Advanced Technologies and Laboratories International, Inc. Analytical Services Production Contractor

Report from the DOE
Voluntary Protection Program
Onsite Review
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U.S. Department of Energy
Office of Health, Safety and Security
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Foreword

The U.S. Department of Energy (DOE) recognizes that true excellence can be encouraged and guided, but not standardized. For this reason, on January 26, 1994, the Department initiated the DOE Voluntary Protection Program (DOE-VPP) to encourage and recognize excellence in occupational safety and health protection. The DOE-VPP closely parallels the Occupational Safety and Health Administration (OSHA) Voluntary Protection Program (VPP), which was established by OSHA in 1982 and has demonstrated that cooperative action among government, industry, and labor can achieve excellence in worker health and safety.

The DOE-VPP outlines areas where DOE contractors and subcontractors can comply with DOE orders and OSHA standards while also "stretching for excellence." DOE-VPP emphasizes systematic and creative approaches involving cooperative efforts of everyone in the contractor or subcontractor work force at DOE sites, including contractor managers and workers.

Requirements for DOE-VPP participation are based on comprehensive management systems, with employees actively involved in assessing, preventing, and controlling the potential health and safety hazards at their sites. DOE-VPP is designed to apply to all contractors in the DOE complex and encompasses production facilities, research and development operations, and various subcontractors and support organizations.

DOE contractors are not required to apply for participation in the DOE-VPP. In keeping with OSHA's VPP philosophy, participation is strictly voluntary. Additionally, participants may withdraw from the program at any time.

DOE-VPP consists of three programs, which are based on and similar to those in OSHA's VPP. These programs are Star, Merit, and Demonstration. The Star program is the core of DOE-VPP, and its achievement indicates truly outstanding protectors of employee safety and health. The Merit program is a steppingstone for contractors and subcontractors that have good safety and health programs, but need time and DOE guidance to achieve Star status. The Demonstration program is expected to be used rarely; it exists to allow DOE to recognize achievements in unusual situations about which DOE needs to learn more before determining approval requirements for the Star program.

By approving an applicant for participation in DOE-VPP, DOE recognizes that the applicant is meeting, at a minimum, the basic elements of ongoing, systematic protection of employees at the site. The symbols of this recognition include DOE-provided certificates of approval and the right to fly the VPP flags (e.g., VPP Star flag for sites with Star status). The participant may also choose to use the DOE-VPP logo on letterhead or on award items for employee incentive programs. Further, each approved site will have a designated DOE staff person to handle information and assistance requests from DOE contractors, and DOE will work cooperatively with the contractors to resolve health and safety problems.

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ABBREVIATIONS AND ACRONYMS

AED	Automated External Defibrillator
ALARA	As Low As Reasonably Achievable
AMH	Advanced Med Hanford
ASPC	Analytical Services Production Contractor
ATL	Advanced Technologies and Laboratories International, Inc.
ATS	Analytical Technical Services
CAMPATS	Corrective Actions Management/Price-Anderson Amendment Act Tracking System
CPR	Cardiopulmonary Resuscitation
DART	Days Away, Restricted, or Transferred
DOE	U.S. Department of Energy
DOE-VPP	U.S. Department of Energy Voluntary Protection Program
EJTA	Employee Job Task Analysis
FEHIC	Facility Emergency Hazard Identification Checklist
GET	General Employee Training
HAMTC	Hanford Atomic Metal Trades Council
HGET	Hanford General Employee Training
HSS	Office of Health, Safety and Security
IH	Industrial Hygiene
ISMS	Integrated Environmental, Safety, and Health Management System
ITEM	Integrated Training Electronic Matrix
ORP	Office of River Protection
OSHA	Occupational Safety and Health Administration
PPE	Personal Protective Equipment
SAF*T	Safety Awareness Focus Team
SIP	Safety Improvement Plan
TFC	Tank Farm Contractor
VPP	Voluntary Protection Program
WHA	Work Hazard Analysis

EXECUTIVE SUMMARY

Advanced Technologies and Laboratories International, Inc. (ATL) is the Analytical Services Production Contractor (ASPC) for the 222-S Laboratory located at the Hanford Site. ATL receives, processes, characterizes, archives, and disposes of a variety of samples related to the Hanford Tank Farm cleanup activities, as well as other activities at the Hanford Site. ATL is responsible for using installed analytical equipment, but any changes to the facility, installation of new equipment, and operation of facility equipment is conducted by CH2M HILL Hanford Group, Inc. (CH2M HILL).

Certification of Star status in the U.S. Department of Energy (DOE) Voluntary Protection Program (VPP) requires an onsite review by the DOE Office of Health, Safety and Security (HSS) DOE-VPP team (Team). The Team conducted its review during January 7-17, 2008 to determine whether ATL is performing at a level deserving DOE-VPP Star recognition. The purpose of this report is to document the results of the Team review and provide the Chief Health, Safety and Security Officer with the necessary information to make the final decision about ATL's application for DOE-VPP Star status.

Based on discussions and interviews with nearly all of the 70 workers, supervisors, and managers, as well as extensive observation of work activities, inspection of the facility within the project scope, and review of records, the Team determined that ATL has established and maintained a strong safety culture since being awarded the ASPC contract in 2005. Managers and employees work as a team and equally own and participate in the safety and health program. Procedures and processes are mature and leverage not only internal expertise and capabilities, but also that of the facility management and other Hanford Site contractors. Employees and managers demonstrated a fierce commitment to further pursuit of safety excellence and continuous improvement.

Having observed first hand that ATL has fully met all VPP tenet requirements, the Team recommends that ATL's application into the VPP program be approved, with Star rating assigned.

TABLE 1
OPPORTUNITIES FOR IMPROVEMENT

Opportunity for Improvement	Page
Opportunity for Improvement: Ensure the analytical basis for hazard control selection is adequately captured in the work plan development process and subsequently retrievable in future tasks which may be similar (e.g. volume of chemicals present in hoods or piping, results of industrial hygiene monitoring conducted during the task, etc.).	9

I. INTRODUCTION

The U.S. Department of Energy (DOE) Voluntary Protection Program (VPP) onsite review of Advanced Technologies and Laboratories International, Inc. (ATL) at the Hanford Site was conducted January 7-17, 2008. ATL is the prime contractor for the 222-S Laboratory Analytical Services and Testing Contract. ATL was awarded this small business contract in 2005. Most of the workforce that was subsequently transferred to ATL had previously been part of the DOE-VPP under CH2M HILL Hanford Group, Inc. (CH2M HILL). Due to the significant change in management structure, DOE decided that ATL would have to apply separately to the DOE-VPP. DOE's Office of River Protection (ORP) provides oversight of operations at the 222-S Laboratory. ATL submitted their DOE-VPP application in 2007, and it was approved by ORP in December 2007.

ATL employs approximately 70 people that perform work in the 222-S Laboratory. The facility continues to be maintained by the Tank Farm Contractor (TFC), CH2M HILL. ATL is responsible for using installed analytical equipment, but any changes to the facility, installation of new equipment, and operation of facility equipment is conducted by CH2M HILL. As the Analytical Services Production Contractor (ASPC), ATL receives, processes, characterizes, archives, and disposes of a variety of samples related to the Hanford Tank Farm cleanup activities, as well as other activities at the Hanford Site.

Recognition in the DOE-VPP requires an onsite review by the Office of Health, Safety and Security (HSS) DOE-VPP Team (Team) to determine whether the applicant is performing at a level deserving DOE-VPP Star recognition. The Team evaluated ATL safety programs against the provisions of the DOE-VPP. During the site visit, the Team observed activities, evaluated relevant safety documents and procedures, and conducted interviews to assess the strength and effectiveness of ATL health and safety programs.

The Team had contact with nearly all the employees, managers, and supervisors, either formally or during observation of field activities. Hazards associated with ATL activities included potential radiological contamination, potential chemical exposure associated with various activities, electrical hazards, ergonomic hazards associated with fume hoods and gloveboxes, and a multitude of other standard industrial hazards. Activities observed included plan-of-the-day meetings, pre-job briefings, sample analysis, and waste handling.

II. INJURY INCIDENCE/LOST WORKDAYS CASE RATE

The Team conducted a review of the Occupational Safety and Health Administration (OSHA) 300 logs. The tables below summarize the OSHA reportable data both for ATL employees and for subcontractors supporting ATL.

Advanced Technologies and Laboratories International, Inc.
INJURY INCIDENCE / LOST WORKDAYS CASE RATE

Injury Incidence / Lost Workdays Case Rate (ATL employees only)					
Calendar Year	Hours Worked	Total Recordable Cases	Total Recordable Case Incidence Rate	DART* Cases	DART* Case Rate
2005	59,613	2	6.7	0	-
2006	97,231	0	-	1	2.1
2007	100,415	1	2	0	-
3-Year Total	257,259		2.3		0.78
Injury Incidence / Lost Workdays Case Rate (subcontractors only)					
Calendar Year	Hours Worked	Total Recordable Cases	Total Recordable Case Incidence Rate	DART* Cases	DART* Case Rate
2005	339	0	-	0	-
2006	3638	0	-	0	-
2007	1433	0	-	0	-
3-Year Total	5,410				
Injury Incidence / Lost Workdays Case Rate (including subcontractors)					
Calendar Year	Hours Worked	Total Recordable Cases	Total Recordable Case Incidence Rate	DART* Cases	DART* Case Rate
2005	60,051	2	6.66	0	
2006	104,758	0	-	1	1.91
2007	113,077	1	1.77	0	
3-Year Total	277,887		2.16 (avg)		0.63 (avg)
Bureau of Labor Statistics (BLS-2006) average for NAICS Code # 56291 Remediation Services			Total cases 4.4 3yr avg.		Total cases 2.6 3yr avg.

*Days Away, Restricted, or Transferred

Total Recordable Case Incidence Rate including subcontractors: 2.16
Lost or Restricted Workday Case Incidence Rate including subcontractors: 0.63

Conclusion

ATL injury rates are below the averages for the comparable industry and meet the criteria for participation in the DOE-VPP at the Star level.

III. MANAGEMENT LEADERSHIP

Management leadership is a key element of obtaining and sustaining an effective safety culture. The contractor must demonstrate senior-level management commitment to occupational safety and health in general, and to meeting the requirements of the DOE-VPP. Management systems for comprehensive planning must address health and safety requirements and initiatives. As with any other management system, authority and responsibility for employee health and safety must be integrated with the management system of the organization and must involve employees at all levels of the organization. Elements of that management system must include clearly communicated policies and goals, clear definition and appropriate assignment of responsibility and authority, adequate resources, and accountability for both managers and workers. Finally, managers must be visible, accessible, and credible to employees.

A strong commitment to safety excellence and continuous improvement is evident throughout the organization from the President of the company to the newest member of the workforce. ATL is in the unique position of providing analytical service at the 222-S Laboratory, a facility maintained and operated by another contractor. As the ASPC, ATL assumed the role formerly conducted by the other DOE contractors it now supports. This allows the company to leverage the strong safety culture that many of its employees were responsible for establishing at the Hanford Site before ATL was awarded the ASPC contract. Moreover, because of longstanding relationships between ATL employees and the facility contractor (Analytical Technical Services or ATS) employees, a community atmosphere endures. Additionally, the experience level of the analytical staff provides a highly professional and safe working environment. The employees at ATL are involved in the pursuit of safety excellence because managers empower them, commit the resources, and act on employee input as a matter of priority. A strong incentives and award program is in place that encourages participation at all levels.

Exempt and non-exempt employees are held accountable for safety and health performance through the employee performance review process. The Employee Performance Appraisal form identifies safe work practices as the first criteria in the process. In order to ensure that employees have a safe, productive, and desirable working environment, the company has established and enforces acceptable work behaviors, standards, and practices. In the event that violations of these acceptable work behaviors, standards, or practices occur, the company has established a disciplinary process that ensures a thorough evaluation of the facts and a consistent application of the principles of progressive discipline if disciplinary action is warranted.

ASPC has defined interfaces with three Hanford Site prime contractors that contribute to the protection of worker safety and health: (1) CH2M HILL, (2) Fluor Hanford, and (3) Advanced Med Hanford (AMH). Integration of safety and health is required with CH2M HILL and AMH. Work scope is controlled under memoranda of understanding or agreement, or through ATL-MP-1016, ***Interface Control Document between ATL and CH2M HILL*** (Interface Control Documents). These interfaces are maintained through clearly defined roles and responsibilities, implementation of established programs and procedures, and periodic self-assessments of the interface activities.

Since assumption of the ASPC contract in 2005, senior ATL managers recognized the need for and allocated sufficient resources to establish and support a viable safety and health program. Additional resources are available, through contractual agreements with the TFC, to augment on a case by case basis.

Safety is definitely an all-hands commitment and responsibility at the 222-S Laboratory. Every ATL employee has the responsibility and the expectation to make safety not just a priority but an integral part of their daily work activities. The ASPC Manager is ultimately responsible for the safety and health of ATL personnel; however, the responsibility and authority of the ATL safety and health program is shared throughout the organization. Line managers are responsible for all occupational aspects of employee safety and health. The company President has clearly defined and communicated to all managers the expectation that they be a leader in safety, health, and environmental protection performance. Performance appraisals include these roles and responsibilities as critical elements.

Work observations and interviews revealed the depth of active caring amongst managers and employees alike at ATL. Senior leaders have empowered the workers through their example such that the program is owned by the employees. Individuals have full authority to stop work and initiate immediate corrective actions or control. In addition, each worker has the right and responsibility to report unsafe conditions/practices. ATL employees take pride in their participation in VPP activities, safety committees, safety meetings, and task teams. Through shared values and a belief that all accidents are preventable, employees accept personal responsibility for working safely.

ATL on occasion procures the services of additional personnel. The additional personnel may be used as staff augmentation or on short-term projects. Such services are procured by means of a contract developed by ATL management. The contract ensures that personnel who work in the 222-S facilities perform all work in accordance with ATL safety and health policies, programs, and procedures. Sub-contractors expected to access the site for more than 45 days are required to attend Hanford General Employee Training (HGET). This training provides a briefing on various topics including security, safety, and emergency preparedness. Once at the 222-S Laboratory, new sub-contractor employees attend facility specific safety training such as the Facility Emergency Hazard Identification Checklist (FEHIC) training. FEHIC covers accountability expectations, conduct of operations, procedure compliance, safety responsibilities, emergency information, staging area location, radiological information, and other pertinent safety information. Short-term (less than 45 days) sub-contractors and vendors are required to take a computer-based learning module on site safety and security (General Employee Training or GET) or may be escorted by a qualified ATL employee.

Various means, listed below, are used to notify ATL employees about safety-related information. Interviews confirmed that these communication methods are effective:

- Safety Awareness Focus Team (SAF*T) meetings (The SAF*T is the primary ATL safety council, See Section IV, Employee Involvement);
- VPP Champions Committee meetings;
- VPP newsletter;
- All employee meetings;
- Safety bulletin boards;
- ATL worker safety and health program;
- Integrated Safety Management System (ISMS); and
- VPP via the training presentation ***ATL Health and Safety Program*** (Course #172033).

The ASPC Manager, through individual staff members and bargaining unit employees, supports the evaluation of the safety and health program. ATL maintains a high priority level on safety and health by providing continuous improvement. Several methods are used to evaluate and provide feedback on project and activity-level performance. These mechanisms include, but are not limited to, results from the quarterly performance analysis report, event investigations, lessons learned, as low as reasonably achievable (ALARA) reviews, SAF*T, emergency preparedness drills, corrective action management trend analysis, the occurrence reporting process, and the annual VPP self-assessment.

Annual evaluations of the ATL safety and health program are scheduled and performed as part of the management assessment process. The results are evaluated, documented, and incorporated into the Safety Improvement Plan (SIP) by the SAF*T members and management, in conjunction with the VPP Champion Committee. The SIP initiatives are entered into Corrective Actions Management/Price-Anderson Amendment Act Tracking System (CAMPATS) for tracking. Status on the SIP is reported quarterly at the SAF*T meeting and communicated to the workforce periodically via all-hands meetings, the VPP newsletter, and on the Health and Safety web page.

ATL provides and maintains a safe and healthy working environment and a culture in which all employees follow safe work practices. Senior leaders have created a collaborative work environment between management and the workforce. Managers demonstrate commitment to safety and health through active participation in safety and health committees (SAF*T, VPP Champions Committee, 222-S Chemical Hygiene Committee, and 222-S ALARA Committee, etc.); by maintaining an open-door policy; through visible day-to-day support of safety in field activities; and by providing sufficient resources to maintain a safe and healthy workplace free from hazards. Managers and employees participate jointly in the facility safety and health inspections, training, work planning, and problem-solving efforts. The degree of leadership commitment and level of ownership over their own safety has empowered ATL employees to raise safety concerns without fear of reprisal and to offer continuous improvement suggestions for ensuring a safe work environment. The company's safety slogan, "At ATL, Safety is our Value," is more than a bumper sticker. Managers and employees practice it daily.

At the company level, safety and health planning is incorporated into the annual budget process. Based upon the work scope for the upcoming fiscal year, safety and health resources (including safety professionals, industrial hygiene technicians, radiological control personnel, etc.) are incorporated into departmental financial planning.

Conclusion

There is a robust safety culture at ATL, one of safety excellence and continuous improvement. The strong desire of the employees to make the 222-S Laboratory a safe place to work is a direct result of the successful efforts of senior ATL managers to both empower their workforce to own the program, and leverage longstanding procedures and relationships with the facility management and other Hanford Site contractors. ATL meets all of the requirements of the Management Leadership tenet of the DOE-VPP.

IV. EMPLOYEE INVOLVEMENT

Employees at all levels must continue to be involved in the structure and operation of the safety and health program and in decisions that affect employee health and safety. In addition to employee participation, individuals must exercise their right to notify appropriate managers of hazardous conditions and practices. Field observations and interviews indicated that ATL workers remain committed to their personal safety as well as the safety of their coworkers and laboratory visitors.

The Team observed that employees are strongly involved in the ATL safety and health program. Programs are in place to notify employees of new job hazards and procedural changes. Employees indicated that they have the opportunity to provide feedback regarding procedural changes and may be required to take additional training upon final approval.

The Team received positive feedback from employees regarding their involvement in the safety and health program. Employees indicated they feel responsible for their safety and that of their co-workers, site workers, and site visitors. The Team interviewed recent hires and employees who have been onsite for more than 20 years and all exhibited a very strong sense of safety and health ownership and responsibility. All interviewed employees were aware of the many ways management engages them in the safety and health program. Employees are fully aware of the hazards and potential hazards associated with their jobs and are adequately trained to identify, report, and in some cases mitigate potential hazards and potentially hazardous conditions. Although none of the workers contacted by the Team have had to implement their stop work authority, they all indicated that they would not hesitate to do so if warranted, and they would do so without fear of reprisal from any level of management. Employees are encouraged to recommend corrections, become involved with safety committees and associated activities, and are involved with training new co-workers in safe work practices. Employees are further engaged in the safety and health program by assisting in the development, revision, and validation of work procedures and in modeling safe work practices that maintain safety as the priority. ATL employees also participate in ATS safety awareness activities including laboratory-wide safety campaigns and the annual Hanford Expo. Employees are encouraged to participate in the facility safety inspection program.

A variety of communication efforts are used to support employee involvement. Examples of these efforts are:

- Posters;
- Health/Safety Bulletins;
- E-mail Notices (minutes from safety meetings, suggested readings, links to safety-related websites, etc.); and
- Newsletters including the ATL Employee Newsletter, All Stars, and the CH2M HILL Focus.

In addition, employees are encouraged to become involved in the Safety Committee, which is discussed later in this report. Employees are involved in the formal and informal reporting of hazards, have stop work authority, and provide input into systems and procedures for safety and health incentive programs.

The Team found employees fully engaged in both pre-job briefings and plan-of-the-day meetings, and to be comfortable discussing safety issues with their co-workers. During work observations, the Team also found ATL workers worked very closely and effectively with ATS employees, demonstrating a culture of caring and looking out for each other's safety regardless of their company affiliation.

ATL assumed control as the ASPC in May of 2005. ATL participation in safety committees was initially limited to those ATS committees (for example the ATS accident prevention council) that already existed when the contract was awarded. Separate ATL safety committees were initiated in September 2005. The SAF*T is the ATL specific, employee accident prevention council that promotes a partnership between management and the workforce to improve safety performance and reduce injury and illness rates through the application of VPP principles and the ISMS structure. The SAF*T ensures the effectiveness of safety programs by establishing goals and programs; supporting the resolution of employee safety concerns; serving as a forum to address safety concerns and issues to resolution; supporting effective communication of safety information through various means; and fostering safety awareness, compliance, and stewardship in the workforce. Activities are directed by the ATL SAF*T Charter. SAF*T members participate in monthly facility inspections that ensure the entire facility is walked down on a quarterly basis. Additionally, SAF*T members maintain a role in accident investigations that includes the review of the results of (1) all occupational injury/illness data, and accidents that result in first aids; and (2) lost work/days away, restricted, or transferred (DART)/recordable injuries. The ATL safety professional presents the results of the investigation to the committee and solicits feedback and input from the SAF*T members who in turn discusses ways to prevent recurrence. The safety committee members also provide a forum for addressing the safety issues and suggestions of the ATL workers. Worker concerns are entered into CAMPATS and tracked to completion. These reports are reviewed and discussed at each monthly SAF*T meeting.

ATL also supports other safety committees both at the lab and throughout the site. These committees provide support to the overall safety program and fulfill contractual requirements. The sub-committees also facilitate information exchange, develop common approaches where appropriate and cost effective, and provide networking to enhance functional area cooperation. The ATL sub-committees include the ATL VPP Champions Committee; Site-Wide VPP Champions Committee; 222-S Laboratory ALARA Committee; 222-S Pollution Prevention/Waste Minimization Committee; and the 222-S Chemical Hygiene Committee.

The VPP Champions Committee, a sub-committee of the SAF*T, was originally established to focus on attaining VPP Star status recognition for ATL. Current activities include performing the VPP annual self-assessments, and supporting the SAF*T in development of the SIP. Committee members include both workers and managers. Some committee members are also actively involved in the site-wide VPP Champions Committee. This committee serves as a vehicle to provide information, support, and mentoring to both assist non-VPP facilities in their pursuit to attain VPP recognition, and assist participating VPP sites in their efforts to maintain VPP Star status.

Conclusion

Employee involvement is strongly rooted and demonstrated in all aspects of the safety and health program. ATL workers are effective in addressing existing and new hazards. ATL meets all of the requirements of the Employee Involvement tenet.

V. WORKSITE ANALYSIS

Management of health and safety programs must begin with a thorough understanding of all hazards that might be encountered during the course of work, and the ability to recognize and correct new hazards. A systematic approach is required to identify and analyze all hazards encountered during the course of work, and the results of the analysis must be used in subsequent work planning efforts. Effective safety programs also integrate feedback from workers regarding additional hazards that are encountered, and include a system to ensure that new or newly recognized hazards are properly addressed. Successful worksite analysis also involves implementing preventive and/or mitigative measures during work planning to anticipate and minimize the impact of such hazards.

The work hazard analysis (WHA) process identifies hazards, controls, and, as necessary, incorporates the controls into a work document (including procedures, work plans, job tasks, etc). ATL uses a team planning approach that relies on worker involvement in conjunction with subject matter experts. ATL uses lessons learned to help workers avoid repeating the mistakes of others and to promote good work practices that improve the safety, quality, and efficiency of analytical operations; highlight a good work practice or innovative approach; and/or prevent the recurrence of an adverse event. A safety and health professional reviews, comments, and approves work documents for safety content. A hazard analysis is performed utilizing the WHA process to define the hazards and identify the controls necessary to mitigate or eliminate the hazards.

Team observations, in the laboratories and during reviews of procedures, did raise some questions regarding systematic processes used to document the specific hazard analysis pertaining to work plans, as well as the controls to which the work will be performed. Interviews with ATL employees did reveal that while the hazard analysis was performed during the procedure development, the analysis itself was not always captured in the work package for future use and review.

Opportunity for Improvement: Ensure the analytical basis for hazard control selection is adequately captured in the work plan development process and subsequently retrievable in future tasks which may be similar (e.g. volume of chemicals present in hoods or piping, results of industrial hygiene monitoring conducted during the task, etc.).

ATL's work is performed to technical laboratory procedures. Procedure validation is the process used for procedure development and includes methods to test procedure usability, correctness, and compatibility with equipment or systems. Procedure validation is required to be performed on all new procedures and those with major changes. During WHA revision or periodic reviews, the technical authority reviews all procedure changes and verifies that the documented hazards have not changed by reviewing the existing WHA. If the change does not impact the scope, safety, or waste generation process, the cognizant scientist and manager can approve the change in writing. If the change results in impacts to the scope, safety, or waste generation process, an additional review by the appropriate reviewer is required, including use of the WHA process. WHA forms are retained in the procedure history file as record material. The WHA process utilizes a laboratory-specific addendum, developed by facility workers, that incorporates the analysis and control requirements from the laboratory complex Chemical Hygiene Plan.

Validation is documented on a Procedure Validation Checklist and becomes part of the procedure history file.

The ATL Laboratory Test Planning procedure establishes a program for planning and authorizing "testing activities" that are non-routine operations of a scientific nature that (1) may have uncertain outcomes requiring modifications in operations, and special considerations that cannot be implemented by routine procedures; (2) may have special quality or day evaluations that require customer interfaces for assessment; or (3) involve one time or infrequent equipment setups and processes. Tests are planned to ensure that the activities are performed safely and cost-effectively and to ensure they meet customer objectives. Test plans may be modified during the course of the testing as long as the change does not violate the intent of the test plan. All test procedures include a documented WHA and controls. The health and safety representative reviews and approves the test as appropriate for the complexity and risk of the work to be performed.

General worksite safety and health inspections are conducted routinely, as demonstrated by plan-of-the-week and plan-of-the-day assignments. These include monthly walkdowns by facility room owners and team-based workplace safety inspections. Laboratory room monthly inspections are performed by room owners. Room owners are generally the first-line manager responsible for the processes performed within a specific area. Team-based workplace safety inspection teams consist of a team leader, a safety professional, a Hanford Atomic Metal Trades Council (HAMTC) safety representative, and a set of volunteer employees. During the assessment, team-based safety inspections were being performed. The 222-S Laboratory complex is divided into three inspection areas. One of these areas is covered each month, so that each area is inspected quarterly. Subjects covered during the inspection include the OSHA criteria for electrical cords; receptacles; ladder safety; housekeeping; storage of materials, signs and postings; fire safety and equipment; safety showers and eyewash stations, etc. Actions that must be taken as a result of these inspections are identified and handled in accordance with ATL Corrective Action Management procedures. Routine safety inspections of radioactive material areas are conducted monthly by the ATL manager. Access Control Entry System records substantiate the entry of the facility manager into radiologically controlled areas on a monthly basis. If hazards or concerns are observed during any of these inspections they are tagged and tracked for repair. Additionally, employees are encouraged to report identified problems to their manager or first-line supervisor for tagging and repair.

ATL performs ongoing analyses of events in accordance with Occurrence Reporting and Processing of Operations Information procedures. Reports are based on analysis of both reportable and non-reportable events. The intent of the analysis is to support decision making for long-term continued improvement in ATL laboratory operations and to identify trends. Safety and health-related issues that require management review, corrective action, and/or trending (such as SAF*T issues), are entered into the CAMPATS database. The corrective actions management team performs periodic trend analyses. These trend analyses are reviewed by management for possible process improvements.

Radiological exposure information is provided to ASPC line managers by the TFC ALARA Chairperson. This information is reviewed for possible trends and work process changes or improvements, and communicated to each employee. Each year ATL works with TFC to assess work processes identified by an employee's ALARA concern or trend analysis.

ATL's corrective action data analysis and trending procedure, ATL-312, Section 9.11, provides guidance to personnel who collect and analyze noncompliance data for the purpose of identifying adverse trends in programmatic elements or work practices. The ATL safety and health organization also performs a quarterly analysis of injuries by type, location, and cause. Results are communicated to employees via the SAF*T, VPP newsletter, and all-hands meetings. Also, an injury/illness summary report is reviewed daily in the plan-of-the-day report.

ATL-312, Section 10.02 is the procedure for providing direction for responding, reporting, investigating, and managing injuries, illnesses, or accidents that occur to employees and subcontractors. It also establishes requirements to ensure that prompt medical treatment is obtained. Near misses are reported to ATL management. The health and safety representative and management conduct an investigation based on the level of severity of the injury/illness or accident, and complete the ATL Event Report form. For more severe or complex occupational injury/illness incidents, the ATL event investigation process is initiated. The event investigation process allows for trained participants (including management, professional, and/or bargaining unit employees) to support accident and incident investigations on a graded approach. Qualified critique leaders/investigators are maintained to lead investigations. The Issue Identification form/CAMPATS process and occurrence reporting systems identify and document root causes and corrective actions.

The TFC is responsible for the comprehensive design survey. The baseline survey of health and safety hazards has been documented for the 222-S Laboratory complex and is available onsite. ATL's Health and Safety Plan is organized according to subject matter and presents general information relevant for planning and safe conduct of work. The Interface Control Document outlines the coordination effort between TFC and ATL for work related to industrial hygiene (IH) and safety. It states that the TFC and ATL both provide subject matter experts for IH needs, including WHAs, and that the TFC utilizes ATL (20%) IH resources for some hazard assessments and IH support. The Interface Control Document also requires that the TFC conduct periodic facility IH sampling as part of a comprehensive IH program for the 222-S facility. IH sampling efforts are coordinated amongst both parties and results are communicated to ATL. Additionally, ATL can request the TFC to conduct IH resurveys, and/or exposure monitoring of the 222-S facilities and employees, when changes to the facility or analytical processes occur.

All ATL employees have the responsibility and authority to stop work when they are convinced that a condition exists that is significantly detrimental to their safety, the environment, or ethics and data integrity. Even before issue resolution, employees are strongly recommended to contact their appropriate safety representative (HAMTC or professional) for safety and environmental concerns or quality assurance staff for ethics and data integrity concerns, so they can be actively involved in resolution. This provides consistent resolution of similar issues and facilitates sharing of lessons learned.

ATL employees may report safety issues verbally to their immediate manager, team safety representative, or safety professional. Employees may send e-mail notification to any of these responsible staff members and expect action to be taken. The Issue Identification form in CAMPATS is also an effective system for employees to notify management of hazardous conditions or practices in writing when corrective actions are required. Issues are entered directly into CAMPATS by the initiator who has identified the issue, by the initiator's manager,

or by the corrective action management administrator derived from a written description submitted by the initiator.

ATL maintains an employee concerns program that allows employees to communicate issues, including safety issues, that are not resolved or resolvable by any of the previously mentioned methods. ATL assures employees of zero tolerance for retaliation through a commitment that all employees will work in a safe work environment in which they are free to raise issues, concerns, and questions without fear of retaliation.

Conclusion

ATL has a strong program that identifies, evaluates, and mitigates hazards for new processes, procedures, materials, facilities, or modified equipment before, during, and after use or operation. Work planning walkdowns and pre-job briefings were very effective and informative. Good communication was demonstrated between all personnel regarding the scope of work and hazard controls. The Team observed all workers, safety professionals, and subject matter experts fully engaged and offering input to the work process including discussion of hazards analysis, the WHA, hazard controls, and the appropriate personal protective equipment (PPE) required. Employees stated that their input is readily accepted and they are comfortable discussing issues in pre-job briefings and during work evolutions. ATL fully meets the Worksite Analysis tenet.

VI. HAZARD PREVENTION AND CONTROL

Once hazards have been identified and analyzed, they must be eliminated (by substitution or changing work methods) or addressed by the implementation of effective controls (engineered controls, administrative controls, and/or PPE). Equipment maintenance, PPE, processes to ensure compliance with requirements, and emergency preparedness must also be implemented where necessary. Safety rules and work procedures must be developed, communicated, and understood by supervisors and employees, and followed by everyone in the workplace in order to prevent mishaps or control the frequency and/or severity.

The ATL management team is responsible for the safe performance of analytical work at the 222-S Laboratory complex and for creating a safe work environment for all employees. This responsibility includes: training all employees to safely perform tasks and charging each employee with always working safely; releasing work only after hazards are thoroughly identified and an agreed-upon set of controls is understood and implemented; attaining employee participation and involvement in hazard identification and mitigation reviews, feedback, and continuous safety performance improvement; and evaluating events to determine causes and implement corrective actions. Additionally, ATL line managers are responsible for verifying that work is performed safely in a manner that adequately protects the workers, the public, and the environment.

With very few exceptions, ATL work is low risk and involves the use of routine analytical chemistry methods documented as controlled procedures. The analytical procedures are reviewed and released to ensure hazards are identified and controls are implemented. This review, among other things, includes the WHA, the Laboratory Addendum, Radiological Screening form, a chemical compatibility review, waste planning checklist, qualification/training requirements, procedure validation, and management approval. The Radiological Screening form determines the appropriate level of radiological risk (low, medium, or high**)** to perform radiological work planning and facilitate the correct set of radiological controls. The selection of preventative controls was appropriate for the complexity and risk involved with job planning and work evolutions observed by the Team. Personnel engaged in planning and the pre-job briefings constantly engaged workers in discussions regarding ways to prevent or mitigate hazards anticipated at the work locations.

ATL utilizes engineered controls extensively throughout their laboratory operations. In order to minimize worker exposure, prevent the spreading of contamination, and reduce the need for additional PPE, engineered controls (such as fume hoods, glove boxes, and hot cells) are utilized. In addition, exposure is limited administratively by performing work to specifically developed and reviewed procedures during lab operations.

After considering substitution, selecting engineered controls, and implementing administrative controls to protect employees from the health and safety hazards, PPE is utilized. PPE equipment in the lab, at a minimum, includes safety eyewear with side shields, laboratory coat, substantial footwear with shoe covers, and a pair of latex or nitrile gloves. Appropriate PPE is required to be used by all personnel when in the laboratory, including visitors. When the radiation work permit requires, additional PPE is utilized including one or two pairs of coveralls, gloves, foot covers, head covers, and respiratory protection (if specifically required in the work, radiation work permit, or procedure).

Employees involved in receiving samples at the door of the facility may be required to wear steel-toed safety shoes depending on the configuration of the shipping container. Appropriate gloves, from new boxes, are provided to workers upon entering the laboratories. When used, splashed, or damaged, gloves are immediately replaced per procedure. Respiratory protection is provided and the inventory is maintained, by contract, through the facility operator, CH2M HILL, at the mask issuing station.

ATL has an appointed health and safety representative who manages and implements the IH program and serves as the IH point of contact. Additionally, ATL, through its Interface Control Document, utilizes the resources of CH2M HILL for support, as necessary, to fulfill safety and health program requirements. The following programs are examples of expertise provided to ATL: radiological control; nuclear safety; security; safety; emergency response, etc. CH2M HILL and ASPC each retain responsibility for providing a safe and compliant radiological control program and work environment as required by DOE. The Team observed that the radiation protection personnel at the facility were helpful and truly engaged in providing a service to the facility and its occupants. They were positive in their approach to evaluating radiological hazards and proactive in solving issues pertaining to work evolutions.

AMH provides all medical services for ATL (and other site contractors) including acting as the medical director, providing medical surveillance, maintaining medical records, providing medical evaluation, and other medical-related activities. Workers with potential exposure or a minor injury/illness are evaluated by AMH. Emergency medical response service is provided by the Hanford Fire Department, and serious cases can be transported directly to the local hospital.

ATL interfaces with the CH2M HILL IH and health and safety representatives to coordinate IH and safety needs, and to reduce the risk of work-related disease or illness. The industrial hygienist implements the employee job task analysis (EJTA) program and performs annual assessments of the status of EJTAs as part of the SIP. The EJTA process defines medical surveillance requirements for each staff member and subcontractor. Job activities requiring medical surveillance are scheduled for evaluation by AMH, which uses EJTA information to guide medical surveillance and monitoring. ATL coordinates medical monitoring and surveillance with AMH by utilizing EJTAs.

The emergency preparedness program for the 222-S facility is a government-furnished service to ATL provided by CH2M HILL. This service is defined in the Interface Control Document, which states that ASPC personnel will actively support the CH2M HILL emergency management program. ASPC provides several employees to participate in the facility emergency response organization as Building Emergency Directors, facility technical points of contact, accountability aids, staging area managers, chemical hazard communicators, etc. ASPC has an emergency preparedness point of contact, and the CH2M HILL and ASPC emergency preparedness points of contact meet regularly to ensure effective coordination of emergency management activities. The ASPC is an active participant in the planning, execution, and evaluation of facility drills. Twelve facility drills are normally planned during a fiscal year.

Facility and equipment maintenance is also a government-furnished service to ATL; this service is provided by CH2M HILL per the Interface Control Document. As part of the Interface Control Document, the ATL work scope is integrated under the 222-S facility process to ensure safe and efficient control of work at the facility. Risk is considered in prioritizing and

scheduling work during the integrated planning process and work package preparation. ATL maintains a schedule to assist with the integration of analytical and facility maintenance activities within the 222-S complex.

Conclusion

ATL meets the intent and letter of the tenet by fostering workforce ownership of all facets of hazard prevention and control. Supervisors and workers actively engage in dialogue to improve, ensure, and verify that safety is not just a phrase used in passing. Team observations confirmed that ATL fully meets the Hazard Prevention and Control tenet.

VII. SAFETY AND HEALTH TRAINING

Managers, supervisors, and employees must know and understand the policies, rules, and procedures established to prevent exposure to hazards. Training for health and safety must ensure that responsibilities are understood, that personnel recognize hazards they may encounter, and that they are capable of acting in accordance with management expectations and approved procedures.

Training is an essential component to the mission of ATL. Personnel are routinely exposed to hazardous conditions in the office and laboratory environments. Formal classroom training, required reading, and on-the-job training are among the tools utilized by ATL to minimize the potential for incidents.

ATL has a comprehensive safety and health training program, as demonstrated by employee interviews, document reviews, and field observations. Training records are stored and maintained for all documents that verify the qualification and proficiency of each worker, as well as their professional development. The CH2M HILL training organization maintains a website used for employee training, qualification, and proficiency confirmation. A standard report is generated that includes each student's name, Hanford (user) identification number, courses completed, and expiration dates (as applicable) for those courses. Training attendance and course completion information is downloaded nightly from PeopleSoft into the Integrated Training Electronic Matrix (ITEM) with record information available to the appropriate ATL personnel and organizations that have a need to know. Additionally, hard copy training records are maintained in central files. Training records are archived and stored in designated records retention areas on a quarterly basis according to the approved record inventory disposition schedule.

Based on responses received during interviews, employees at all levels receive GET, which is designed to orient new employees with the company, its policies, and basic job-related knowledge. Examinations are administered, when required. GET is also used to provide refresher training for basic topics, as required. Typically, GET consists of a combination of HGET, employee orientation, 222-S facility orientation (if assigned at 222-S), and facility emergency and hazards information.

Additional safety and health-related training varies greatly between the support staff and the laboratory personnel. Training for the support staff is position dependent, and is usually identified with input and agreement by the staff member. Generally, the staff felt that their requests for training were well supported. Some workers did note that they had mixed feelings about the adequacy of some elements of computer-based training for their work activities. During the site visit, the Team had the opportunity to meet with recently hired employees who indicated they were comfortable with the amount and quality of the safety and health training they had received thus far.

ASPC employees are assigned the TFC HGET. Personnel complete applicable areas of HGET on an annual basis that provides timely updates of changes. The HGET includes the following elements applied commensurate with the job duties of personnel:

- General description of facilities:
- Job-related policies, procedures, and instructions;
- Radiological health and safety programs as outlined in **HNF-5183,** ***Tank Farms Radiological Control Manual;***
- Facility emergency plans;
- Industrial safety/hygiene program;
- Fire protection program;
- Security program;
- Quality assurance program; and
- Criticality safety.

In addition to a variety of general safety and health subjects automatically presented by HGET, each ASPC employee receives an expanded 222-S orientation for specific information on the laboratory facilities, areas, and hazards, in the following classes:

- Facility Emergency and Hazards Information Checklist;
- 222-S facility orientation; and
- ATS chemical hygiene plan.

To fulfill the requirements of Title 10 of the Code of Federal Regulations, Part 851 (10 CFR 851), ATL presents all ASPC employees an ASPC-specific module on the ISMS core functions and guiding principles, the VPP tenets, and the elements of the worker safety and health program. The course is presented to identify the integration of these components into a single health and safety program that includes the implementing procedures for ATL.

Safety training topics provided to ATL employees through HGET cover industrial safety, radiological safety, security, environmental management, and business practices.

Facility-specific training is provided based on the location of a worker's job assignment. Interviews with employees confirmed, if an employee transfers from one facility to another, there is a brief training period required before the employee is allowed to assume work duties for the new assignment. Examples of formal safety and health training are Radiological Worker I/II, Respiratory Protection, and 24/40 Hour Hazardous Waste Worker. Course information that is critical for retention or subject to significant change is provided to employees through bi-annual refresher training and includes retesting, when appropriate. Refresher HGET training and testing are required every two years to provide updated material to the employees and to ensure that an adequate proficiency level is maintained.

Job-specific training is described in the facility ITEM. The ITEM lists the job functions and assigned training that is required for each employee. Training covering topics on cardiopulmonary resuscitation (CPR), first aid, automatic external defibrillator (AED), respiratory protection, and blood-borne pathogens may be required for some employees based on the requirements of their job description and function.

ATL first-line managers and analytical field work supervisors receive the same safety and health training as their employees. However, additional training is provided that includes increased depth to reflect the added responsibility of their position. Course material is modified and expanded to incorporate supervision/management techniques and other responsibilities.

Top-level managers are required to take additional safety and health training courses (depending on education, experience, job function, or area of responsibility) to provide a broader perspective of their leadership responsibilities for the company. These courses may include, but are not limited to:

- Criticality Safety for Managers;
- Un-reviewed Safety Question for Managers;
- Emergency Response Organization Training;
- Resolving Employee Concerns; and
- Safe and Drug Free Workplace.

The additional training enables senior managers to mentor the first-line managers in ATL and strengthen the overall safety and health culture of the organization.

ATL also maintains training goals and objectives that include responsibility to design, develop, and implement first-rate training. ATL's goals and objectives also support first-line management in establishing the best possible training and evaluation processes; providing the settings, equipment, and materials necessary for effective training; conducting consistent training and evaluation in the classroom and on-the-job; and soliciting feedback as a mechanism to identify the need for change and improvement.

Additionally, ATL-MP-1024 (***ATL Training and Qualification Plan,*** Section 4.4 Training Program Evaluation**)** requires periodic systematic evaluations of the training and qualification program. The evaluations are conducted and documented via the ATL assessment program. ATL independently, or jointly with TFC/ATS training, evaluates the effectiveness of training systems and qualification programs. The evaluation results are used for continuous improvement of the ATL training systems and processes.

Conclusion

Safety and health training methods are effective in addressing the hazards associated with a non-reactor, hazard category 3 nuclear facility tasked to provide laboratory analyses, technical analytical development support, and chemistry services for environmental, waste, and process facility operations. The ATL safety and health training program effectively ensures that responsibilities are understood, that personnel recognize hazards they may encounter, and can perform their duties in a safe and reliable manner in accordance with management expectations and approved procedures. ATL fully meets the Safety and Health Training tenet.

VIII. CONCLUSIONS

Many of the employees at ATL were employed by the TFC, CH2M HILL, when both facility management and analytical procedures were part of a single prime contract. This contractor had already attained DOE-VPP Star status. Since being awarded the ASPC contract in 2005, ATL has built upon an existing safety culture and developed its own mature safety and health program at the 222-S Laboratory. The climate at ATL is one of comprehensive manager and employee teamwork with equal involvement, participation, and ownership of safety across the company. Managers and workers are committed to safety excellence and continuous improvement. Having observed first hand that all elements of the five DOE-VPP tenets have been fully met, the Team is recommending that ATL be awarded DOE-VPP Star status.

Appendix A

Onsite VPP Audit Team Roster

Management

Glenn S. Podonsky, *Chief Health, Safety and Security Officer*
Michael A. Kilpatrick, *Deputy Director for Operations, Office of Health, Safety and Security*
Dr. Pat Worthington, *Director, Office of Worker Health and Safety*
Bradley K. Davy, *Director, Office of Worker Safety and Health Assistance*

Quality Review Board

Michael Kilpatrick	Dr. Pat Worthington
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Review Team

Name	**Affiliation/ Phone**	**Project/Review element**
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Carlos Coffman	DOE/HSS 301-903-6493	Employee Involvement/Safety Training
Mike Gilroy	DOE/HSS 301-903-5326	Worksite Analysis/Hazard Prevention and Control
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