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| CAS-1: Contractor Assurance System Process Description | DATE: 3/20/09 |
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PERFORMANCE OBJECTIVE:

The contractor has an approved Contractor Assurance System (CAS) process description document that describes a rigorous and credible process for identifying weaknesses and deficiencies, and driving improvement based on effective use of operating experience, assessment, worker feedback, lessons learned, and issues management processes.

DISCUSSION:

CRITERION:

1-1a. The contractor has developed and formally issued an approved document that fully describes the programs and processes that comprise the contractor assurance system (CAS).

The LANL Contractor Assurance System is documented in System Description (SD) 320, Revision 1, *LANL CAS Description Document, dated February 2009*. The CAS SD describes the overall design, supporting processes, and continuous improvement tools that support LANL meeting the NNSA expectations for CAS. The LANL CAS relies on a continuous improvement cycle, which consists of goals, metrics, assessments, improvements, and feedback. There are eight processes (strategic performance improvement, requirements flow down, risk management, measures, assessments, issues and corrective actions, process improvement, and lessons learned) that support execution of the overall system and help ensure that the CAS operates as a single system that integrates requirements, risk, and performance. These processes are documented per the LANL document hierarchy. Supporting the CAS continuous improvement cycle are LANS/LANL governance and NNSA/LASO oversight.

This sub criterion was met.

b. The CAS process description document has been approved in the manner specified in the contractor's prime contract or by the NNSA site office manager.

The H-4 clause of the LANL prime contract states the Contractor Assurance System shall be approved and monitored by the Contractor's Parent Organization. For LANL, this is the LANS Board of Governors. The document was first published in September of 2006 and updated in February of 2008 and February of 2009. The LANL CAS requires an annual assurance letter be sent to the Board of Governors and the NNSA Site Office Manager that states that the LANL CAS is compliant with contract requirements, is operating as designed, and is continuously improving. The basis for this letter is an annual CAS self-assessment. The team reviewed the FY 2007 and 2008 Annual

Assurance letters and the supporting self-assessments and concluded that the LANL CAS has been approved and monitored as required by the LANL contract and the CAS SD.

This sub criterion was met.

c. The site office manager is kept informed of any subsequent updates to the CAS process description that involves significant changes in accordance with normal site approval and configuration control processes.

The H-4 clause of the prime contract requires that the CAS include a process for notifying the Contracting Officer of significant assurance system changes. The LANL CAS configuration management process is described in the system sustainability section of the CAS SD. Formal change control is applied when there are proposed changes to the elements of CAS or supporting processes, or when changes are required to adjust to changing conditions. Table 3 of the CAS SD describes the change control responsibilities, including notification of the LASO Manager for all changes. The CAS SD was first published in 2006 and revised in 2008 and in 2009. Notifications were made via letters from the LANL Contract Assurance Officer to the LASO Manager for the original submittal and the two subsequent updates. The LANL Annual Assurance Letters to DOE Site Office Manager indicate that Site Office is kept informed of changes to the CAS Description Document.

The team noted that the CAS SD included an acronym list and document change history at the end of the document. This section included a summary of changes for the last two revisions (February 2008 and February 2009) but did not include the original submittal in September of 2006. The team subsequently concluded that LANL should ensure that the revision history for the CAS SD is consistent with their internal document control requirements for a system description document. **(OFI CAS 1-1.1)**

This sub criterion was met. The overall criterion was met. One (1) OFI was identified.

1-2. The scope of the contractor's CAS specifically includes nuclear safety; environment, safety, and health (ES&H); safeguards and security; cyber security; emergency management; and business management processes and programs, and requires routine evaluation of work performed under their contract in these areas, including the work of subcontractors.

The LANL prime contract requires that the CAS system applies to all work at the site, which is inclusive of the six areas identified in DOE O 226.1A and the NNSA supplemental directive, including the work of subcontractors. The LANL CAS SD includes a crosswalk that describes how the system addresses both the contract requirements in the H clauses and the DOE O 226.1A and NNSA requirements for CAS. (Note - the NNSA 226.1 Supplemental Directive adds business management processes that is not identified in the DOE Order) The crosswalk points to the sections that implicitly describe the scope of the CAS system to include all work at LANL. Table C-1 of the LANL CAS SD, *Prime Contract statement of work systems and supporting*

systems, includes all LANL work areas and enabling systems and processes. The enabling systems include all the required CAS functional areas of nuclear safety; environment, safety, and health (ES&H); safeguards and security; cyber security; emergency management; and business management. During factual accuracy review the team was informed that the integration section of the CAS SD on page 10 included the following statement “This integration also applies to other systems as shown in Table C-1 (pg. 37). This ensures that the CAS covers all work performed under the LANL Prime Contract, including the work of subcontractors.” The team concluded that this statement, although not referenced in the DOE O 226.1A crosswalk in Table B-1, explicitly states that the scope of the LANL CAS to include all work including the work of subcontractors.

LANL noted in the FY 09 CAS GAP Analysis (conducted using the NNSA CAS CRAD) that routine evaluation of subcontractor work was not consistently performed as required by their implementing procedures. This was identified during an institutional assessment of subcontractor safety across LANL. The subcontractor safety assessment found that oversight was in place for construction and environmental subcontractors, and partially in place for maintenance and the balance of subcontractors. The assessment team also determined that relevant requirements were being flowed to subcontractors and that although there were gaps in implementation of the requirements subcontractor work was being safely performed. As a result, LANL concluded that they “Partially Met” this criterion in the FY 09 CAS GAP Analysis.

The team concluded that the LANL CAS SD includes all the required elements of DOE O 226.1A including the work of subcontractors. However, LANL should consider adding a scope section to the CAS SD and updating the DOE O 226.1A crosswalk in Table B-1 in the CAS SD in order to improve the clarity of the flow down of CAS requirements. **(OFI CAS 1-2.1)**

This criterion was met. One (1) OFI was identified.

1-3a. The CAS methodology and approach focus on using thorough and accurate operational awareness, assessment, and issues management process information to identify weaknesses/deficiencies and opportunities for improvement, and to subsequently develop and execute actions that lead to improved performance.

The LANL CAS SD includes the use of assessment, issues management, and improvement tools to drive continuous improvement through the use of an effective feedback loop. The feedback loop is through the LANL Issues Management Tracking System (LIMTS) for weaknesses/deficiencies and through mechanisms such as lessons learned, process improvement tools such as Lean Six Sigma, and goals/objectives for identified opportunities for improvement.

The team noted that although the CAS SD does not explicitly describe operational awareness activities, they are included in implementing processes and expectations within the four prime elements of the CAS SD document (Goals, Metrics, Assessments, and Improvements). These include Management Observation and Verification (MOV)

used to evaluate work activities at the floor level and implementation of lessons learned and corrective actions, management review boards, and review and analysis of metrics, measures, and goals. The team noted that the CAS SD could be improved by including a specific description of how LANL management obtains and uses operational awareness information throughout the continuous improvement cycle. **(OFI CAS 1-3.1)**

This sub-criterion was met.

b. The CAS SD describes the various types of CAS assessment and operational awareness activities and how they are integrated and used to achieve meaningful and effective performance improvement.

Figure 1 of the LANL CAS SD provides a high level of description of how information such as goals, objectives, metrics, results of assessments, and improvements are integrated to drive continuous improvement. The CAS SD provides more detail of each of these four areas and the eight supporting processes, including the assessments and issues and corrective action processes. The team noted that the CAS SD had an integration section that was intended to address how CAS is integrated with other required systems such as Integration Safety Management (ISM), Quality Assurance (QA), and Integrated Safeguards and Security Management (ISSM). However, this section of the CAS SD did not describe in detail how CAS integrated with these other systems and did not include a description of all the management tools used to drive integration at the various process, functional area, and organizational interfaces. The team observed some of these integration mechanisms during the review such as the various levels of management review boards (institutional, associate directorate, and directorate level), Director's Action List meeting, and management review of Dashboard measures. The team noted that these management integration tools appeared to be effective. However, as noted above, neither the CAS SD nor the implementing program description documents and supporting process procedures provided a detailed description of how key management tools were used to support the overall integration of programs and processes into the LANL CAS. The team subsequently concluded that the CAS SD could be improved by explicitly describing the key management tools used to drive integration at the various process, functional area, and organizational interfaces and integration with other systems such as ISM, QA, and ISSM. **(OFI CAS 1-3.2)**

This sub-criterion was met.

c. CAS activities specifically discussed include the evaluation of operating incidents and injuries; performance indicators/measures; lessons learned; worker feedback; and results from various types of assessments.

The LANL CAS SD includes sections describing performance measures/indicators, lessons learned, and assessments. Information regarding operating incidents and injuries is described within the lessons learned element of the LANL CAS. The details of the lessons learned process and supporting systems and tools is described in CRAD CAS-3, Contractor Assurance System Operational Awareness. The LANL Operating Experience

Program Description PD 323 captures and applies lessons taken from operating experience in order to avoid repeat occurrence.

The team noted that worker feedback mechanisms are not explicitly identified in the CAS SD document. They are implied in the section on issues management, where it states that workers are encouraged to identify and report issues, and in the lessons learned and risk process descriptions where there are process blocks to conduct lessons learned following work activities. However, neither these sections nor the integration section of the CAS SD explicitly describe the mechanisms used to collect and respond to worker feedback. The team noted in CAS CRAD 3 that although worker feedback mechanisms such as XXX are in place, they are not being effectively implemented. See Issue XXX.

The team subsequently concluded that the CAS SD should specifically identify worker feedback mechanisms within the supported process section and/or in the integration section of the document. **(OFI CAS 1-3.3)**

This sub-criterion was met.

d. The CAS SD describes how the issues management process is used to manage improvement actions.

The LANL CAS SD includes a general description and a process flow chart and description of the LANL Issues and Corrective Action Management (ICAM) process. This section refers to the institutional procedure for implementing the LANL ICAM process. The tool used to support the LANL ICAM process is called the Las Alamos Issues Management Tracking System (LIMITS). The CAS CRAD 4 includes the detailed evaluation of the LANL ICAM process.

This sub-criterion was met.

e. Types of assessments include self-assessments, management assessments and walk-throughs, internal independent assessments of contractor performance, and assessments used to measure the effectiveness of CAS processes and activities (e.g., corporate audits, third-party certifications, and external reviews).

The CAS SD provides an overview of LANL assessment program. LANL uses three types of assessments: management observation and verification (MOV), management assessment, and independent assessment. The CAS SD and assessment program incorporates the used of peer assist and external parent organization assessments to evaluate and measure the implementation and effectiveness of CAS and supporting CAS elements. The team was provided recent Parent Organization Functional Management Assessments (POFMA) and Directors Institutional Assessments that evaluated both the entire CAS and selected portions of CAS. Lastly, the CAS SD includes a section listing third party certifications that have been obtained or are currently being pursued. For example, LANL's Environmental Management System (EMS) was certified in March of 2006 as ISO 4001 compliant and LANL is pursuing certification under OSHA's Voluntary

Protection Program (VPP) in June of 2009. See CRAD CAS 2, CAS Assessments, for additional details with respect to implementation and use of assessments.

This sub-criterion was met. The overall criterion was met. Three (3) OFIs were identified.

1-4a. The contractor has established clear and unambiguous lines of responsibility and authority for performing CAS functions and activities, and assigned personnel are adequately trained and qualified and possess experience, knowledge, skills, and abilities commensurate with their responsibilities.

The LANL CAS SD clearly identifies line management responsibility for executing CAS functions such as establishing goals and metrics, conducting assessments, issues and corrective action management, conducting improvement activities, and overall feedback. The CAS SD also includes process diagrams that provide evidence that various organizations have responsibilities and accountability for performing supporting process activities.

The Requirements Management System (RMS) requires that Roles and Authorities be clearly identified in section 4 of all implementing documents such as Program Description documents and Procedure documents. The team reviewed a sample of the core implementing process documents as Assessments, Issues Management, and Lessons Learned procedures and noted that section 4 included the responsibilities of Laboratory Director, Associate Directors and employees related to CAS functions and activities.

Personnel assigned to the Contractor Assurance Office (CAO), including deployed CAO staff to line management, have duties and responsibilities identified in their position description documents.

This sub-criterion was met.

b. The contractor has established and maintains appropriate qualification standards for these personnel.

Personnel assigned to the CAO have duties and responsibilities identified in their individual position description document. From the position description a training plan is developed. The team reviewed the training plan for the Contractor Assurance Specialist and Contractor Assurance System Deployed Specialist. The plans reflect the various training methods (required reading, formal class training, on the job training, etc) for each of the main CAS functions (goals, metrics, assessments, issues and corrective action, and feedback and improvement).

Training and qualification requirements for certain CAS functions that require a unique skill such as conducting assessments are identified in the individual procedures. For example, Section 5 of Procedure P328-2, *Independent Assessment*, Procedure P328-3, *Management Assessment*, and Procedure P328-4, *Management Observation and*

Verification, identifies required or recommended training courses depending on the role or function. Training was developed using a graded approach to the systematic approach to training per procedure P781-1, *Conduct of Training Manual*. For example, P328-3, *Management Assessments*, identifies two required courses (Management Assessment Overview, and Conducting Management Assessments) for Managers, CAO –Deployed Personnel, and Management Assessment Team leaders and Team members. For each of these procedures, the specific training classes are listed as “Training to be developed”. Each of the procedures states in section 5 that “Persons in the following positions must receive training specific to this procedure within 6 months of development of the training.”

The team noted that many of the training courses have been developed and personnel have been trained as required. For example, a review of course completion data shows that 14 sessions of Independent Assessment Skill Training and 69 sessions of Conducting Management Assessment were completed during the 2006 to 2009 time period. The team noted that LANL should update CAS related procedures to reflect the current status of available training courses. **(OFI CAS 1-4.1)**

This sub-criterion was met. The overall criterion was met. One (1) OFI was identified.

SUMMARY OF RESULTS

Overview

The CAS SD describes the overall design, supporting processes, and continuous improvement tools that support LANL meeting the NNSA expectations for CAS. The LANL CAS relies on a continuous improvement cycle, which consists of goals, metrics, assessments, improvements, and feedback. There are eight processes (strategic performance improvement, requirements flow down, risk management, measures, assessments, issues and corrective actions, process improvement, and lessons learned) that support execution of the overall system and help ensure that the CAS operates as a single system that integrates requirements, risk, and performance. These processes are documented per the LANL document hierarchy. Supporting the CAS continuous improvement cycle is the LANS/LANL governance and NNAS/LASO oversight.

The LANL Annual Contract Assurance letters and the supporting self-assessments indicated that the LANL CAS has been approved and monitored as required by the LANL contract and the CAS SD. The NNSA Contracting Officer is kept informed of changes to the CAS Description Document as required.

The LANL CAS SD was written primarily to demonstrate how the CAS system was designed and explicitly described how the contract H clause requirements, one of which is the CAS, were being met. LANL assumed that meeting the H clauses would encompass the DOE and NNSA Directive requirements for CAS. However, the team identified several opportunities for improvement during the review that highlighted the need for a more detailed crosswalk of the LANL CAS to the DOE and NNSA requirements to clearly demonstrate compliance to these requirements.

Results

All four (4) Criteria were met. Six (6) OFIs were identified.

List of Issues:

None

List of Opportunities for Improvement:

OFI CAS 1-1.1 - LANL should ensure that the revision history for the CAS SD is consistent with their internal document control requirements for a system description document.

OFI CAS 1-2.1- LANL should consider adding a scope section to the CAS SD and updating the DOE O 226.1A crosswalk in Table B-1 in the CAS SD in order to improve the clarity of the flow down of CAS requirements.

OFI CAS 1-3.1 - The CAS SD could be improved by including a specific description of how LANL management obtains and uses operational awareness information throughout the continuous improvement cycle.

OFI CAS 1-3.2 - The CAS SD could be improved by explicitly describing the key management tools used to drive integration at the various process, functional area, and organizational interfaces and integration with other systems such as ISM, QA, and ISSM.

OFI CAS 1-3.3 - The CAS SD should specifically identify worker feedback mechanisms within the supported process section and/or in the integration section of the document.

OFI CAS 1-4.1 -LANL should update CAS related procedures to reflect the current status of available training courses.

Comparison to Contractor CAS CRAD Self Assessment (GAP Analysis)

The contractor determined that criterion 1, 3, and 4 were met. The LANL CAS Gap Analysis determined that criterion 2 was not fully met based on identification of a potential Gap with implementation of CAS requirements involving subcontractor work.