation of this system, however, is not consistent across the ICP. Although assessments are being performed, including of subcontractors, the evidence suggests a need to pursue a more effective implementation of the existing program. This is demonstrated by:

- The lack of or limited scope of management assessments performed at the project level.
- Limited management observations and senior supervisory watches at RWMC.
- The lack of comprehensive functional area assessments for many areas.
- The lack of comprehensive assessments at the project level.
- The focus of many assessments on administrative reviews instead of operational reviews.
- Identified problems (not ICARE issues) not having corrective actions documented.

A schedule exists for ICP assessments as the ICP Integrated Assessment Schedule database. Management assessments and independent assessments of the ISMS program are required to be performed in LST-202, as are surveillances of work in progress. Conformance to this schedule on an ICP-wide basis was not examined.

Line managers periodically perform surveillances, and these surveillances include the observations of, pre-evolution briefings and work performed, but there did not appear to be strong evidence that observations of job walk downs and JHA walk downs/meetings was included in the scope of these surveillances. For example, the assessment team found that at D&D activities, line management assessments did not assess the full spectrum of the work control process. In addition, while the scope of MOP observations at INTEC and SSW observations are particularly focused on work in progress as well as operational preparations for work, they are not directed toward the work package planning process.

The team reviewed completed LST-202 surveillances and the INTEC Management Observation Program Observed Evolution forms / Work Activities and other documents. While the above mentioned oversight programs and activities were valuable and included many criteria important to work control, none of these programs included reviews of completed work orders within the scope of their review criteria. Furthermore, at INTEC and D&D activities, the scope of the completed surveillances and observations that the team reviewed did not include approved work orders.

The primary means of line management oversight of in-development work control documents was line manager review and approval through the implementation of STD-101, *Integrated Work Control Process*. These reviews and approvals are performed by maintenance managers, general foreman (e.g. construction), and maintenance supervisors for in-development work orders. Line managers reviewed approved work orders during Senior Supervisory Watch work activities. There are no scheduled or planned assessments or surveillances of active or in-development work control documents by line managers in existing INTEC oversight programs.

Trending is tracked and reported monthly in accordance with the Safety Performance Objectives, Measures, and Commitments (SPOMC). Also regarding trending, the results of work control oversight activities, the 2005 ICP ISMS Annual Evaluation Report found that:

- Assessments are being scheduled and managed in at least three databases, making it difficult to coordinate planned assessments and to analyze issues for trends
- Not all required areas are performing assessments to support MCP-1175, *Analyzing ESH&QA Performance*. These assessments provide quarterly analysis of ISMS integrity and ESH&QA performance. Area analysis is needed to identify possible trend and recurring issues.

Opportunity for Improvement #1

To improve the quality and quantity of self-assessments and to increase management involvement in the self-assessment program the program will be critically evaluated and needed changes that provide improved participation while manitaing program quality will be implemented.

CWI Action	Deliverable	Due Date	Owner/Org
A revised self assessment program structure will be developed by a selected team of ICP managers who have an extensive background in self assessment program performance. This program will be presented to and approved by the ESRB. Upon approval by the ESRB ICP procedures will be revised, where necessary to implement the revised program.	Presentation to ESRB of revised self assessment program.	2/25/06	Michael D. Johnson, Director, TSS
	Implementation of revised procedures following ESRB approval.	3/10/06	Michael D. Johnson, Director, TSS

Responsible Manager: Michael D. Johnson, Director – Technical Support Services

Opportunity for Improvement #2

To ensure prompt implementation of self-assessment program improvements the Project Evaluation Board will conduct a comprehensive evaluation of self-assessment performance.

CWI Action	Deliverable	Due Date	Owner/Org
The Project Evaluation Board will conduct a comprehensive evaluation of self assessment performance at all ICP areas to verify proper implementation and execution of the revised assessment program structure.	Issuance of assessment report on effectiveness of revised assessment program structure..	7/1/06	Brent Rankin, ESH&Q

Responsible Manager: Jim Gregory, Manager, Project Evaluation Board.

Performance Objective F&I-1: Contractor Program Documentation

The ICP contract does not include the requirement to implement a formal "Contractor Assurance System" in accordance with DOE O 226.1, *Implementation of Department of Energy Oversight Policy*. However, the information contained in PDD-1004, *Integrated Safety Management System (ISMS)*, Revision 9 Draft, addresses the activities that are included in the INL's formal Contractor Assurance System and meets the review and approval requirements outlined in this objective. This integrated operational assurance process, with other program description documents, management control procedures, and standards, also includes assessment activities, other structured operational awareness activities, and the event reporting processes.

The program monitors and evaluates all work performed under the contract, including that of subcontractors. These activities occur through a variety of mechanisms. On a daily basis, the Safety Assessment Center (SAC) provides for senior management discussion on the previous day's work activities and safety issues throughout ICP. A monthly SAC report is issued providing a 12-month rolling trend analysis to each of eleven high focus project areas pertaining to event severity indexes (including good work practices) and ISMS core function breakdowns, in addition to a listing of the issues reported regarding the project area for the previous month. In addition, a monthly Safety Performance Objectives, Measures and Commitments (SPOMC) dashboard report is issued to report on current fiscal year status of operational issues compared against ICP goals.

On a quarterly basis, the Safety Performance Objectives, Measures, and Commitments (SPOMC) documents progress pertaining to the DOE approved performance tracking data points. On an annual basis, the ISMS Annual Evaluation and SPOMC review provide even further insight to current status and performance trending by both the Contractor and subcontractors. The company PDD-1061, *Integrated Assessment Program* is in place, and is supplemented by PDD-1005, *Line Management and Operations Manual*. Schedules are in place for FY 2006 to support required assessments and surveillances.

While the processes for the various assessments and other structured operational awareness activities are outlined in their respective program documents, the quantity of documents potentially governing a single assessment activity is excessive. Each step from scheduling the assessment to planning, investigating, and reporting, with capillary documents for each type of assessment and resultant outcomes, has its own governing document. The quantity of requirements and in some cases unnecessary rigor spread amongst the number of requirement documents causes inconsistent performance and/or unintentional, non-compliant performance.

Implementation of the self-assessment program is not consistent or adequately effective across the ICP. The program is in place to provide a means of monitoring and evaluating work and assessments being performed, including oversight of subcontractors. However, evidence shows a need to pursue a more effective/efficient implementation of the self-assessment program. This is demonstrated by:

- The lack of or limited scope of management assessments performed at the project level.
- Limited management observations and senior supervisory watches at RWMC.

- The lack of comprehensive functional area assessments for many areas.
- The lack of comprehensive assessments at the project level.
- The focus of many assessments is on administrative reviews instead of operational reviews.
- Identified problems not having corrective actions documented that are not sufficiently serious to warrant tracking in the ICARE system

All products of the program are documented and available to DOE line management. Some of these documents, such as the PDD-1004, ISMS Annual Evaluation, and SPOMC Reports are included in the contract performance evaluation.

The Contractor has established sufficient processes for measuring the effectiveness of the program however; the implementation of the program across ICP is inconsistent and cumbersome.

The requirements and process for establishing and implementing the appropriate training and experience requirements for assurance personnel are outlined in company program documents and reinforced in implementation of PDD-1004.

Opportunity for Improvement #1

To improve the quality and quantity of self-assessments and to increase management involvement in the self-assessment program the program will be critically evaluated and needed changes that provide improved participation while manitaing program quality will be implemented.

CWI Action	Deliverable	Due Date	Owner/Org
A revised self assessment program structure will be developed by a selected team of ICP managers who have an extensive background in self assessment program performance. This program will be presented to and approved by the ESRB. Upon approval by the ESRB ICP procedures will be revised, where necessary to implement the revised program.	Presentation to ESRB of revised self assessment program.	2/25/06	Michael D. Johnson, Director, TSS
	Implementation of revised procedures following ESRB approval.	3/10/06	Michael D. Johnson, Director, TSS

Responsible Manager: Michael D. Johnson, Director – Technical Support Services

Opportunity for Improvement #2

To ensure prompt implementation of self-assessment program improvements the Project Evaluation Board will conduct a comprehensive evaluation of self-assessment performance.

CWI Action	Deliverable	Due Date	Owner/Org
The Project Evaluation Board will conduct a comprehensive evaluation of self assessment performance at all ICP areas to verify proper implementation and execution of the revised assessment program structure.	Issuance of assessment report on effectiveness of revised assessment program structure..	7/1/06	Brent Rankin, ESH&Q

Responsible Manager: Jim Gregory, Manager - Project Evaluation Board.

Performance Objective F&I-2.1: Assessments and Performance Indicators

The Integrated Assessment Program, based on PDD-1064, *Integrated Assessment Program*, LST-202, *Company-Level Required Assessments*, and inputs from Functional Area Managers and Subject Matter Experts, establishes the assessment program for functional areas, programs, facilities, and organizational elements. The scope and frequency of these assessments is determined based upon regulatory requirements documents in conjunction with an analysis of risk when applicable. The level of rigor is outlined in the implementing documents governing the performance of the different types of assessments, i.e. Management vs. Independent. As discussed previously in Objective F&I-1, this implementation is cumbersome and inconsistently implemented in the field. As a result, this objective is evaluated as only partially met.

The Project Evaluation Board (PEB) is established at ICP to provide the function of independent internal assessments. Assessments are identified, planned and performed by this group which has the authority and independence from line management to support unbiased evaluations. To date the PEB assessments have been focused on specific problems or issues instead of comprehensive project assessments. The 2006 PEB schedule has included these project assessments.

The SPOMC (discussed previously) is approved by line management and DOE. It provides a measure to indicate how work is being performed. This includes the performance objectives and the expectations set by senior management. Other performance monitoring programs include the SAC and Executive Safety Review Board (ESRB) at the senior management level with other process designed to capture and gather issues at the project and supervisor's level such as the Hazard Review Board (HRB). ICP management policy continuously reinforces the ISMS process of Feedback and Improvement to all personnel on Site. This provides multiple avenues of input by which issues, good or bad, are reported to the necessary programs for analysis and trending.

The SAC provides the method of sharing good practices and lessons learned on a daily basis to and from all line managers. The information discussed in these daily meetings is tracked and trended independently and provided to each project area on a monthly basis. In addition, this information is used in the occurrence reporting process and program quarterly evaluation in the review of positive or negative trends. The ESRB also causes issue tracking and trending to be evaluated for issues that are of concern and that may affect safety, performance objectives, or goals. The SPOMC, Monthly ICP Injury/Illness Report, and the Monthly Dashboard data provide the information necessary to identify current status relative to goals and objectives agreed to by CWI and DOE.

Opportunity for Improvement #1

To ensure the Project Evaluation Board has appropriate resources to accomplish scheduled assessments for CY 2006 the existing schedule will be upgraded to provide resource loading.

CWI Action	Deliverable	Due Date	Owner/Org
The Project Evaluation Board (PEB) has established a schedule for CY 2006 that includes project assessments as well as program assessments. To improve the PEB capabilities to perform project assessments on an ongoing basis a review will be performed regarding PEB resources, scope and frequency of assessments.	Development of resource loaded annual schedule	3/30/06	Brent Rankin, ESH&Q

Responsible Manager: Jim Gregory, Manager - Project Evaluation Board.

Opportunity for Improvement #2

To ensure proper development of self-assessment schedules actions will be taken to update the current assessment requirements document. In addition, to provide for improved self-assessment schedule development in the future, annual updates to the assessment requirements document will be issued well in advance of the FY schedule development needs.

CWI Action	Deliverable	Due Date	Owner/Org
As required by MCP-9172, *Developing, Integrating, and Implementing Assessment Plans and Schedules*, a revision to LST-202 will be issued. In addition future revisions to LST-202 will be issued in July of each year to support the development of FY assessment schedules.	Revision of LST-202	2/25/06	Brent Rankin, ESH&Q
	Issue LST-202 Update for FY 07	7/30/06	Brent Rankin, ESH&Q

Responsible Manager: Craig Kvamme, Manager – Performance Assurance

Performance Objective F&I-2.2: Operating Experience

Formal processes are in place to identify applicable lessons learned from external and internal sources. The processes utilize communication and distribution methods such as the site intranet and e-mail systems, discussion in the SAC, the Lessons Learned Web Site and presentation at job briefings.

Lessons learned are obtained from and provided to external sources such as the DOE Lessons Learned Web and a corporate web for use and sharing at other sites.

ICP has instituted the Voluntary Protection Program (VPP), and its Employee Safety Teams (EST) and Changing Our Behavior Reduces Accidents (COBRA) program that provide the mechanisms necessary to solicit feedback and suggestions from the workforce on any topic for which a need is felt.

No opportunities for improvement noted.

Performance Objective F&I-2.3: Event Reporting

Formal processes are in place to investigate, report, and respond to operational events, incidents and occupational injuries and illnesses. MCP-190, *Event Investigation and Occurrence Reporting*, contains the instructions for documenting and reporting occurrences. In conjunction with reporting these events corrective actions are documented and tracked as specified in MCP-598, *Corrective Action System*. Cause analysis is performed in accordance with a formal process as specified in STD-1113, *Cause Analysis and Corrective Action Development*, by qualified personnel as specified in PDD-1114, *Cause Analyst Training and Qualification Program*.

The SAC as described above provides a centralized process for timely management involvement in routine reporting, reviewing, and assigning follow-up on safety events; supports safety performance monitoring; and provides a resource for periodic safety performance summary reporting. Data is collected about events and conditions that have the potential for adversely affecting safe operations now and in the future, as well as good practices.

The ESRB as described above is established to oversee the identification, analysis, reporting, and corrective actions of safety significant events, issues with programmatic implications, and other issues as determined necessary. The ESRB also causes issue tracking and trending to be evaluated for issues that are of concern and that may affect safety, performance objectives, or goals. The SPOMC, Monthly ICP Injury/Illness Report, and the Monthly Dashboard data provide the information necessary to identify current status relative to goals and objectives agreed to by CWI and DOE.

Lessons learned are obtained from and provided to external sources such as the DOE Lessons Learned Web and a corporate web for use and sharing at other sites consistent with the requirements of MCP-192, *Processing Lessons Learned and External Operating Experience.*

No opportunities for improvement noted.

Performance Objective F&I-2.4: Issues Management

The ICP utilizes several programs that comprise satisfaction of this objective. ICARE system is the formal process that captures not only deficiencies, but other noncompliance issues, program commitments and their respective data for tracking. The ORPS reporting system is annotated to use this program for corrective action tracking as well. Event cause analysis and corrective actions are also governed by their respective program documents.

With regard to corrective action plans, they are typically limited in scope and without regard to existing action items in place for other process improvements. Some are developed without regards to similar or cross-cutting effects of other corrective action plans. This method tends to overload the system with duplicative or similar action items being resolved by different groups not knowing of the others' efforts, delaying final achievement of completion.

MCP-598, *The Issues Management Program and Corrective Action System*, MCP-190, *Event Investigation and Occurrence Reporting*, and MCP-553, *Stop Work Authority*, together provide the basic process mechanisms to identify, take action, and resolve issues.

MCP-1269, *Establishing, Monitoring, and Reporting ESH&QA Performance Objectives, Goals, And Measures*, MCP-1175, *Analyzing ESH&QA Performance*, and MCP-598 program documents require review and analysis of deficiencies. Line management is provided the tools and resources to perform this task. Continued management attention is needed to ensure these processes are effective and rigorous.

Communication of issues up the management chain does occur. While the lines of communication have gone through transition pains, management is attentive to the needs of the program.

Feedback programs are integrated and analyzed to identify trends, issues, and potential repeat occurrences. This analysis is performed through several methods. These processes need continued attention to ensure identification of potential significant problems before they become events.

ICP program document PDD-1114, *Cause Analyst Training and Qualification Program*, requires the training of employees on corrective action development and causal analysis techniques. Formal cause analysis and corrective action development process are implemented in STD-1113, *Cause Analysis and Corrective Action Development.*

No opportunities for improvement noted.

SECTION V – CWI WP&C and F&I Good Practices

Good Practice(s)	Site Point of Contact
The process outlined within MCP-3562, *Hazard Identification Analysis and Control of Operational Activities*, is a user friendly concisely developed procedure. The design of this MCP enhances the ability of any individual given the responsibility to generate a new, or modify an existing Operational document. The Hazard Screening Checklist (Appendix B) informs the user of the minimum set of subject matter experts required to participate with the development or modification of an Operational work control document. This approach demonstrates Line Management's direct involvement with identification of specific individuals that shall assist with the work control process.	James E. Kaylor Department Manager- INTEC, 526-3483
ICP allows use of a "step back" for any person to stop a job without declaring a "stop work". Step backs permit a "no fault" means for personnel to pause to consider and discuss situations to improve safety without completely stopping a job. The practice appears to have wide acceptance and a beneficial impact on safety thus far.	Bill Grace, Director Industrial Safety, 208-526-1163
The implementation of the Management Observation Program for INTEC has provided improved management involvement in the self assessment program. The program, as intended, meets much of the intent of this review as well as other worthwhile management goals.	William J. Johnson COO, 208-526-7148

Good Practice(s)	Site Point of Contact
The Safety Assessment Center (SAC) provides a centralized process for timely management involvement in routine reporting, reviewing, and assigning follow-up on safety events; supports safety performance monitoring; and provides a resource for periodic safety performance summary reporting. Data is collected about events and conditions that have the potential for adversely affecting safe operations now and in the future, as well as good practices.	Matthew Steffa Manager – Safety Assessment Center, 208-526-7452
The Executive Safety Review Board (ESRB) is established to oversee the identification, analysis, reporting, and corrective actions of safety significant events, issues with programmatic implications, and other issues as determined necessary.	Bruce Schultz Director – ESH&Q Support Programs, 208-526-7439