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# Contractor Assurance System Peer Review Report

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November 1-2, 2011

DOE Ames Site Office  
Ames Laboratory  
Iowa State University



IOWA STATE  
UNIVERSITY



THE Ames Laboratory  
*Creating Materials & Energy Solutions*  
U.S. DEPARTMENT OF ENERGY

## **1.0 Executive Summary**

This report documents the peer review outcomes of the Contractor Assurance System (CAS) as executed by the Ames Laboratory (Ames Lab), Iowa State University (ISU), and the DOE Ames Site Office (AMSO). The peer review is framed by the Contractor Assurance System H-clause and focused on the development, deployment, and overall maturity of the system in place. The review covered all three principal roles in contractor assurance: Laboratory management, the corporate parent, and the DOE Site Office. The key outcomes of this review are the following.

### **1.1 Overall Performance of the Contractor Assurance System:**

The overall conclusions of the peer review team are the following:

- Ames, ISU and AMSO have developed and maintained a transparent, highly communicative relationship that is working. This relationship and ensuing work supports mission accomplishment and the long term viability of the Lab
- ISU is a highly involved Corporate parent and provides significant business and infrastructure support
- AMSO embraces its role in facilitating Ames' mission
- CAS effectiveness relies on strong personal interactions
- A climate of mutual trust exists among ISU, Ames and AMSO

### **1.2 Notable Practices:**

Several notable practices (defined as observed practices, behaviors, processes or tools that make a significant contribution to the overall function and value of the CAS) were observed during the review which may be useful for CAS's implemented elsewhere. They include:

- Ames Lab is a critical component of ISU's strategic plan; therefore the Lab receives special consideration for support and resources
- Input from external board members facilitated both the differentiation of Lab mission from ISU as well as from that of other DOE Labs and Universities
- Readiness Review is a key risk assessment process which aligns mission with ES&H and funding allocation; additionally, it assures proper planning before initiating or significantly modifying research
- Integrated Lab walk throughs are a part of the Lab culture, cover all spaces, and have strong, highly visible Lab Director participation

### **1.3 Improvement Considerations for Further Maturing of the CAS:**

The following are suggestions for consideration by Ames Lab management, ISU, and AMSO for improvements to their CAS:

- Adopting a more defined, proactive approach to assuring performance

- Review the metrics process and suite to holistically consider how they can support Lab management and the Laboratory’s strategic agenda
- Consider consolidating action tracking systems
- Consider a top down approach for identifying, prioritizing, mitigating and monitoring mission jeopardizing risks, e.g., Succession Planning for key positions
- Review the overall CAS to consider adjustments as Ames Lab grows:
  - Consider benefits of using external resources for the review of Operations areas, similar to that of Ames’s Scientific mission review
  - Review departmental risk evaluations at a greater frequency to capture changing conditions

## 2.0 Background

DOE-SC has added an H-clause to each contract for the management and operation of its National Laboratories. This contract clause requires that a Contractor Assurance System be implemented at each of its Laboratories, and defines the attributes those Contractor Assurance Systems must exhibit. One attribute required by the H-clause is that a method for verifying/ensuring the effectiveness of the assurance system be established. DOE-SC has decided to use a peer review process for the initial review of these systems at each of its sites to provide itself assurance that this H clause is being effectively implemented, and to identify and share best practices and lessons learned to enable continuous improvement. The expectation is that the DOE-SC assurance approach, as defined in the H clause, is implemented and produces the desired outcomes. The peer reviews are designed to provide feedback on the status of implementation of the H clause, and facilitate continuous improvement across the DOE-SC Laboratories.

## 3.0 Scope, Objectives, and Approach

The DOE-SC assurance approach relies on a close partnership between Laboratory management, corporate parents, and the local Site Office, as these three entities function as a unit to accomplish the Laboratory’s mission and deliver outcomes. For this reason, the scope of this review includes the assurance activities of each of these entities, and the composition of the peer review team includes members representing each. The peer review team members for this review were:

- Corporate Parent and Chair: Anita Gursahani, University of California
- Laboratory COO: Paul Kearns, Argonne National Laboratory
- Site Office Manager/DOE: Jeff Roberts, Argonne Site Office
- Assurance SME/Coordinator: Stephen Smith, Thomas Jefferson National Laboratory
- Assurance SME: Cindy Doyle, Pacific Northwest National Laboratory
- Assurance SME: John Chernowski, Lawrence Berkeley National Laboratory

The objectives of the peer review are to determine: 1) the extent to which Contractor Assurance Systems, as defined in the H clause, are in place at each DOE-SC Laboratory; and 2) the effectiveness and maturity of these systems in terms of functionality, effectiveness and efficiency. In addition, the peer reviews identify and share good/best practices and/or lessons learned to foster continuous improvement of assurance systems across the SC Laboratories, Corporate parents, and Site Offices. The

CAS review in no way duplicates or overlaps with program, science and technology, or operational peer reviews the Office of Science and other DOE programs perform to verify or validate the scientific merit of work done at the Laboratories.

The review was conducted November 1-2, 2011, and included formal presentations by and interviews with, individuals from Ames Lab, ISU, and AMSO. The team also reviewed evidence of process functionality and effectiveness. The names of those interviewed are contained in Appendix A. A list of documents reviewed is contained in Appendix B. The peer review team's conclusions are based on the assessment of the assurance systems, processes, tools and practices in place, the level of engagement of all three reviewed parties in these processes, and the evidence presented of process effectiveness. The approved Lines of Inquiry (LOIs) were used to frame the review (available in the Peer Review Guide).

## **4.0 Results**

Peer review results are organized by the three principal elements of CAS: Laboratory management; the Corporate parent, and the DOE Site Office. In addition, the Team's overall summary view of the entire CAS is included in section 5.0 of this report. Key performance attributes of the ISU/Ames Lab/AMSO CAS as observed by the peer review team are noted in the sections below. These observations align with the LOIs and required attributes of an Assurance System as defined in the H-clause.

### **4.1 Laboratory Management**

Performance of Laboratory Management in the CAS is presented in the following section organized by the LOIs for this role.

#### **4.1.1 *A comprehensive description of the CAS with processes, key activities, and accountabilities are clearly identified.***

The CAS description was approved in May 2010 and recently revised with minor editorial changes. Processes and key activities are clearly defined, including description of assessment mechanisms and issues management tools. Corrective action tracking is evolving, and changes should be reflected in the CAS description when appropriate.

Accountabilities, including the roles of Lab and ISU staff, are described, as is the reporting relationship with AMSO. The CAS is integrated into Laboratory operations and Lab staff are responsible for implementing key activities. Additionally, many Laboratory operational activities are supported by ISU staff, such as Occupational Medicine and Facilities, enabling a very close working relationship between Lab and ISU staff.

#### **4.1.2 *Methods for verifying/ ensuring CAS processes***

The CAS Peer Review is considered a primary method for verifying CAS processes. Additionally, Ames Lab views the PEMP process as a form of verification, which is supported by AMSO participation in joint assessments and the monitoring of performance measures. Ames Lab also relies on the close involvement of ISU staff in Lab activities as a form of verification, and

standing forums such as the Ames Lab Oversight Board (ALOB) and Ames Lab Operations Review Committee (ALORC) also verify the CAS.

As noted in Section 1.3, Improvement Considerations, the team believes that the CAS verification role of the ALORC could be strengthened by including members external to the Lab and ISU, as evidenced by similar actions taken by the ALOB for the scientific mission. Inclusion of external members on the ALORC is also likely to add value to Lab performance.

All parties agree that the relationship is highly transparent, though beyond the joint walkthroughs, assessments and appraisals, this is largely reactive, i.e., Lab staff responds to AMSO requests for information rather than providing real time data. This model is highly dependent on personal relationships, and all parties feel that the model works for Ames.

**4.1.3 *Timely notification to the Site Office of significant Assurance system changes prior to the changes.***

The Ames Lab CAS description requires AMSO notification before significant changes are implemented. Additionally, AMSO is in close communication with Lab staff, especially Operations leadership. This is significant given that AMSO is not co-located at the Lab. Senior Operations staff acknowledged regular, often daily or weekly, communication with AMSO staff.

**4.1.4 *Rigorous risk-based, credible self-assessments, and feedback and improvement activities, including utilization of nationally recognized experts, and other independent reviews to assess and improve the Contractor's work process and to carry out independent risk and vulnerability studies.***

Ames Laboratory has a well developed suite of assessment mechanisms that are the cornerstone of their assurance program. Self-assessments include program/ department walkthroughs led by line management, topical appraisals performed by ESH&A subject matter experts, and safety walkthroughs composed of cross-functional teams. The safety walkthroughs are noteworthy in that they are clearly part of the Lab's culture; line managers at multiple levels feel these reviews are valuable and critical to open communication. These walkthroughs cover all Lab spaces annually, and include senior Lab management (usually the Lab Director), ISU, and AMSO participation. Finally, these walkthroughs are performed by integrated teams that assess safety, property, and facilities issues in an effort to only "interrupt once."

Other assessments include Internal Audit, independent walkthroughs, and management reviews of science programs. The Lab and AMSO have partnered to develop joint assessments, resulting in a marked decrease in Site Office independent assessments. This is a positive practice that will result in a more efficient assurance portfolio.

Assessment findings are captured in the Ames Laboratory Corrective Action Tracking System (ALCATS) or the Internal Audit tracking system. The Lab is reviewing how corrective actions are tracked and how the two tracking systems will be used in the future. Current systems seem to be effective, as findings are generally resolved according to established schedules. However, as

noted in Section 1.3, Improvement Considerations, the review team recommends that the Lab consider a single tracking system or functionality that allows the two systems to share information, as this will foster more robust trending.

Risks are identified through two primary mechanisms, the COO driven annual risk statement and the Readiness Review process. The annual risk statements are completed by each Operations department; the resulting risk assessments help ensure alignment with Laboratory level strategic objectives and also influence budget allocation. The Readiness Review process is performed on all proposals and when work scope changes significantly; results are reviewed every five years to ensure consistency. This process is a robust risk assessment tool that incorporates mission, budget, facilities, and ES&H, and both operations and science staff consider it a value added tool. The team observed that both risk assessments are performed at operational and project levels, and not top down. As noted in Section 1.3, Improvement Considerations, the team encourages the Lab to consider a more top down approach for identifying and monitoring mission-related risks.

**4.1.5 *Identification and correction of negative performance/compliance trends before they become significant issues.***

Lab management uses information from ALCATS and Internal Audit to identify trends. Additionally, ESH&A and S&S regularly review performance data to identify negative trends. The ESH&A process is very mature and produces consequential reports that are shared with Lab management, AMSO, and the ALORC as appropriate. Operations managers are cognizant of performance trends but lack the formal process of ESH&A and S&S; examples of these Operations oriented mechanisms include financial statements and Procurement and Property balanced scorecards. As noted in Section 1.3, Improvement Considerations, the team recommends that the Lab review current metrics against the Lab's strategic agenda and identify the suite of performance measures that will best enable proactive monitoring of mission relevant data.

**4.1.6 *Integration of the Assurance system with other management systems including Integrated Safety Management.***

Lab management considers CAS to be a line management responsibility, and therefore leverages existing management systems in execution of the CAS, including ISM and QA. A specific example is the Assessment program, which is firmly in place and used to support management systems such as Property, Plant Protection, Training, Document Control, HR and Cybersecurity. Additionally, the Readiness Review process is critical to the Lab's risk assessment and mitigation efforts and is integrated with ISM, ISSM, and the budget process.

**4.1.7 *Metrics and targets to assess performance, including benchmarking of key functional areas with other DOE contractors, industry and research institutions that result in efficient and cost effective performance.***

The ESH&A function has a mature suite of performance measures that support Lab management decision making; performance against these measures is regularly reported to Lab management, AMSO, and ISU. PEMP measures are also closely monitored.

Measures are also used to gauge performance in other Laboratory areas, such as science publications and invited talks, Property and Procurement balanced scorecards, and Budgeting. As noted in Section 1.3, Improvement Considerations, the team recommends that Lab management consider reviewing the current suite of performance measures to ensure a more consistent alignment with the Ames Lab mission and strategic objectives. An outcome of this process could be a select set of performance measures that support Lab management decision making.

Benchmarking is performed with other DOE Labs in the areas of ES&H, Budget, Purchasing & Property, Benefits, and Sustainability. Additional benchmarking expertise and feedback could be obtained through the ALORC, specifically the use of external parties for review of Operations areas.

#### **4.1.8 *Continuous feedback and performance improvement.***

Feedback mechanisms are helping Ames Lab, as evidenced by consistent improvements in safety performance and PEMP scores which consistently meet expectations. Specific examples of working feedback mechanisms include graded approach effectiveness reviews for corrective actions and, for more serious issues, formal effectiveness reviews. Additionally, the Lab is expanding ALCATS beyond ESH&A; this is a continuous improvement in itself and will not only strengthen an existing CAS process, but will also promote visibility and further use of continuous improvement mechanisms.

Email addresses have been established across a variety of disciplines, allowing staff to easily and quickly report issues, and providing a feedback mechanism for Lab Management. Examples include [fixit@ameslab.gov](mailto:fixit@ameslab.gov), [cleanit@ameslab.gov](mailto:cleanit@ameslab.gov), and [security@ameslab.gov](mailto:security@ameslab.gov). Preliminary information discussed during the review indicated limited use of these feedback mechanisms; Management should monitor usage to gauge effectiveness and utility. A more traditional mechanism is the Lessons Learned program, where information is captured and communicated by both formal and informal means; Safety lessons learned are managed with greater formality than the business functions and includes use of DOE operating experience information; Business related lessons learned are proliferated through meetings and conference calls with counterparts from other DOE labs.

#### **4.1.9 *An implementation plan (if needed) that considers and mitigates risks for the CAS.***

An implementation plan is not needed.

#### **4.1.10 *Timely and appropriate communication to the Site Office, including electronic access of Assurance related information.***

As previously noted, AMSO electronic access to assurance information is limited. However, regular communication exists among Ames Lab, AMSO, and ISU, and all parties are satisfied with the current level of communication and consider their relationships the backbone of CAS effectiveness. Additionally, AMSO participates in many CAS activities, exhibiting firsthand knowledge of Lab operations and performance.

#### **4.1.11 *Laboratory Management's view of benefits derived from Assurance functions***

Lab management identified ongoing efforts among ISU, AMSO and Ames Lab to partner on appraisals and reviews as the greatest benefit derived from the CAS. This effort will produce more efficient assessments, and has already resulted in the reduction of AMSO independent assessments. Combining assessments will also increase cooperation among line staff from all parties and further enhance transparency.

The Peer Review process has also prompted discussions among AMSO, ISU, and Lab management about right sizing the CAS at Ames Lab.

## **4.2 Corporate Parent**

Performance of the Corporate Parent in the CAS is presented in the following section organized by the LOIs for this role.

Iowa State University (ISU), as the corporate parent, is actively engaged in governance of Ames Lab with the Ames Site Office and Laboratory management. ISU is implementing the provisions envisioned by the DOE H Clause and is meeting the objectives of CAS.

#### **4.2.1 *The Governance role is present and executed within the Assurance system.***

Based on presentations, interviews, and documentation reviews, it is evident that ISU is highly engaged in contractor assurance and committed to ensuring that the Laboratory is meeting DOE requirements. The Governance role is delivered through the ALOB and one standing committee, the ALORC. The executive board of the ALOB is comprised of the ISU President, ISU Executive Vice-President/Provost, ISU Vice-President for Business and Finance, ISU Vice-President for Research and Economic Development, and the Ames Laboratory Director. The Full Board consists of the Executive Board and two or more distinguished members of the scientific community external to ISU. The external members review and advise the Executive Board on Ames Lab's scientific mission and capabilities.

Through the ALOB, ISU delivers the governance to Ames Lab, which includes the provision of performance feedback; strategic input for scientific mission; selection and appointment of joint faculty; operational, business and assurance system oversight; course correction; and access to ISU business and infrastructure systems. Execution of the governance role is enabled by frequent and ongoing discussions between the Lab Director and the ISU Executive Vice-President/Provost as well as between the Lab COO and the ISU Vice-President for Business and Finance; quarterly meetings of the ALOB and ALORC with the Ames Lab Director and senior management; the annual Lab Planning process led by the Director of the Office of Science; and

on-going discussions between Ames Lab and ISU senior management with AMSO officials and with DOE at DOE HQ. In addition, the Ames Lab Director is also a member of the ISU Senior Leadership, a council comprised of the Vice-President, Deans, and Associate Provosts chaired by the Provost.

The ALORC is focused on the operations of the Laboratory. The Vice-President for Business and Finance is the Committee Chair. Members include the Laboratory Director, Laboratory COO, and ISU senior leadership representatives of operational functions such as Legal, Facilities, ES&H, Finance, Human Resources, and Internal Audit. The ALORC meets quarterly and the Committee Chair reports out to the ALOB at their quarterly meetings. CAS is discussed at the ALORC as well as the ALOB.

Meeting minutes and other documents showed that the ISU and Lab leadership raise issues and seek guidance and support effectively at the ALOB and ALORC meetings. In addition, the Ames Lab Director reports directly to the Executive Vice-President/Provost. ISU conducts an annual 360° performance review of the Director and based on results of the review, recommends and approves the annual salary recommendation.

#### **4.2.2 *Timely and appropriate communication to the Site Office, including electronic access, of Assurance related information.***

There is regular and effective communication between ISU, the Lab and AMSO. Despite the AMSO not being co-located with the Lab, a concerted effort is made by the AMSO Site Office Manager (SOM) to speak with the Vice-President for Business and Finance and Lab COO on a regular basis, and to meet in person when the SOM is on-site.

The AMSO has ready access to assurance related information. However, this access is not direct and provided to the AMSO staff by Ames Lab staff as requested. The lack of electronic/web-based access is due to firewalls built into the Lab's network and further complicated by the fact that AMSO is not co-located with the Laboratory. Despite these challenges, the Site Office is very satisfied with the cooperation of the Laboratory in providing information and believes that they have transparency into laboratory assurance system products.

#### **4.2.3 *Value delivered by, and improvement of, the Governance function and overall Assurance System.***

As a result of the most recent contract competition in 2006 for the Ames Lab, ISU has reinvigorated its oversight and stewardship role. Based on our discussions, it is apparent that ISU is highly engaged and proactive in its role as the M&O contractor for Ames Lab. ISU views its engagement as key to the success of the Lab and provides a long list of business systems and infrastructure linkages to ensure that Ames senior leadership and scientific staff are focused on execution of their scientific mission. In 2006, ISU chartered the ALOB and reconstituted the ALORC to serve as key advisors and consultants for executing the scientific mission and operations. At the same time, ISU reached out to distinguished scientific leaders, external to Ames Lab and ISU, to advise the Laboratory and ISU as to how Ames could differentiate its scientific mission from ISU as well as other DOE Labs and Universities. Based on the advice and observations made by the external ALOB advisors, the Lab and University have made strategic

mission changes. These changes have better positioned the Lab for future Basic Energy Science (BES) funding and partnering with other national Labs for DOE Innovation Hub opportunities.

ISU provides Ames Lab access to its business systems such as financial and human resources; direct linkage into and use of infrastructure systems such as utilities, roads, grounds, parking lots, security, etc.; as well as access to subject matter expert resources within ISU's Facilities and ES&H organizations. ISU is appropriately reimbursed for these services through the Lab's annual performance fee. Access to these systems and resources allows the Laboratory to focus its efforts on accomplishment of its scientific mission and maintain a smaller operations function. ISU senior leadership has determined that the Lab is a critical component of ISU's strategic plan; thus, the Lab receives special consideration for support and resources.

Additionally, the University's support for hire and appointment of Joint Faculty is crucial to the recruitment and retention of world-class scientific talent at Ames Lab and ISU. The University President and Provost both articulated that the University and Ames Lab mutually benefit from Joint Faculty appointments and access to graduate and undergraduate students.

The oversight board and committee structure appears to be appropriate for Ames Lab. Based on the annual Lab budget authorization and staffing levels, there does not appear to be a need for multiple committees and oversight functions at this time.

As the Lab grows with respect to budget and mission, the CAS should be scalable with the activities and risks. Several examples of how CAS can be expanded at the Corporate Parent level to accommodate a growing mission include consideration of:

- Using external resources for review of Operations areas, similar to that of Scientific mission review;
- A top down approach for identifying, prioritizing, mitigating and monitoring mission jeopardizing risks, e.g., Succession Planning for key positions.

### **4.3 DOE Site Office**

Performance of the DOE Site Office's role in the CAS is presented in the following section organized by the LOIs for this role.

The Ames Site Office (AMSO) is the smallest of all SC Site Offices (4 FTEs) and the only one not co-located with its Laboratory. Both characteristics contribute to the specific implementation of CAS at Ames Laboratory, by influencing the management and oversight approach while building upon and enhancing the historical partnership between DOE and the Contractor/Laboratory.

#### **4.3.1 Timely and appropriate communication to the contractor regarding performance expectations and accountability.**

Formal and informal communications between the Site Office and the Contractor/Laboratory (ISU and Ames Laboratory) are timely and effective, occurring through multiple channels – verbal, written and electronic, as appropriate. AMSO plays an active role in interpreting and communicating new requirements and policies to the Contractor. Additionally, AMSO and the Laboratory work together via the annual PEMP cycle to establish key performance expectations.

The AMSO is satisfied with the communication effectiveness between the partners, the level of transparency it has into the laboratory's assurance systems, and believes that when specific issues arise, ISU and Ames are very responsive and the collective team works well together in their resolution. While no electronic or web-based access is currently available, the Laboratory is responsive in providing assurance related information, thereby promoting transparency. Additionally, while AMSO is not co-located at Ames, the interactions between AMSO, ISU and Ames appear to be frequent, occurring at the appropriate levels, and adding value. The FY2011 Beryllium concern is an excellent example of this teamwork, communication, and results; as is the frequency of AMSO presence and thoroughness of space walk throughs; the communication of ALCATS status reports; and status and completion of special projects such as the removal of a large extrusion press.

Throughout the year, AMSO holds periodic reviews with ISU/Ames Laboratory regarding contract performance. Care is taken to provide early feedback regarding PEMP areas of concern; the Lab uses this feedback to hold proper dialogue, address these concerns and correct course where appropriate. For example, the Laboratory used AMSO feedback during FY2011 to ensure performance expectations were addressed prior to contract evaluation.

Sustained, effective communication between AMSO, Ames Lab and ISU has enhanced AMSO's trust and confidence in the contractor assurance system. This in turn has allowed for graded changes in their oversight approach (e.g., reduction in assessments).

#### **4.3.2 *DOE partners with the contractor and Laboratory management to implement and use the CAS outcomes to improve mission delivery.***

The Ames Partnership Commitment between ISU, Ames, and AMSO provides a strong basis for their relationship and establishes a set of core values and priorities.

This commitment was evident during the reviews. Using a graded approach, AMSO has revised its level of oversight due to its trust and engagement in the CAS. Examples include the decision against a "for-cause" Beryllium program review, due to the thoroughness and transparency of an Ames review of the same topic; the postponement of planned laser safety and chemical inventory reviews, due to Ames performance and observations made during joint walkthroughs. Transparency and provision of performance input to the Ames assessment schedule allows AMSO to provide their perspective into planned reviews and better prioritize resources based on risk and Ames Lab performance. Leveraging Ames' or external assessment results or teaming up to conduct assessments, reduces the disruption of work and provides a common understanding of performance and issues. During interviews, AMSO reported that the number

of formal assessments on Laboratory functions and activities has decreased significantly (~75%) as their confidence in the CAS has increased.

AMSO's commitment to enabling the Ames Laboratory mission is evident. They have and plan to continue to adjust this particular oversight model in order to achieve their appropriate balance.

#### **4.3.3 *Validation and verification of overall effectiveness of the CAS and providing feedback for improvement.***

As noted above, AMSO is partnering and leveraging the assessment work of the contractor in developing its own Annual Performance Plan. AMSO verifies performance outcomes, and hence the CAS, by actively participating in various activities such as all Ames space walkthroughs each year; monitoring outcomes and deliverables, including the Management Control and Management Representation letter; receipt of informal feedback from other DOE offices; and receipt of ES&H analyses and status of corrective actions. These mechanisms and others like them allow AMSO significant insight into Laboratory operations and an enhanced ability to provide feedback for improvement. As noted in Section 1.3, Improvement Considerations, the peer review team recommends that AMSO review the metrics process and associated action tracking status such that timely evaluation and the necessary follow-on discussions can allow enhanced performance.

AMSO conducts formal assessments, and as mentioned earlier, has been able to reduce the overall quantity through CAS transparency. Where required, AMSO conducts certification reviews for business systems and utilizes performance indicators, external events, and input from the laboratory to develop their assessment plan. AMSO also evaluates and scores the performance of the Contractor's assurance systems, functions and activities as part of its annual assessment as documented in PEMP Goal 4.0.

#### **4.3.4 *Value delivered by the overall Assurance System and improvement of the DOE independent assessment function***

AMSO believes that the CAS in place is adequate, functioning, and provides value. Specific value added components derived from the CAS include a stronger partnership with the contractor and the Laboratory, greater trust between the three parties, better understanding of risks and performance in areas key to accomplishment of the Lab's mission, efficient partnering on assessment activities, and more effective alignment of Site Office resources with the needs of the CAS.

The current CAS is heavily dependent on personal interactions between the partners; more formal and routine evaluation of performance indicators and risk could provide added strength.

AMSO has identified improvements to help formalize the CAS in the Site Office such as appropriate documentation of their approach to developing their annual assessment plan and

continued collaboration with both ISU and Ames Lab on facility walkthroughs and development of safety plans. These types of joint activities, with a focus on continuous improvement, will ensure the CAS matures in a proportionate manner.

## **5.0 Overall System Performance**

Following is the peer review team's assessment of the overall CAS performance. This assessment is based on the information presented above and is presented in two sections: 1) the extent to which the system is in place and key components are implemented, and 2) the effectiveness of the system as demonstrated by its performance to date.

### **5.1 Extent to Which the System is in Place and Implemented**

The overall conclusion of the peer review team is that the Ames Lab Contractor Assurance System is in place, implemented, and has a comprehensive structure that addresses all elements of the H-Clause. The team observed that leadership of ISU, AMSO and Laboratory Management is clearly working as a team, with a significant level of mutual trust and transparency, to utilize CAS as a valuable tool to enable mission execution. Many elements of the CAS have been in place for a significant amount of time and thus may require a "right-size" effort as the Ames mission and workforce grows.

### **5.2 Assessment of System Performance/Effectiveness**

Comments have been organized into three areas: 1) overall system functionality, the utility of the system components and the CAS as a whole; 2) impact, the effect the CAS is having on the overall performance of the Laboratory, the potential to influence the local oversight model, and its ability to engage the Corporate parent in meaningful ways; and 3) the learning and growth dimension, the maturity and sustainability of the CAS and its ability to continue to improve and add even greater value over time.

#### **5.2.1 Functionality**

The conclusion of the peer review team is that all essential elements of the CAS are in place and functioning as intended. The Ames Lab CAS utilizes many processes and interpersonal relationships that have been in place for a significant amount of time. As a result, most CAS functions appear to be performing as intended, given the current size, close relationship with ISU and the unique relationship with AMSO. The review team found the CAS to be adequately documented, providing benefit, and effectively used to provide reasonable assurance that performance is meeting expectations and the system of internal controls and performance feedback is adequate. The Ames CAS has two unique advantages over the typical DOE/SC Lab, specifically its size and therefore close interpersonal communication with ISU and AMSO, and their special working relationship with ISU. Planning for how these two aspects may be improved or enhanced as the Ames mission and demand for expertise grows will also help the CAS to be more sustainable over time. Finally, the process improvements put in place under the

CAS has led to clarity of roles and a stronger partnership among ISU, Ames Lab and AMSO, a strengthened trust, and also helped to sharpen the focus on assuring mission execution and the long term viability of the Lab.

### **5.2.2 Impact**

The team observed several positive impacts associated with CAS during the visit, including:

- An extremely strong relationship and clarity of roles between ISU and Ames Lab. This unique relationship allows very high levels of transparency and a more intense focus on the Science mission and quality of the outcome
- An effective oversight and performance feedback structure operated by ISU. Use of external subject matter experts provides valuable perspective on the Lab's scientific mission potential, as well as the Lab's capabilities
- Effective AMSO oversight, including partnering of resources on assessment and walkthrough activities, the use of existing performance data and products rather than requiring redundant products, and proactive feedback / communication with Ames Lab on performance
- Operational risk identification that enables the Lab to identify, prioritize, monitor and mitigate mission jeopardizing risks

The review team concluded that the CAS has strengthened the foundations of the partnership between ISU, AMSO and Ames Lab. The team believes that CAS processes and systems will grow with the Lab and that further positive impacts will be realized.

### **5.2.3 Learning and Growth**

The partners are committed to continuous improvement and maturing the CAS to enhance its effectiveness as the mission, workforce and infrastructure of Ames Lab grow. The review team observed several practices that indicate a culture of learning, growth, and improvement, including:

- The use of external subject matter experts in the ALOB
- The use of ISU resources in promoting Ames Lab's interests, including high level Congressional relationships and strategic recruiting
- Proactive identification and tracking of strategic plans, initiatives and goals, including the Scientific Strategic Plan and the annual PEMP cycle
- The use of corporate reach-back, benchmarking and peer reviews to drive improvement in Ames Lab
- Building significant transparency into the CAS, increasing understanding and trust in systems, processes, and performance outcomes

These examples suggest to the Committee that ISU, AMSO and Ames Lab are committed to external feedback as well as organizational learning and growth.

## 6.0 Concluding Summary

The observations noted in this report indicate that the key elements of the CAS are in place and functioning as intended. As the Ames Lab mission scope and workforce increases, careful consideration should be given to establishing more process-based systems that will enable correspondingly appropriate levels of transparency, communication and timely feedback. Systematic prioritization and improvement of these CAS components will enhance overall system performance and provide for long term sustainability of the CAS. In its present state, the Ames Lab CAS is delivering benefits and positive impacts, and has strengthened the foundations of the partnership among ISU, AMSO and Ames Lab.

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**Appendix A: List of Interviewees**

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## Ames Lab

Alex King, Director  
Bruce Harmon, Deputy Director  
Duane Johnson, Chief Research Officer  
Mark Murphy, COO  
Deb Covey, Assoc Dir Sponsored Research  
Tom Wessels, Manager, ESH&A  
Mark Grootveld, Manager, Facilities and Engineering Services  
Shawn Nelson, ESH&A - Safety Specialist  
Kent Hertzke, Assurance Officer  
Kevin Dennis, Scientist and Chair of Safety Review Committee  
Terry Herrman, Assistant Manager, Facilities and Engineering Services  
Diane Den Adel, Manager, Information Systems  
Bill Sears, Cyber Security Specialist  
John Clough, Manager, Accounting  
Fran Dunshee, Manager, Internal Audit  
Andrea Spiker, Manager, Procurement and Property Management  
Diane Muncrief, Manager, Human Resources  
Kerry Gibson, Assistant Manager, Public Affairs  
Ila Haugen, Manager, Budget  
Mei Hong, Chemistry Professor / NMR Laboratory  
Tom Lograsso - Program Director for DMSE  
Larry Jones - Manager, Materials Preparation Center  
Trevor Riedemann - Rare Earth production

## ISU

Gregory Geoffroy, President  
Elizabeth Hoffman, Executive Vice-President/Provost  
Sharon Quisenberry, Vice-President for Research & Economic Development  
Paul Tanaka, University Counsel  
Warren Madden, Vice-President for Business and Finance  
Pam Elliott Cain, Associate VP for Business and Finance/University Secretary and CAS POC  
Kathy Dobbs, Controller  
Kristi Darr, Associate Director Human Resources Services  
David Inyang, Director EH&S  
Paul Richmond, Assistant Director EH&S  
David Miller, Associate VP Facilities Planning and Management

## Ames Site Office

Cindy Baebler, Manager, AMSO  
Jennifer Stricker, Contracting Officer  
Michael Saar, Facility Rep

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**Appendix B: List of Documents Reviewed**

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1. <http://www.ameslab.gov/>
2. Ames Lab Key Facts
3. CAS Description rev 1
4. Ames Laboratory LOI response
5. AMSO LOI response
6. Iowa State University LOI response
7. Ames Partnership Commitment Fully Executed
8. 2011 PEMP EOY Final1
9. 2010 End of year PEMP report final 9-30-10
10. 2009FY Eval PEMP AMSO -final1
11. Ames Lab Report Card FY2010
12. Ames Mission Readiness Peer Review Final Report-July 2011
13. 2011 AMSO Oversight Plan
14. ISU Resources provided to Ames Lab
15. Iowa State Commitments Letter
16. AMES\_Scientific\_Plan\_FY10-FY14\_0
17. ALCATS doe external review fy 2011
18. trend\_analysis\_2010
19. Assessments Audits Reviews Appraisals rev1
20. Available presentations are in the Presentations folder
21. Board minutes