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SUBJECT: Safety Culture Sustainment Plan

REFERENCE: Memorandum (Distribution/J. McConnell), *Request for Safety Culture Sustainment Plans*, dated June 30, 2014

Attached is the requested Livermore Site Safety Culture Sustainment Plan. A single plan has been developed to capture both Lawrence Livermore National Laboratory and the Livermore Field Office sustainment efforts. The Plan incorporates many existing site processes key to ensuring an effective organizational culture.

If you should have any questions, please contact Pete Rodrik at (925) 423-4339.

Attachment: The Livermore Site Safety Culture Sustainability Plan

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The Livermore Site Safety Culture Sustainability Plan

1. Safety Culture Sustainability

Lawrence Livermore National Laboratory (LLNL) is a multi-discipline research and development (R&D) facility that maintains a safe working environment through implementation of its Integrated Safety Management Systems (ISMS). Safe and reliable operation of a large multi-disciplined R&D laboratory, such as LLNL, requires the diligent focus of a team of highly skilled and dedicated professionals. A key element of LLNL's safe operation – its safety culture – depends on every employee, from the Director, to the scientists in the laboratory, the crafts personnel, the health and safety field technicians, the security officers, and the contractors as well as the National Nuclear Security Administration (NNSA) Livermore Field Office (LFO) Manager and federal staff on site.

Department of Energy (DOE) Guide 450-1C, *Integrated Safety Management System Guide*, defines safety culture as “an organization's values and behaviors modeled by its leaders and internalized by its members, which serve to make safe performance of work the overriding priority to protect the workers, public, and the environment.” The strength of an organization's dedication to safe operation can be seen in its safety culture.

Consistent with these concepts, a single integrated, LLNL and LFO Safety Culture Sustainment Plan has been developed. This safety culture sustainability plan is a living document that will be reviewed and updated as needed to ensure its content remains current and accurate. The plan is designed to describe the approach at Livermore for ensuring the continued health of its safety culture through:

- Senior management commitment/ownership;
- Employee engagement, communication and awareness;
- Proactive problem identification and timely resolution; and
- Continued focus on learning and improvements.

This plan is based on an on-going holistic, objective, transparent, and safety-focused process which uses all of the information available (e.g., the corrective action program, performance trends, safety culture assessments, self-assessments, operating experience, employee concerns program, etc.) to provide an early indication of potential problems, develop effective corrective actions, and monitor the effectiveness of applied actions. The on-going evaluation of safety culture is conducted using the safety culture focus areas and attributes identified in DOE ISMS Guide 450.4-1C Attachment 10.

1.1 Senior Management Commitment/Ownership

Both LLNL and LFO management recognize the importance of building and maintaining a strong safety culture. This takes the commitment of its leaders and the dedication of every individual every day.

This plan places primary responsibility for Livermore's safety culture on its senior leadership team and is reflected in all supporting processes addressed in this plan.

Senior management commitment to ensuring a healthy safety culture is captured in the LLNL Occupational Health and Safety (OHS) policy (POL 3001 01) and demonstrated in LLNL achievement and maintenance of its site-wide third-party Occupational Health and Safety

Advisory Series (OHSAS) 18001, *Occupational Health and Safety Management System* accreditation, as well as ISMS processes.

The LFO ISMS and Organizational Mission Statement specifically identify safety as a personal commitment - from Senior Management to the worker. The Federal Employee Occupational Safety and Health Manual further reiterates this responsibility and defines how safety and health programs implement the requirements.

1.2 Employee Engagement

Both LLNL and LFO management recognize the importance of having an informed and engaged workforce in maintaining a healthy safety culture.

This is clearly stated in the LLNL Occupational Health and Safety policy which recognizes:

“Employee involvement is the cornerstone of our safety culture and is essential to the successful implementation of ISMS, ISO, OHSAS, EMS and other ES&H program elements.”

LFO programs and processes related to individual respect and differing points of view are also established. These tenets are promoted within the LFO Field Office Values, LFO Professional Code of Conduct, LFO Employee Concerns Program, and the LFO ISMS.

To support these policies, LLNL and LFO management have established numerous employee feedback processes to promote and foster employee engagement.

1.2.1 Employee Communication Forums

1.2.1.1 LLNL Grassroots Safety Committees

Various employee grassroots safety committees reside within individual LLNL organizations. These committees serve the primary purpose of promoting safety awareness within their organizations, and enhancing employee communication of issues of concern to their management.

Issues and concerns identified from these organizational grassroots safety committees flow up through the Institutional Grassroots Safety Committee (IGSC). The IGSC promotes safety awareness across the institution (e.g., host annual safety fair), and represents employee concerns to LLNL’s senior leadership (e.g., regular participants in the LLNL Senior Management ESH&Q Team meeting).

1.2.1.2 LFO Forums

LFO conducts monthly employee “All Hands” meetings that routinely include safety awareness topics as well as promoting improvement goals. In addition, the LFO Quarterly News Letter promotes safety culture related articles with a focus on key attributes and behaviors.

1.2.2 Employee Issue Identification/Feedback

1.2.2.1 “Ask the Director”

“Ask the Director” is an employee feedback function that is prominently located on the “MyLLNL” WebCenter to promote ease of access to all LLNL employees and subcontractors.

“Ask the Director” provides employees an e-mail link to communicate concerns and comments directly to the Director which are generally responded to within a week of receipt.

1.2.2.2 LLNL and DOE Ombuds Program

The LLNL Ombuds Program exists within the directorates; and provides a forum where work-related issues and concerns can be discussed in an informal, neutral, and confidential manner. The Program provides personnel trained in listening skills and problem solving; and promotes enhanced employee communication and increases management’s awareness of common concerns in the workplace. LFO facilitates locally the DOE NNSA Ombuds Program through key awareness postings and periodic visits from the Ombuds Program representatives.

1.2.2.3 B-SAFE

The LLNL B-SAFE hotline provides all LLNL employees and subcontractors a reporting process to raise safety concerns or provide feedback. All identified concerns are tracked to closure, including follow-up with those raising the concerns.

1.2.2.4 Employee Voice Ethics

The LLNL Employee Voice Ethics hotline and online are anonymous reporting processes available to all LLNL employees and subcontractors to raise concerns about potential activities of concerns or situations that pose a threat to health, safety, security or the environment or that constitute waste, fraud or abuse.

1.2.2.5 DOE Differing Professional Opinions and Employee Concerns Program

The DOE Differing Professional Opinions (DPO) process is available to all LLNL and LFO employees and subcontractors to raise concerns involving technical issues with potentially significant impact to environment, safety, and health.

The availability of the DPO process is communicated to the LFO and LLNL work force through awareness site-wide electronic Newsline articles and workforce email casts. LFO maintains a local procedure for processing site submitted DPOs.

Likewise, the DOE Employee Concerns Program is available to both LLNL and LFO employees. Posters and other awareness methods facilitate employee engagement.

The DPO process along with various other employee reporting/feedback processes (e.g., Employee Assistance Program, Ombuds, etc.) is accessible to LLNL employees and contractors through the MyLLNL Employee Center “Who Can I Talk To?” web link. The “Who Can I Talk To?” web link routes personnel through the LLNL Ethics website to electronically direct them to the DOE (energy.gov) DPO website and DOE DPO Submittal Form.

1.2.2.6 Quick ITS

The LLNL Quick ITS process is a streamlined format of the institutional Issues Tracking System (ITS) specifically designed to promote ease of entry for all LLNL employees and subcontractors to raise concerns; concerns raised are tracked to closure within the institutional issues management system.

1.3 Communication and Awareness Efforts

LLNL and LFO safety culture improvements are sustained through the use of many/varied internal communication and awareness efforts. These efforts can take various forms, but are primarily addressed through safety culture attribute awareness articles and personal safety culture messages from the Lab Director to the LLNL workforce and from the LFO Manager to the federal workforce. Both the awareness articles and the Senior Manager messages to LLNL and LFO employees are transmitted using the site-wide electronic Newsline news service and other electronic forums.

A Director's column archive is housed on the MyLLNL WebCenter that includes the set of previously posted Newsline Director's columns. Employees are actively encouraged to provide feedback on each of the electronically posted Director's columns. Employee comments are electronically captured under each posted column in a blog-type format. Additionally, LLNL employs various social media tools to promote communication between LLNL employees and senior management (e.g., Lab Book blog, Director's Twitter account).

Awareness is also sustained through the use of periodic safety culture posters displayed throughout the Lab's work locations. These posters are designed to promote a better understanding of specific safety culture focus areas and attributes. Additionally, safety culture is integrated into the all employee-required annual ES&H refresher training.

1.4 Continuous Learning/Problem Identification and Resolution

LLNL uses a safety culture monitoring process to promote continuous learning through the early identification of safety culture problems and their timely resolution. DOE NNSA inputs are integrated into the safety culture monitoring process.

1.4.1 Safety Culture Monitoring Process

Consistent with the industry approach, primary responsibility for evaluating and addressing safety culture issues resides with LLNL line management, and in particular, on the LLNL's senior leadership team.

LLNL has established a safety culture monitoring process to provide an objective, transparent and safety-focused method, which uses all of the information available (e.g., performance trends, inspections, safety culture assessments, self-assessments, audits, operating experience, employee concerns program, etc.) to provide LLNL senior management with an early indication of potential cultural problems, and a means to develop effective corrective actions and monitor the effectiveness of the actions.

Safety culture aspects of workplace conditions can be trended to provide an indication to LLNL managers of how to determine if cultural issues contributed to the condition. Process weaknesses, discovered through audits, self-assessments, inspections, etc., can also provide

symptoms of safety cultural problems. Similarly, the attitudes and behaviors of site personnel can be assessed through safety culture assessments (surveys, interviews, and behavioral observations). The LLNL leadership team employs all of these tools and takes effective action when necessary.

1.4.1.1 Safety Culture Monitoring Process Elements

The LLNL safety culture monitoring process is shown in Figure 1 and comprises nine distinct process elements.

1. Process Inputs
2. Issues and Corrective Action Management
3. Other Input Sources
4. Operations Excellence Council
5. Senior Management ESH&Q Team
6. Site Response
7. Communications
8. External Input
9. DOE/NNSA Oversight

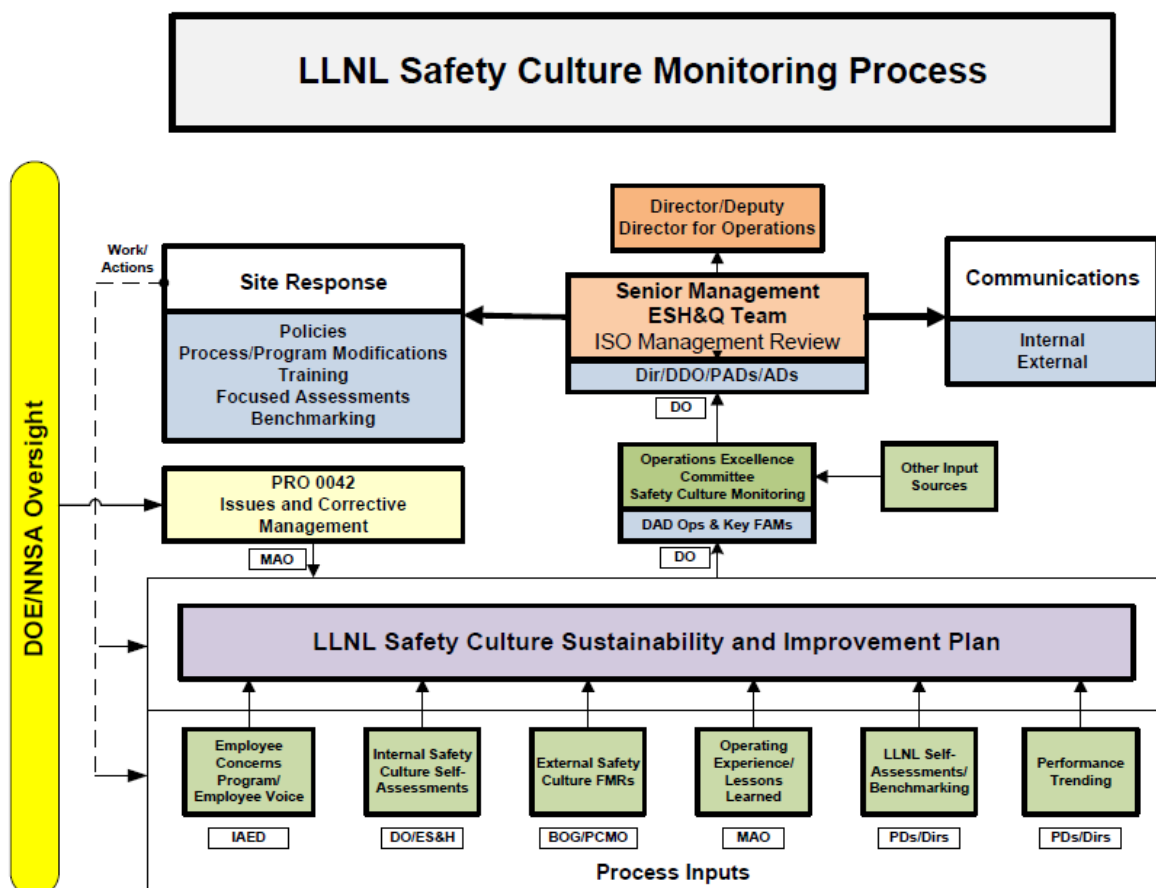


Figure 1. LLNL Safety Culture Monitoring Process

1.4.1.1.1 Process Inputs

The following are the process inputs to the LLNL safety culture sustainability process. For each specific input, data (e.g., deficiencies, observations, or weaknesses) is reviewed to determine whether there is a safety culture issue.

The DOE Guide 450-1C, *Integrated Safety Management System Guide Attachment 10*, describes the essential focus areas and attributes of a healthy safety culture. They provide the framework for evaluating and categorizing the data, and in combination, are used to identify potential safety cultural issues needing action.

As a working member of the Operations Excellence Council (OEC), each process input has an owner identified who has input to the SMT. The process owner's responsibilities include evaluating their input data against the DOE ISMS Guide focus areas and attributes and reporting their results as OEC safety culture monitoring input into the Senior Management ESH&Q Team (SMT) International Standards Organization (ISO) 14001, 9001 and OHSAS 18001 management review process.

Employee Concerns Program/LLNL Employee Voice Program

The Employee Concerns and Employee Voice programs provide safety conscious work environment input. These processes provide alternative paths for all employees and supplemental workers to express their safety and/or quality concerns in the event that an individual is not comfortable with, or is unable to successfully resolve safety or quality concerns using the other avenues available to them.

Confidentiality is an important element of the Employee Concerns Program (ECP). Although it may not always be appropriate to share specific details related to concerns, at a minimum, any trends with respect to the type of issues brought into the ECP, or the increased use of the ECP by specific workgroups may be considered by the OEC and identified to the SMT.

Internal Safety Culture Self-Assessment

Using DOE ISMS Guide guidelines, LLNL conducts self-assessments of its safety culture every two years. The findings of the safety culture assessment have the potential for identifying site-wide or organization-specific areas needing senior management attention. Actions identified to address the results of the internal safety culture assessment are managed in a Safety Culture Improvement Plan, and when appropriate in the institutional ITS.

The OEC reviews the assessment-identified areas of concern and provides a status on corrective actions to address identified issues as input to the SMT ISO management review.

External Safety Culture Functional Management Reviews

LLNL uses data obtained from external independent Functional Management Reviews (FMRs) to identify issues needed to improve procedures and processes and to avoid future problems. Information from FMRs is also a potential source for identifying safety culture issues. FMRs data is evaluated for potential safety culture trends by the OEC as part of its bi-annual safety culture monitoring reviews and provide any identified trend information to the SMT.

The insights from the FMRs provide independent input on LLNL or its organization's safety focus.

Operating Experience

LLNL uses data obtained from recent LLNL events and previously identified deficiencies (such as operations, design, and equipment) to improve procedures and processes and to avoid future problems. Information from Operating Experience (OE) is a potential source for identifying safety culture issues. When appropriate, OE data will be evaluated for potential safety culture trends by the OEC as part of its bi-annual safety culture monitoring reviews and provide any identified trend information to the SMT.

LLNL Self-Assessment/Benchmarking/Behavioral Work Observations Processes

LLNL's variety of self-reviews provides a valuable source of data. These include scheduled periodic assessments and inspections ranging from programmatic cross-organizational institutional Internal Independent Assessments and Joint Line Management Functional Area Management Assessments, to inter-organizational principle and associate directorate focused management self-assessments, to field management work observations and inspections that include baseline inspections of facilities and processes, event follow-up, etc. An additional source of inputs is derived from benchmarking efforts of other DOE NNSA site processes.

The OEC will review insights from these processes and provide that information to the SMT.

Performance Trends

Areas that can provide indication of the site's safety focus include human performance and equipment reliability indicators. Similarly, equipment reliability is often monitored in unique ways that can include equipment failure clocks, system availability and reliability, and trends in consequential equipment failures. Variations in these indicators signal changes that the organization must respond to and such responses can provide key safety culture insights.

Performance metrics associated with the challenges that the workers must face to run an activity can provide useful safety culture insights. Operator burden and work-arounds, workplace deficiencies, backlogs of procedures, and similar areas provide insight into the organization's focus.

1.4.2 Issues and Corrective Action Management

Each of the process input owners will use the LLNL ITS to identify potential safety culture issues in their areas. In addition, the ITS is be used to identify trends across the entire data set of the issues identified within the system, for example, by using key words. The data from root cause determinations and apparent cause coding is also used to provide insights into potential safety culture issues and trends.

1.4.3 Other Inputs

There may be additional inputs that come directly to the attention of LLNL senior management, such as allegations or other sensitive information, which are not appropriate to be handled

through the LLNL ITS process, but are important in evaluating safety culture. Additionally, inputs may be provided from other institutional committees and feedback processes (e.g., Human Performance Improvement Committee, Ombuds program or the Institutional Grass-roots Safety Committee).

1.4.4 Operations Excellence Council

The OEC monitors key process inputs most indicative of the health of the LLNL's safety culture to identify potential concerns in the work environment that merit additional attention by LLNL.

The OEC comprises only senior-level managers (necessary to protect personal information confidentiality) with broad, diverse backgrounds in managing LLNL work activities. Members have responsibilities for the process inputs (e.g., corrective action program, employee concerns, self-assessments, regulatory compliance, etc.) The OEC, through its chairperson, reports directly to the Lab Director. The OEC has two major safety culture monitoring functions:

- Reviewing emergent issues or trends that could impact safety culture health to ensure the issues are appropriately addressed, and
- Preparing safety culture monitoring input into the bi-annual management review report to the SMT on trends or potential issues in the process inputs that could be early indications of a safety culture problem.

The OEC ensures that emergent issues or trends with the potential to impact the site safety culture health are brought to the attention of the Lab Deputy Director. These could include externally- or internally-generated issues that indicate dissatisfaction with the site's safety focus, responsiveness to issues, effectiveness of the corrective action program, or treatment of personnel. Emergent trends that arise in process indicators will be made known to the Lab Deputy Director.

The OEC does not perform investigations but reinforces line ownership for sound implementation of the corrective action process wherever possible.

The OEC also reviews the progress in the LLNL ITS for previously identified safety culture issues, whether internally identified, or identified in external reports, including inspection reports, safety culture assessments, etc. The identified weaknesses are reported through the Senior Management ESH&Q Team ISO Management Review process using the focus areas and attributes identified in the DOE Guide 450.4-1C Attachment 10. The safety culture management review report content includes the scope of the process inputs reviewed, specific trends of the process inputs over time, any adverse safety culture impacts identified, the organizations involved, and actions being taken to mitigate or address the impacts.

1.4.5 Senior Management ESH&Q Team

The SMT comprises the most-senior management personnel charged with the safe operation of LLNL work activities.

The SMT is responsible for reviewing LLNL overall performance and taking an institutional view of all of the potential indications of safety culture. The team is guided by the DOE ISMS Guide 450.4 1-C Attachment 10 focus areas and attributes. The team addresses the subtle issues gleaned from the variety of process inputs described above, as well as specific items identified through ECP and safety culture surveys and assessments. The SMT receives periodic reports from the OEC's safety culture monitoring reviews and acts on issues which the OEC believes

warrants immediate attention. While maintaining an ongoing sensitivity to safety culture issues, the SMT meets semi-annually to discuss and evaluate cultural issues.

1.4.6 Site Response

The SMT determines what actions are necessary to address identified safety culture issues. In addition, the team evaluates the effectiveness of prior actions and redirects these actions if necessary. Site Response actions might include: changes in policies, process/program modifications, training, additional or more independent assessments, benchmarking, etc. The Site Responses provide feedback into the process inputs and into the ITS and/or site improvement plan.

1.4.7 Communication

The SMT is responsible for ensuring there is appropriate communication of its conclusions and actions to address identified safety culture issues. This communication can be internal to the workforce or if appropriate, corporate, and external, if appropriate, to the public.

1.4.8 DOE NNSA Oversight

The DOE NNSA serves a regulatory and oversight function through its baseline and supplemental inspections/assessments. It also retains traditional enforcement of the allegation and chilling effect processes in accordance with 10 Code of Federal Regulations 708, *DOE Contractor Employee Protection Program*.

Onsite NNSA LFO personnel periodically assess key aspects of LLNL operations, including the processes used to identify and resolve issues. If an assessment finding identifies that the deficiency may have been caused by a safety culture attribute, this will provide additional data for the OEC to examine. Recurring violations in the same safety culture area will receive careful review by the OEC to determine if other process inputs are signaling problems in the same area. The results of the problem identification and resolution evaluation will also provide valuable input to the OEC's assessments.

The insights from the LFO provide another independent input to the SMT on the organization's safety. The monthly LLNL Management Performance Review meeting provides an on-going forum for open exchange between LFO and LLNL senior management.

1.5 Continuous Learning/Problem Identification and Resolution – LFO

LFO also uses a safety culture monitoring process, as shown in Figure 2, to promote continuous learning and early identification of safety culture issues and their timely resolution. The process consists of the following key elements:

- Senior Team Quality Management Council (QMC)
- Site Response
- Process Inputs
- Issues and Corrective Action Management
- Communications
- DOE/NNSA Oversight and External Input

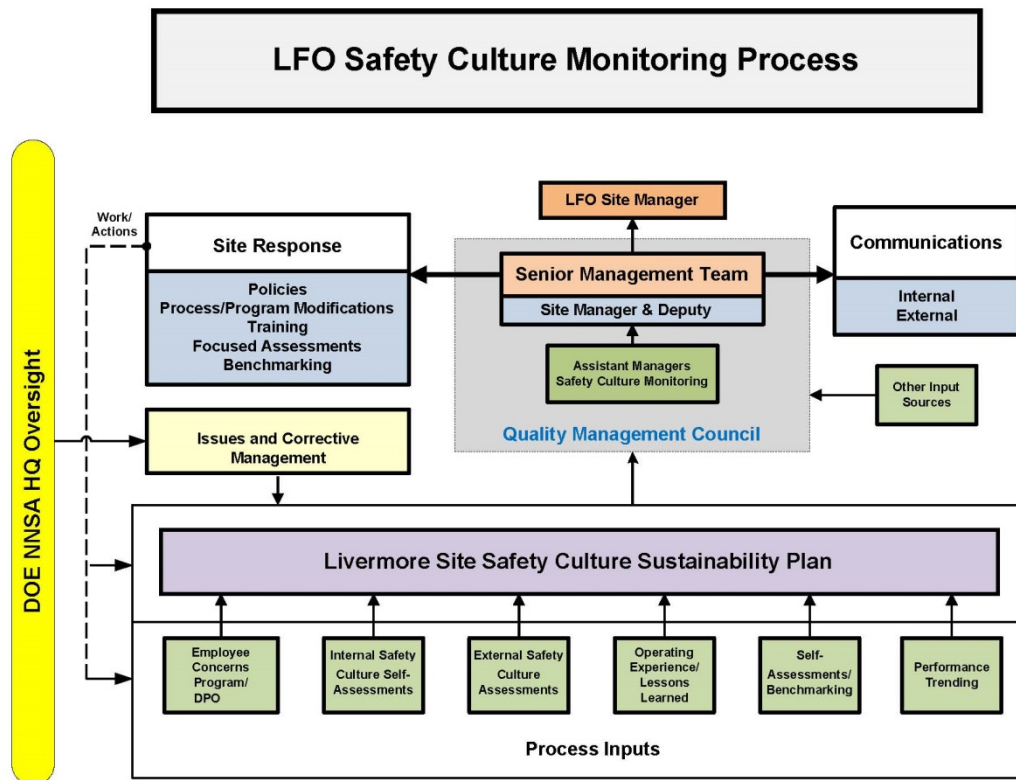


Figure 2. LFO Safety Culture Monitoring Process

LFO Quality Management Council and Communications

The LFO Quality Management Council (QMC) charter is to (1) streamline and integrate the site office's management systems in meeting NNSA's expectations and requirements; (2) ensure effective and efficient use of Federal resources; and (3) identify and authorize Project Teams to improve work processes and products.

Membership:

- Site Manager Chair
- Deputy Manager Member
- Assistant Managers Members
- Site Counsel Ad hoc Member
- Chief of Staff Ad hoc Member
- Senior Technical Advisor Ad hoc Member

The QMC guiding principles align with safety culture attributes and are designed to (1) achieve LFO corporate agreement on initiatives and strategic matters; (2) embody the LFO values, empower staff, and ensure broad communication of its improvement initiatives; and (3) ensure that the LFO oversight programs are comprehensive and integrated for all aspects of operations essential to mission success. The QMC chartered to evaluate LFO performance information and ensure the LFO Senior Team is maintaining a healthy organizational culture.

The QMC evaluates, on a monthly basis, process inputs including LFO internal self-assessments, external assessments of LFO, as well as LFO oversight assessments of LLNL including those associated with safety culture. The QMC approves a monthly Periodic Issues Report that formally transmits oversight issues to LLNL for evaluation and action as discussed in Section 1.4 above. In addition, the QMC will establish and assign LFO action owners for LFO internal issues. Issues involving safety culture are addressed by these established processes.

Process Inputs, Safety Culture Assessments, and Issues Management

Using the DOE ISMS Guide and various industry tools, NNSA LFO will conduct periodic assessments of its safety culture. LFO will integrate assessment activities with LLNL or NNSA HQ periodic efforts, such as follow-up surveys, to ensure effective use of resources. Future assessments will be scheduled as part of the Master Assessment Plan Master Assessment Schedule process. Findings from the assessments will be addressed through follow-on improvement initiatives. The LFO QMC (discussed above) is the forum for the LFO Senior Team to evaluate the need for and establish such improvement initiatives. For example, the LFO QMC has implemented organizational communication improvements as a result of the FY13 SCWE safety culture assessment.

In addition, the LFO QMC evaluates additional process inputs, as previously discussed in prior sections of this plan, including employee concerns, DPOs, and operating experience. In some cases, process and other inputs may be of a confidential nature and accessibility to certain information will be limited to only authorized and appropriate individuals.

LFO Site Response

The LFO QMC determines what actions are necessary to address identified safety culture issues. In addition, the QMC evaluates the effectiveness of prior actions and redirects these actions if necessary. Actions might include: changes in policies, process/program modifications, training, additional or more independent assessments, benchmarking, etc.

1.6 Transition to a Common LLNL/LFO Assessment and Issues Management Process

LFO and LLNL are in the process of transitioning to a common assessment and issues management process. Existing LLNL processes will be used with some modifications to accommodate integration with LFO needs. This effort will enable improved transparency and efficiency when coordinating site assessment activities and evaluating site performance information for needed action. As discussed in Section 1.4, these processes will be used towards evaluating performance, trending, and tracking improvements including those that are relatable to safety culture.