

EFCOG Best Practice
Contractor Assurance System (CAS) Effectiveness Validation
Lines of Inquiry (LOI)

A CAS effectiveness validation can be enhanced with consideration of the following effectiveness attributes and sub-elements. Use of these attributes and LOIs can be tailored to each contractor's specific situation.

1. **Organizational Learning:** The contractor achieves improvement in mission execution by: conducting proactive, credible, and critical assessments and analysis of performance including abnormal events; identifying and correcting issues; performing trend analysis; generating and applying lessons learned; and conducting routine performance monitoring. Improvement in mission performance and risk reduction resulting from CAS related efforts are evident.
 - a. CAS program, processes, and response to outputs are evaluated and improvements made as necessary.
 - b. Events are used to identify system-level learning opportunities.
 - c. The results of assessments are used to drive improvement (e.g., risk reduction, process efficiencies).
 - d. Management effectively sets priorities using the results of the issues management system.
 - e. Organizational trends are identified, examined, communicated, and addressed.
 - f. The contractor seeks to learn from others (operating experiences, lessons learned, benchmarking, etc.).
 - g. Assessments, management observations, performance monitoring, and other CAS processes regularly find and address significant issues internally before they become consequential events.
 - **Assessment Approach:** Interview assessment program manager, trending/lessons learned/operational experience leads, issues management system owner, Price Anderson Amendment Act (PAAA) screener/lead, management monitoring program lead, causal analysis leads, a sampling of lead assessors/auditors, and the internal audit manager. Review sample of assessments (self, management, independent, external) conducted in last 12 months.
- Evaluate planning and execution of assessment and audit programs
 - Review organizational strategy for developing annual/periodic (proactive) assessment program.
 - Is the organizational strategy for developing the annual/periodic assessment/audit/schedule/program risk based?
 - Are the plans executed according to schedule?
 - Does senior management ensure that it is comprehensive and focused appropriately?
 - Evaluate quality of assessment plans and reports (including scope, purpose, lines of inquiry, qualifications of assessors, methodology, accuracy of findings characterizations, etc.)
 - Is there evidence that data collection was performed as planned?
 - Are the lead assessors/auditors adequately qualified?
 - Are the results of the assessments/audits accurately categorized (findings, opportunity for improvement, adequate practice, noteworthy practice?)
 - Does the data support the results?

- Review use of issues management system
 - Are assessment results (e.g., findings, Opportunities for Improvement [OFIs]) are being managed through the issues management process.
 - Are assessment results are being managed through the issues management process
 - Is the significance of issues adequately defined?
 - Is a sampling of issues evaluated to ensure quality and thoroughness?
 - Based on significance determination, (a) are issues addressed with a graded approach (e.g., high significance issues require root cause analysis, extent of condition, etc.) and (b) was the causal analysis, extent of condition, etc. actually performed
 - Are the methods of causal analysis evident in reports?
 - Are causes identified beyond the direct cause level?
 - Are causal analysis activities appropriately scoped and resourced by responsible management?
 - Are causal analysis activities completed in a timely manner?
 - Based on significance determination, (a) do the actions adequately address the causal analysis and problem description and (b) were the actions robust and sustainable according to the hierarchy of controls? Approach: Sample causal analysis results to examine quality and breadth of examination.
 - Is there a clear connection between causes identified and the actions taken to correct those causes?
 - Are actions tracked through completion and verified with credible evidence?
 - Are higher-significance issues required to have an effectiveness evaluation? Are they actually performed?
 - Are those effectiveness evaluations included in the annual/periodic assessment/audit schedule?
 - Are the results of the effectiveness evaluations supported by credible evidence of effectiveness?
 - If the effectiveness evaluation results in not effective or partially effective, are new or repeat findings/OFIs reported and additional corrective actions developed?
 - Are the evaluations conducted in a timely manner?
 - Are issues periodically evaluated to ensure quality and thoroughness?
 - Are independent reviews of issues management being conducted?
 - What metrics/standards are used internally to measure health of issues management system? Have resulted from monitoring these metrics?
 - What performance information is reported to management out of the issues management system, beyond the above metrics ? (For example: Are issues related to procedural non-compliances trended? Are corrective actions related to re-training trended?)
 - What is the level of management engagement in the issues management system/process(s)?
 - How do the different levels of management, up to and including the Senior Leadership Team, use the outputs of the issues management system?
- Review trending program
 - Are key elements of performance are being trended?
 - Are the selected trending methods (e.g., statistical process control, data charts, etc.) suitable for the data selected?
 - Are adverse trends reported to management and fed into the issues management system?
 - Have actions/improvements resulted from trending results?
- Review operating experience/lessons learned program
 - What internal and external sources (trends, assessment results, events, etc.) are used in developing lessons learned?

- How are operating experiences/lessons learned distributed and used throughout the organization? Is the distribution timely and adequate?
- How are internal and external operating experience/lessons learned are used to improve work planning and control, project management, risk management and other processes?
- Are operating experience/lessons learned shared externally?

Approach:

- Review management monitoring programs.
 - How is management involved in the assessment, issues management, metrics, trending, lessons learned, abnormal event, etc. programs?
- Review structure and use of post-event learning process (fact finding, event investigation, causal analysis).
 - Is the defined process consistently followed?
 - Is there appropriate involvement by both responsible line management and independent participants?
 - Are they conducted in a manner that seeks to identify, understand, and address the entire set of contributing factors to the event?
- Examine the generation, review, and use of metrics by different levels of management. Include Mission, Environmental, Safety and Health (ESH), Operations, Business, Contract Management, etc.
- In general, how does the organization monitor the health of CAS processes?

2. Management Leadership: CAS is an integral part of management and leadership decision making, demonstrating positive effect on mission execution and sustainability of improvements. Management addresses issues and communicates actions and results in a timely manner.

- a. Senior management uses CAS to monitor performance and takes action to manage risks.
- b. Management at all levels demonstrates ownership for the application of CAS related information for their functional or mission area.
- c. Management demonstrates self-critical, candid, and objective evaluation of performance.
- d. Managers actively monitor performance where work is conducted.
- e. Managers encourage a questioning attitude, foster constructive dialogue, and ensure issue disposition at the appropriate level.
- f. Managers ensure that corrective actions effectively address the identified issues.
- g. Managers employ an appropriate risk handling strategy, when issues cannot be resolved in a timely manner.

Assessment Approach: Interview Project Manager (PM)/Laboratory Director, other members of the Leadership Team (Environmental Safety Health (ESH), Operations, Business, etc.), sample of functional managers, second tier leadership and general workforce personnel.

- Describe the CAS activities you use and participate in and what your organizations do to monitor performance in their area; ask for an example of where improvement resulted.
- Discuss how managers use CAS information.
 - Are there regular briefings, reports, trending, metrics, etc., provided to management?
 - What happens as a result of these information transfers?
 - Describe actions that have resulted from pro-active assessments, trend information, metrics, etc.
- Describe how managers, influence CAS processes and the expenditure of CAS resources, conduct CAS activities themselves, call in CAS support for their area of responsibility.

- Discuss with the senior leaders individually whether all the elements of their organization are:
 - self-critical,
 - able to make the time/resources necessary to be involved in CAS and continuous improvement (including management monitoring, causal analysis, development of corrective actions, etc.),
 - open to input from independent sources on issues within their scope,
 - willing to provide/receive input to others (including from peers and workers, and from across organizational boundaries).
- Are there a set of metrics and data/trend monitoring methods in place that provide a clear, accurate picture of performance against defined requirements and performance goals?
- Is the set of metrics and data/trending which is used to adjust operational methods and re-focus management attention?
- How does management ensure robust causal analysis is performed and the resulting, corrective actions are appropriately targeted, at the right level, to address the set of contributing factors for an issue or event; e.g., are “Quick-fixes“ avoided in favor of comprehensive system upgrades?
- How are activities appropriately resourced (with people, time, information, leadership attention and support?)
- Is there organization-wide accountability for development and timely implementation of corrective/preventive actions? Is this accountability monitored and sustained at the most senior leadership levels?
- Discuss challenges to risk-prioritized continuous improvement, including effective and comprehensive causal analysis, appropriately focused corrective actions, adoption of operating experience /lessons learned, resources, and customer expectations.

3. Employee Engagement: Workers are actively engaged in improving performance.

- a. Employees actively participate in CAS activities, although they may not describe them as such.
- b. Employees use the processes for eliciting, capturing, and addressing their suggestions, concerns, and dissenting opinions.
- c. Employees demonstrate a constructive, questioning attitude and healthy skepticism regarding safe, compliant, and effective performance.
- d. Managers and employees work together to discuss continuing improvements, recognize and resolve issues, and learn from their experiences.

Assessment Approach: Interview members of the workforce (e.g., craft safety representatives (if any), sample of front line operations and maintenance personnel, sample of field-deployed ESH personnel (e.g. Radiological Control (Radcon), Industrial Hygiene (IH), Safety), Employee Concerns Manager, Human Resources (HR) Manager, issues management system manager, Quality/CAS Manager, ESH Director.) These Lines of Inquiry (LOIs) need to be tailored to the job functions being assessed.

- What are the mechanisms by which issues raised by workers are captured and addressed?
- How are the issues evaluated?
- How are risk assessment results issues prioritized for correction?
- Are affected workers involved in fixing the issue?
- Are the resulting actions communicated back to the individual raising the issue(s)?
- Can workers cite examples where their suggestions, concerns, or involvement in a post-event response led to improvements?
- What tells you that your input is valued and acted upon?
- What do you do when you find something you didn't expect when you are performing your job?

- Tell me how improvements are made from one job to the next?
- Does your manager/supervisor ask for your ideas for improvement? How do you provide this input?
- Who can stop/pause work?
- What level of concern would cause you to stop/pause work?
- If you had an issue/concern, how comfortable would you be telling someone about it?
- If you have an idea about how to improve something, how comfortable would you be sharing that idea?
- How do you know employees are engaged?
- How do you know the effectiveness of your employee engagement?
- Is engagement driving improvements? Provide examples.
- How involved are you (employees) in making improvements to the work that you (employees) do?
- Do your managers/supervisors review and share issues/operating experience//lessons learned both internal and external to your organization?

4. Risk Informed: Risk management is a foundational element of CAS, enabling management to focus on what is important. The CAS is risk informed, with a focus on outcomes and performance optimization.

- a. CAS activities and outputs are integrated with the contractor's risk management processes.
- b. The CAS is tailored to meet the needs and unique risks of the site or activity.
- c. Assessment activities are risk-informed (likelihood and consequence), and include consideration of recent performance.
- d. Issues are categorized and addressed according to their significance.
- e. The output of CAS activities, including trends and analysis, is communicated to senior management using a graded approach that considers hazards and risks.
- f. Identified actions or opportunities for risk reduction translate into performance improvements.

Assessment Approach: Interview manager responsible for risk management, Quality/CAS Manager, assessment program manager, audit manager, compliance officer, issues management system manager, PM, ESH Director, Business Director.

- Discuss how project risks are assessed and managed.
- How are the results reported to management for action?
- How are risk assessment results used to support management decision making?
- How are levels of risk determined for CAS activities and outputs?
- How are the risk determination results determined and communicated to management?
- How are the results used to support management decision making?
- How is risk used to focus and prioritize CAS activities – assessments, metrics, trending, corrective action development, reporting, etc.?
- Do internal assessment efforts go beyond confirming compliance to consider opportunities for risk reduction, operational efficiencies, and other process improvements?
- How is a significance determination applied to identified issues to determine the appropriate expenditure of resources for corrective/mitigative action?

- What are the internal/external challenges to implementing a risk-prioritized management and continuous improvement approach?

- 5. Work Conducted by Others:** The contractor ensures CAS activities appropriately address work conducted by others (e.g., subcontractors, university or industry partners, other federal agencies).
- a. The contractor has flowed down CAS requirements to other entities conducting work, using a tailored approach.
 - b. The contractor monitors and evaluates work conducted by other entities as part of CAS.
 - c. CAS activities consider performance information from other entities conducting work.

Assessment Approach: Interview Business Director, Procurement/Acquisition Manager, Prime Contract Manager, ESH Director and subordinate Managers of field support functions (Radcon, IH, etc.), sample of Project Managers/Technical Contract Oversight personnel.

- Discuss local approach to flowing down compliance, performance, assessment, and reporting requirements to subcontractors and others working on site. Documents to review: policies, procedures, job descriptions, etc.
 - Is there a standard approach for tailoring requirements to be flowed down that is documented?
 - Describe how roles/responsibilities for those involved in managing work conducted by / with others are documented.
- Does the defined approach and its application reflect a perspective that subcontractor performance is the same as the contractor’s own performance, and that the same expectations for safety, compliance, performance, and reporting apply?
 - Provide evidence that the performance expectations for work conducted by/with others is similar to those of the contractor, i.e. sample of contracts, partner agreements, Memorandum of Understandings (MOU), etc.
 - What processes are followed when work is done by people outside of your organization?
 - How do you know those processes are followed?
 - How is the performance of people outside of your organization evaluated?
- The organization monitors and conducts oversight of the compliance and performance of other entities conducting work on site.
 - How, and how often are the contracts for outsourced functions evaluated for overall value (performance, cost schedule, scope, etc.)?
- Does the organization ensure that lessons learned from work conducted by/with others are appropriately incorporated into work strategies?
 - Provide evidence of how operational experience/lessons learned are shared with and/or flowed up from work conducted by/with others.
 - What are the communications channels set up between groups or organizations in these situations?
 - How do you know those channels are used?
 - Does the owning organization and the “Other” entity meet periodically to discuss areas that may need attention or redirection based on new knowledge from other projects?
- Discuss how subcontractors and others working on site demonstrate their accountability for regularly assessing performance and reporting injuries/events. Provide examples of

subcontractor assessment, oversight, and reporting. Describe any recent events related to subcontractor performance and the follow-up that resulted.

- What mechanisms/processes are used by entities performing work performed by/others to demonstrate performance (beyond injury/illness)? e.g., Project performance (cost/scope/schedule), Quality Assurance (QA), security, business/financial, Human Resources, all support functions).
- Provide evidence of how Assessments, Event response (issues management/causals/corrective actions), and Performance information is flowed up from work performed by/with others.
- How is the information that is provided by the work conducted by/with others used by the (prime) Contractor to drive Improvements and inform management (for decision making)? Provide evidence.
- How are Functional/Technical Representatives (Safety/Contracts/Science and Technology) prepared for / aware of CAS reporting processes and requirements?

6. Governance Engagement: Corporate governance entities are informed by CAS and constructively engage in monitoring performance information generated by CAS, and steering/supporting needed improvements.

- a. The contractor provides corporate governance with sufficient information derived from CAS to support their evaluation of contract performance.
- b. Corporate governance representatives regularly engage in constructive dialogue with the DOE customer on performance.
- c. Corporate governance monitors and evaluates contractor performance to identify opportunities where additional action is appropriate.
- d. The contractor addresses issues and recommendations received from corporate governance.

Assessment Approach: Interview Project Manager (PM), Quality/CAS Manager, Prime Contract Manager, ESH Director, Business Director, others involved in regular Board/Governance Committee interaction, or other senior management as appropriate.

- Review past two Board/Governance Committee briefing packages. Discuss how CAS outputs were used to inform these communications.
- Discuss any other “Corporate” reporting requirements that the organization regularly meets, data calls they have responded to, expectations for performance reporting/upset notifications.
- Interview at least one member of the Parent Company/Board/Governance Committee.
 - Discuss the information they receive from the site organization.
 - What are the expectations for reporting and notification?
 - Describe their interaction with the local client on organizational and CAS performance.
 - Has the Parent Company/Board/Governance Committee set the expectations that the contractor will exhibit continuous, self-critical, objective, and risk-balanced evaluation of their own mission and operational performance, and will transparently report performance breakdowns and associated mitigation strategies to the Parent Company/Board/Governance Committee in a timely manner. Provide examples.

- Describe examples of Board/Governance Committee direction/intervention/guidance provided to the PM based on CAS information, client feedback, reports or notifications. Discuss how that was received and the resulting actions.
- Are Parent Companies/Board/Governance Committees conducting reviews/assessments/assist visits? Provide examples.
- How are actions from Parent Companies/Board/Governance Committees tracked and responded to? Provide examples.
- Are Parent Companies/Board/Governance Committee feedback trended? Provide examples.
- Are actions requested by Parent Companies/Board/Governance Committees communicated with the workforce? Provide examples.
- What specific CAS performance elements are reviewed/monitored with the Parent Company/Board/Governance Committee?
- Does the Parent Company/Board/Governance Committee assess its own effectiveness and is the review independent?
- How does the Parent Company/Board/Governance Committee review milestones/mission performance?
- Ask the Project Manager (PM)/Laboratory Director to describe how performance information (positive and negative) is shared with the Parent Company/Board/Governance Committee? What is the frequency? Provide examples.
- Do the Parent Company/Board/Governance Committee monitors contractor performance for opportunities where intervention is appropriate, such as sharing of relevant lessons learned, conduct an independent assessment, support for critical improvement actions, or personnel adjustments? Provide examples.
- Do the Parent Company/Board/Governance Committee representatives seek direct two-way dialogue with the DOE customer on performance, which is then used to recommend project improvements? Provide examples.

7. Credible, Objective, and Transparent: Trust, accountability, transparency, integrity and respect are maintained through all organizational levels via increased communication and integration of CAS. The CAS effectively informs DOE oversight.

- a. The contractor communicates CAS related information to DOE in an expeditious manner.
- b. CAS related information and activities are transparent in that DOE has ready access to information.
- c. The contractor is open to feedback from DOE and acts to improve performance.
- d. DOE has confidence in the credibility and constructiveness of the contractor's CAS efforts.

Assessment Approach: Interview applicable contractor and DOE CAS personnel, (e.g. CAS Manager, Program Manager, ESH Director, Quality/CAS Manager, Prime Contract Manager, etc.). Interview local DOE individuals/managers involved in operational and business oversight. Address the following questions with all interviewees – internal and external.

- Discuss how DOE has access to CAS information – direct access, regular reports, data calls, special requests, etc. Examples would be CAS dashboards, metrics, senior management meetings, issues management systems, etc.

- Are there routine meetings between DOE and contractor CAS personnel to discuss any issues associated with meeting DOE expectations for CAS information?
- How do DOE and the contractor collaborate, as appropriate, in developing the annual assessment program schedule, ensuring effective use of resources?
- Are the results from DOE-led assessments generally consistent with the conclusions of those conducted by the contractor?
 - When deviations arise, what actions are taken to address those deviations?
- Does DOE have confidence that the contractor's CAS processes are executed credibly, issues are identified, and effective corrective actions are taken?
 - Does DOE provide feedback on CAS processes?
 - What actions are taken as a result of this feedback?
- What type of feedback does DOE provide on contractor effectiveness reviews?
 - How does the feedback get integrated into the issues management/corrective action process?
- Is the contractor perceived as finding and fixing their own problems?
 - What evidence is there?
- Is there a partnering environment between the contractor and DOE?