QAM 12010: FERMILAB LESSONS LEARNED PROGRAM AND PROCEDURES

Revision History

Author	Description of Change	Revision Date
Dave Baird	• Revised chapter to reflect the integration of OPEXShare Lessons Learned (LL) and Best Practices (BP) Database System. • Modified the Roles and Responsibilities to have topic area Subject Matter Experts (SMEs) collect, review and disseminate LL and BP specific to their area of expertise. • Standardizes the lessons learned program across laboratory operations and projects. • Added LL/BP Flow Diagram • Added reference to iTrack as the repository for lessons learned.	August 2019
T.J. Sarlina	• Removed reference to "Operating Experience Program", this is now Fermilab's Lessons Learned Program. • Removed reference to iTrack as lessons learned are not entered into iTrack.	January 2016
Rafael Coll	QAM 12010 is a new chapter that incorporates OQBP Procedure #3903 into the Quality Assurance Manual.	July 2013

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1.0 INTRODUCTION

Instituting a process to capture, evaluate, and implement lessons learned, enables both Projects and operations to effectively evaluate past experiences and determine what is needed to promote desirable outcomes, prevent unwanted outcomes and repeated mistakes, and minimize the impact of the consequences to unwanted outcomes.

This chapter establishes the responsibilities and actions required to process and communicate lessons learned both at Fermilab, Fermilab leased spaces, other Department of Energy (DOE) locations, as well as other sources. This chapter is applicable to all products, services, processes, management systems, and Projects at Fermilab.

2.0 DEFINITIONS

Actions - Actions taken as a result of lessons learned. Examples are:
  (1) Corrective actions in response to occurrence analysis
  (2) Preventive actions to preclude the recurrence of a negative event
  (3) Improvement actions based on best practices or innovative approaches

Best Practice (BP) - A positive example of a work process or innovative approach with the potential to be the basis for significant operational improvements or cost savings.

Lesson Learned (LL) - A best practice that is captured and shared to promote repeat application or an adverse work practice or experience that is captured and shared to prevent recurrence.

Subject Matter Expert (SME) - An individual with qualifications and experience in a particular field or work process; an individual who by education, training, and/or experience is a recognized expert on a particular subject, topic, or system. See Appendix 1 for the list of Fermilab SMEs Groups.

3.0 RESPONSIBILITIES

3.1 Laboratory Director
  • Sets policy, expectations, and provides the institutional authority for the Lessons Learned program.
  • Provides feedback on the implementation of improvements to the program.

3.2 Quality Section Head
  • Responsible for the development, implementation, assessment, and improvement of the Lessons Learned Program.
  • Coordinates all substantive changes to the Lessons Learned Program. Provides support to senior managers and Management System Owners.
  • Appoints the Lessons Learned Program Coordinator.
  • Ensures computer-based systems provide access to lessons learned information.

3.3 Lessons Learned Program Coordinator (LLPC)

- Determines the suitability of internally generated LL for distribution to the DOE and OPEXShare LL Databases.
- Sends internally generated LL lab subject matter experts desire to distribute to the DOE and OPEXShare to the Legal Office and the Office of the Chief Operating Officer (OCOO) for distribution concurrence.
- Uploads internal lessons to the DOE and OPEXShare LL Databases as authorized by the Legal Office and the OCOO.
- Acts as the FNAL point-of-contact for the DOE Corporate Operating Experience Program and the DOE Operating Experience Committee.
- Monitors Fermilab LL database and iTrack for entries, activities, and use.

3.4 Division/Section Heads, Management Systems Owners (MSO), and Project Directors/Managers

- Provide the necessary resources to implement this process in their areas of responsibility.
- Incorporate lessons learned into organizational activities and processes.
- Address iTrack items to which their organizations or areas have been assigned that emanate from a Lessons Learned.

3.5 Subject Matter Experts (SMEs) – See Appendix 7.1 for SME list

- Screens externally (i.e., OPEXShare, other DOE laboratories) and internally (i.e., iTrack, Human Performance Improvement (HPI) Review reports, historical Projects Lessons Learned database, etc.) generated lessons learned to identify topics relevant to the organization.
- Disseminates lessons learned summaries to the organization via Laboratory Chiefs, Management Systems Owners, Division/Section Heads, or Project Managers and Engineers for review, analysis, implementation of actions, and routine use, as applicable.
- Enter lessons learned that will be disseminated into the Lessons Learned Database for future reference.

3.6 All Fermilab Staff

- Line Management and their staff:
  - Proactively utilize the Lessons Learned Database to search for lessons learned prior, but not limited to, the following activities:
    - Design Reviews and Technical Reviews
    - New process development
    - Process/Procedure changes/improvements
    - Work Planning
  - Proactively identify lessons learned from the inputs listed in Section 4.1.
    - Submit their lessons learned to the SME for determination of entry into the Lessons Learned Database.
  - Address iTrack items to which they have been assigned that emanate from a Lessons Learned.

4.0 PROCEDURE

Lessons Learned can be received from external sources or generated internally. In some cases, internally generated lessons are appropriate to share outside of the laboratory with concurrence from the Chief Safety Officer and the Chief Operating Officer. The steps involved in each process are explained here and captured in the process flow diagram in Appendix 2 below.

4.1 Subject Matter Experts
- Gather Lessons Learned inputs. These could include:
  - Best Practices
  - Safety Incidents/Near Misses
  - Prevention through Design Implementation
  - Cost Savings
  - Nonconformances or Opportunities for Improvement
  - Issues, opportunities, and lessons learned from other Divisions/Sections, Management Systems or Projects
  - Process Breakdowns/Gaps
  - Formal Reviews
  - Internal Reviews
  - Assessment/Effectiveness Reviews
  - Nonconformances at Partners/Vendors/Subcontractors
  - Other various events including but not limited to:
    - New work task
    - Challenging projects
    - Implementation of new process or equipment
- Perform Lessons Learned Criteria Screening (Appendix 3 below) and Benefit Analysis (Appendix 4 below) of the Lessons Learned.
- Decide if Lessons Learned will be incorporated into the Division/Section, Management System, or Project.
- Document & Disseminate utilizing iTrack.
- Create implementation plan.
- Track corrective and preventive actions in iTrack
- Perform effectiveness reviews as directed by iTrack.

4.2 Lessons Learned Receipt
The SMEs shall review all Lessons Learned from both internal Fermilab sources and external sources.
- For externally generated Lessons Learned, an email is sent from the OPEXShare Lessons Learned Database to the Fermilab SME for review. Lessons Learned shared from other DOE laboratories or external working groups (e.g. EFCOG) shall also be captured and shared per this procedure.

- For internally generated Lesson Learned, the SME reviews iTrack monthly.

4.3 Lessons Learned Screening for applicability of externally and internally generated LL
The SME determines the applicability to Fermilab operating activities and processes based on the guidelines in Appendix 3 and Appendix 4 below. Topics for lessons learned may include, but are not limited to: design, documentation, resources, engineering, transportation, quality, training, mission, science, public safety, worker safety and health, project management,

construction, environmental protection, facility operations, compliance, management and administration, financial, public interest, information technology, and security and safeguards.

If determined to be applicable, the SME <u>enters and attaches Lessons Learned/Best Practice into iTrack and places under the Lessons Learned Review Category</u>.

- Enters corrective action(s)/preventive action(s)
  - o Sends Lessons Learned as information only (minimal response) to applicable Fermilab staff.
  - o Assigns corrective action(s)/preventive action(s) for follow-up.

4.4 External Communication
- The LLPC reviews iTrack monthly to identify and screen new internally generated lessons. The LLPC determines the applicability of these lessons to other DOE organizations.
- If the LLPC determines the lesson is not applicable outside Fermilab, then no further processing is necessary.
- If the LLPC deems the lesson to be applicable to other DOE organizations, then the LLPC forwards the lesson to the Legal Office and OCOO for review and approval prior to uploading to the DOE system.
- After review and approval by the Legal Office and OCOO, the LLPC enters Fermilab lessons learned information into the OPEXShare Lessons Learned Database. The lesson is then distributed by the DOE via email.
- All communications relative to external lessons received by Fermilab must be done by the Fermilab LLPC.

Note: Direct communications between a lesson user and the lesson contact may be made for obtaining clarifying information relative to the lesson only.

5.0 RECORDS

5.1 Records of Internal LLs
Records of applicable internal lessons are contained in the <u>Fermilab Lessons Learned Database</u> prior to March 2019; and in <u>iTrack</u> after March 2019.

5.2 Records of External LLs
Records of applicable external lessons are contained in the <u>Fermilab Lessons Learned Database prior to March 2019</u> and in <u>iTrack</u> after March 2019.

5.3 Review Cycle
This procedure shall be reviewed in accordance with FESHM 1050 - Environment, Safety and Health Manual Procedures.

6.0 REFERENCES

[DOE O 413.3B Chg 5 (MinChg), Program and Project Management for the Acquisition of Capital Assets](#)

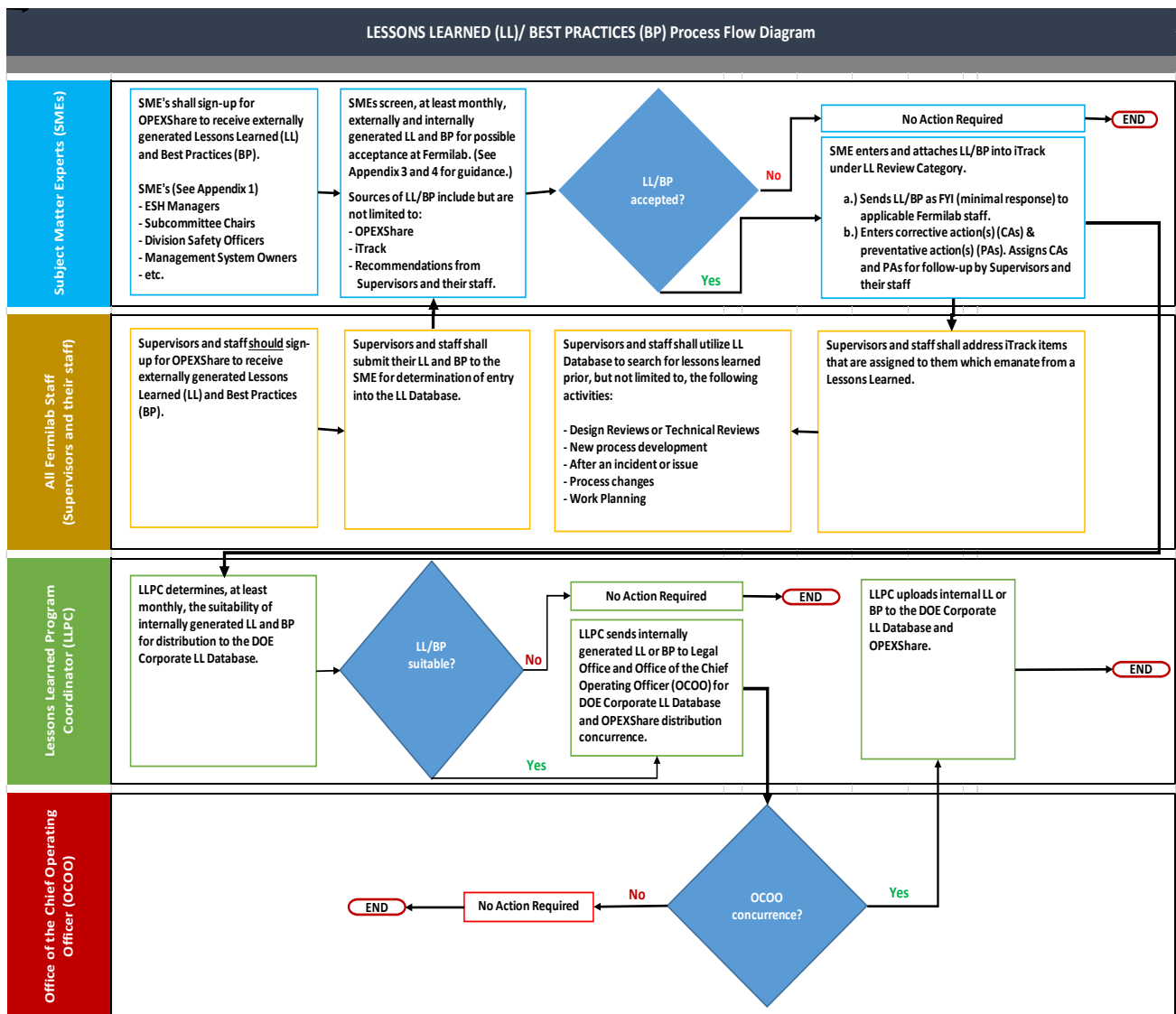[DOE- O- 210.2A, The DOE Corporate Experience Program](#)

[DOE O 226.1B, Implementation of Department of Energy Oversight Policy](#)

7.0 TECHNICAL APPENDICES

7.1 Appendix 1: Fermilab Subject Matter Experts (SMEs) List

• Laboratory Chief Officers	• Deputy Chief Safety Officer
• ESH Managers	• ESH Group Leads
• Division Safety Officers	• Authority Having Jurisdiction
• Fire Chief	• Security Chief
• FESHCom Subcommittee Chairs	• ESH & Quality POCs for Projects
• Quality Section	• Medical Office Manager
• Division/Section/Project Leads	• Project Managers
• Management System Owners	• Project Lead Engineers

7.2 Appendix 2: Process Flow Diagrams

LESSONS LEARNED (LL)/ BEST PRACTICES (BP) Process Flow Diagram

7.3   Appendix 3: Screening Criteria

- Does Fermilab perform work affecting facilities that utilize the same equipment (safety, production, monitoring, etc.) described in the document being screened?
- Does Fermilab perform work affecting facilities that employ the same designs described in the document being screened?
- Does Fermilab utilize an administrative or management control system similar to that described in the document being screened?
- Does Fermilab perform work affecting facilities that use, store, or produce the same or similar chemicals/products described in the document being screened?
- Are the same activities or operations described in the document being performed by Fermilab?
- Does Fermilab implement the same regulations/codes/standards described in the document being screened?
- Is there the opportunity for a similar problem or situation to affect Fermilab work?

7.4   Appendix 4: Benefit Analysis (Questions to answer/discuss)

- Are the lessons learned informational only?
- Has this previously occurred or previously identified?
- Can this happen again (or to us) if no changes are made?
- What other areas of lab operations or the project could be impacted?
- What can we learn from this?
- How can this benefit us?
- Is this applicable to other areas of lab operations or Projects? to Partners?
- Could this be applicable to other areas of lab operations or Projects?
- Would the incorporation (or non-incorporation) of the lessons learned change the lab operations, lab operations/enterprise risk profile, or Project's risk profile?
- Is this a viable lesson learned for lab operations or Projects?
- Is this a critical lesson learned for lab operations or Projects?