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|  |  | Number: EA OLOI 30-01 Revision: (Rev. 0) Effective Date: October 21, 2016 |
| Disciplined Operations - Good Practices Study in Organizational Change Objectives and Lines of Inquiry | | |
| Authorization and Approval |  Director, Office of Environment, Safety and Health Assessments 10/14/16 |  Deputy Director, Office of Environment, Safety and Health Assessments Date: 10/14/16 |

1.0 PURPOSE

The mission of the U.S. Department of Energy (DOE) Office of Environment, Safety and Health Assessments (EA-30) is to conduct evaluations of safety and emergency management systems and practices used by line and contractor organizations and to provide clear, concise, rigorous, and independent evaluation reports of performance in protecting workers, the public, and the environment from the hazards associated with DOE activities.

One form of evaluation or analysis utilized by EA-30 is a study of an activity, event, or situation. The fundamental question of this study is: *How does the organization respond to, analyze, and resolve operational occurrences to preclude recurrence or develop organizational resilience to lessen consequences of similar events?* To answer this question the study will focus on analyzing a site's organizational changes made in response to a significant event or a combination of concerns identified over time. The study will use objectives and lines of inquiry (OLOI) in place of a Criteria and Review Approach Document as the model for binning information gathered through interviews, focus groups, and observations. The ultimate goal of the study is to identify candidate practices that might offer beneficial insights or approaches to other organizations in DOE. Once candidate practices are identified they can be compared with results from Disciplined Operations studies at other DOE multiple sites and principles recognized by commercial nuclear and high hazard industries to designate some of the candidate practices as a confirmed good practice for the DOE complex.

The current revision of EA's OLOI's are available at <http://www.energy.gov/ea/criteria-and-review-approach-documents>.

2.0 APPLICABILITY

The following OLOI is approved for use by all EA-30 Studies.

3.0 FEEDBACK

Comments and suggestions for improvements on this OLOI can be directed to the Director, Office of Environment, Safety and Health Assessments, at (301) 903-5392.

4.0 OBJECTIVES AND LINES OF INQUIRY

The Study approach is not an effectiveness review since the goal is to identify candidate good practices that may be suitable for designation as a DOE complex good practice. The Study focuses on the analysis of the implementation of organizational changes as a result of a significant event, or combination of concerns, and the study utilizes the following objectives to bin the information from data collection. Following binning of the data to the appropriate objective, the success factors contained in Appendix A are utilized to further evaluate the information and identification of promising practices that are candidates for designation as an eventual good practice.

OBJECTIVES AND LINES OF INQUIRY

DO.1: Obtain background information to characterize the context of the operation issues selected for examination. (Note that the goal of this information collection is to capture the types of info that would be necessary to design a case study for each site/facility and then be rolled up into a collective case study.)

Information to be obtained includes:

- Facilities/operations involved
- Issues identified, dates
- Prior history of formality of operations concerns at facilities/operations
- Dates of contract award/contract renewal
- Organizational/safety culture factors

Lines of Inquiry:

- What was done to familiarize the management team about facility/operations operational practices upon assumption of contract? Does management have a historical context?
- When was the site's culture last assessed (culture assessment or survey) & results?
- Were actions were put in place to address any cultural challenges? Current status?
- Does the site have a Safety Culture review board or similar group? (For the purpose of rolling up issues to look at the aggregate impacts or aggregate contributors of what might otherwise be looked at as unrelated events.)
- Have there been any Safety Conscious Work Environment (SCWE) issues at the site?
- How are SCWE issues handled?
- How do employees view leadership?
- What do the employees believe or feel is the current status of the culture towards safety at the site?
- Are site activities driven by "Do it right the first time" or by schedule and budget.

- How is successful work identified & recognized?
- Are employees engaged?
- Are leadership values driven by words and actions – Does this provide evidence that leadership in safety is an organizational focus?
- What are the reward systems for the organization & management?
- What incentives positive or negative apply to focusing on how work is done compared to the results of the work?

DO. 2: Review how performance anomalies/declines were (are) identified

Lines of Inquiry:

- What drew attention to the condition; an event, one or more reportable occurrences, trend over time?
- When and how did senior management become aware of the condition?
- How was the occurrence(s) reported; employee report, management observations, self-identified, DOE local identified, Oversight identified?
- Had there been prior, similar instances?
- Was a work pause involved; was work continued?
- Were interim measures initiated (procedure modification, independent verification, re-work)?
- How was the situation(s) communicated to the organization and to DOE?
- Did performance declines/deficiencies lead to adverse outcomes; safety, mission, financial?

DO.3: Review how performance declines were analyzed

Lines of Inquiry:

- Was a post-job brief conducted?
- Was a critique held?
- Was a causal analysis performed (what types and who was involved)?
- What requirements were associated with the performance issues?
- Did the organization possess the necessary skills & knowledge to access the problem?
- Did management determine that available knowledge was adequate to fully characterize the situation (ORPS, prior reports, etc.) or was new knowledge needed in the form of new assessment(s), training in change control, etc.?
- Did DOE conduct a separate analysis?
- What were the principal causal/contributing factors identified?
- How and to whom were the analysis and conclusions briefed?
- Did the analysis examine procedure change histories to consider issues of procedure over-specification?
- What was the eventual formulation of the problem(s)/opportunity(s) to be addressed?
- What was the process for formulating the problem(s)/opportunity(s) and who was involved?

DO.4: Review how improvement interventions were established

Lines of Inquiry:

- What was the process for identifying interventions to assure they address the causal/contributing factors?
- What was the role of employees in identifying interventions?
- Was stakeholder input sought/considered?
- Were the causal factors correlated to align with the targeted interventions? (e.g., stream analysis)?

- Did the proposed interventions address the totality of the causal factors/influences identified in the problem formulation?
- What was the role of DOE in identifying/validating interventions?
- Were ‘best practices’ considered and incorporated into interventions (e.g. reference EA SSO HPI tools like procedural checklists, post job briefings, etc. – or best practices identified by EFCOG – note NAS 2012 report discussion of Investment/Value Framework Managing for High-Quality Science and Engineering at the NNSA National Security Laboratories)?

DO.5: Review how improvement interventions were designed

Lines of Inquiry:

- Was a formal model used to design the interventions? (Lean, 6 sigma, instructional systems design model [ISDM or ADDIE], expert group, ISM mapping)?
- Who was involved in the change design, and what were the roles of the respective parties?
- What organizational groups and process interfaces were addressed in the design concept (organizational level, process level, job level -- e.g. related organizational processes such as training, procedures, equipment/facility modifications, etc.)?
- What assumptions were made about acceptance and support among various employee groups, about unanticipated threats to employee cultural norms and job satisfaction? What was done as a consequence of these assumption analyses?
- Was a risk assessment done to address unintended/unanticipated adverse effects of changes proposed?
- Did risk assessment also examine areas of organizational resistance to change (aka ‘barriers’) and formulate strategies for addressing such potential resistance? If so, was resistance characterized as a negative area to be overcome, or as a potentially positive area to be understood to reveal factors that could be used to establish sustainability?

DO.6: Review how improvement interventions were implemented

Lines of Inquiry:

- Was a formal change control program/process used (Rummler Nine Boxes, Kotter, Lewin, collective experience, etc.)?
- Were improvement interventions implemented iteratively or simultaneously?
- Was there an executive/management champion for the change process?
- Was there a change team; how were they selected and trained (if applicable)?
- Was there a formal change plan with a formal communication plan for the change?
- How were all relevant employee groups (engineers, maintenance, job planners, etc.) identified and engaged?
- Were modifications made to the original intervention/implementation design and why were they made?
- What metrics were used to monitor implementation success?

DO.7: Ascertain perspectives on the current status of implementation, effectiveness and potential for sustainability. Perspective sampling should include a stratified view from a variety of job groups including management and individual contributors.

Lines of Inquiry:

- What is the status of intervention implementation (completed, in process, etc.)?
- How well is/are the improvement interventions working?
- What are the measures for effectiveness?

- During the implementation process, have any unanticipated consequences (positive or negative) emerged?
- Will the intervention(s) achieved the desired goals, and will they be sustained (why was the intervention(s) flawed or successful)?

DO.8: Inquire about lessons learned as a result of the improvement activities

Lines of Inquiry:

- What has (or should) the organization have learned as a result of the occurrence and improvement process?
- What worked as envisioned?
- What did not work as envisioned, and why?
- What are the implications of this improvement experience for aspects of the organization (facilities/experiments/projects)?
- Was the change management experience chronicled in formal documented knowledge (learning histories, project reports, etc.); has the knowledge accumulated been documented in program, process, procedure changes, captured in training, etc.?
- Does the organization perceive that problem solving and improvement are learning processes, and (as in the nuclear industry) that learning is a core “deliverable” as well as an end product?

REVIEW APPROACH

Record Review:

- Description of event(s) leading to organizational changes
- Recovery plan(s)
- Corrective action plan for event(s)
- Document revisions as a result of event(s)
- Training materials prepared as a result of the event(s)

Interviews:

- General management
- Operations management
- Safety management
- Facility management
- Maintenance management

Focus Groups:

- Facility safety
- Operations personnel
- Maintenance personnel
- Engineering personnel
- General support personnel

Observations (non-mandatory):

- Personnel training as a result of event(s)
- TSR surveillance activities
- Walk-through of operating procedures implementing controls
- Review of activities in support organizations; e.g., Maintenance, etc.

Appendix A
Success Factors for Organizational Change Management

Study Question:

How does the organization respond to, analyze, and resolve operational occurrences to preclude recurrence or develop organizational resilience to lessen consequences of similar events?

Success Factors:

- Change is undertaken as a strategic effort
- A contingent change process is employed
- A distinction is made between problem formulation and problem solving
- Problem formulation is comprehensive
- Heterogeneous teams are used for problem formulation and problem solving
- Structured processes are used for problem formulation and problem solving
- Relevant stakeholders are involved in the problem solving process
- Problem solving and improvement are understood as learning processes