**IndepenDent REVIEW: ARGONNE NATIONAL LABORATORY High Energy Physics Division SAFETY PROGRAM**

**REVIEW PLAN**

**Rev. 0**

**September 19, 2018**

**Independent REVIEW: ARGONNE NATIONAL LABORATORY High Energy Physics Division SAFETY PROGRAM**

**REVIEW PLAN**

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**INDEPENDENT REVIEW: ARGONNE NATIONAL LABORATORY**

**Photon Sciences Directorate SAFETY PROGRAM**

**REVIEW PLAN**

**1.0 Background, Scope, and Objectives**

The Division Director of the High Energy Physics Division (HEP) has directed that an independent review of safety practices in the division be performed.

This review will examine safety programs and practices in all aspect of the operation of HEP.

The Charge Letter outlining the focus of this effort is provided in Appendix A.

Specifically, the Charge Letter identifies the following three areas of scope:

* **Scope Area 1:** Review the safety programs to evaluate how Integrated Safety Management (ISM) and its tenets are incorporated into the division’s programs and processes.
* **Scope Area 2:** Evaluate the effectiveness of current safety protocol and the perceptions of key stakeholders including HEP division employees and support staff with recommendations for improvement in the safety culture, processes, programs, and communications.
* **Scope Area 3**: Provide feedback how the new ES&H deployed service model can best be utilized and enhanced towards positive change in technology, process, people, and safety culture.

These scope areas serve as the foundation for the Independent Review.

**2.0 Approach**

Based the above scope areas, specific review objectives were identified. These objectives (by scope area), which are provided in Table 1, were shared with and reviewed by the Photon Sciences Management team in advance of the completion of this Review Plan.

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| **Table 1. Review Objectives** |
| **Scope Area** | **Objectives** |
| **Scope Area 1:** Review of safety programs | Evaluate the integration of Integrated Safety Management (ISM) and its tenets into the appropriate programs and processes. |
| **Scope Area 2:** HEP Safety Culture and Safety Protocols | Evaluate the rigor and effectiveness of HEP safety protocols/procedures Characterize the perceptions of HEP personnel regarding these safety protocols/proceduresRecommend improvements to HEP safety protocols/proceduresIdentify initiatives to improve the safety culture within HEP. Evaluate existing drivers and accountability for a positive safety culture within the HEP |
| **Scope Area 3:** Deployed ESH Service Model within HEP | Determine how the ANL Deployed ESH Service Model can support enhancements to the HEP safety culture (feeds Scope Area 2) |

Using the scope areas and associated objectives, the following activities will be executed in planning the Independent Review:

* 1. **Identify Assignments.** Review team member assignments are noted in Section 5.0.
	2. **Review Key Documents.** HEP is providing critical documents in a shared BOX folder. An initial activity is for the review team members to review the documents prior to the on-site review.
	3. **Request Additional Documents.** The review team, following review of the documents in the BOX folder, will determine if additional documents are needed. Examples could include: organizational charts, mission documents, etc.
	4. **Identify Candidate Interviews.** Based on the scope, objectives, and content of the critical documents, candidate interviews will be identified. These are anticipated to be a mixture of individual and/or group interviews.
	5. **Identify Tours of Work Areas.** Based on the scope, objectives, and content of the critical documents, proposed opportunities for tours of respective work areas will be identified.
	6. **Develop Lines of Inquiry.** The review objectives will provide the basis for developing Lines of Inquiry. These are to be tailored to the job function and/or role of the interviewee. An initial set is provided in Table 2 and could be modified as needed during the Review.
	7. **Schedule Interviews.** HEP will facilitate the arrangement of specific interviews and tours.

**3.0 Results Framework**

A written report will be provided to the HEP Division Director. The report will include the Review team’s results and conclusions as to the safety culture and practices within the HEP, including strengths and weaknesses and any opportunities for improvement in the HEP's safety practices and culture.

Results of the Review are to be characterized as follows:

* **Strengths:** Aspects of the HEP Safety Program, Deployed ESH Service Model, and/or Safety Culture that reflect clear conformance with expectations as well as implementation areas that are viewed as best practices.
* **Areas of Improvement:** Conditions associated with the HEP Safety Program, Deployed ESH Service Model (within HEP), and/or Safety Culture that are not in conformance with expectations, present vulnerabilities to HEP, and whose level of risk could become more severe if not addressed.
* **Items Requiring Immediate Management Action:** Circumstances and/or findings in any of the areas (HEP Safety Program, the Deployed ESH Service Model within HEP, and/or Safety Culture) that are of such concern that management action is required in the very near term (e.g., compensatory measure).
* **Qualified Judgment.** Circumstances (associated with the HEP Safety Program, the Deployed ESH Service Model, and/or Safety Culture) where a “conditional judgment of effectiveness” could be determined. This would be associated with Argonne or HEP initiatives that are being implemented, have not fully matured, and an “in process” evaluation would be deemed appropriate.

Additionally, the review team will provide recommendations to review results as applicable.

**4.0 Composition of Team**

The Team is comprised of personnel that collectively:

1. Have responsibilities for elements of respective safety programs at their home organization and/or have significant expertise in HEP operations,
2. Have experience in managing, overseeing, and/or evaluating operations at national laboratories – including worker safety, issues management, and performance management, and
3. Have experience in conducting reviews of safety culture at complex organizations.

The Team is comprised of the following individuals:

* Michael Romero, 630-252-4979, [mromero@anl.gov](file:///C%3A%5CUsers%5Cmromero%5CAppData%5CLocal%5CMicrosoft%5CWindows%5CTemporary%20Internet%20Files%5CContent.Outlook%5CTVNTVU3C%5Cmromero%40anl.gov) (Chair)
* Eric Mchugh, 630-840-3199, emchugh@fnal.gov
* Mary Logue, 757-269-7447, [logue@jlab.org](file:///C%3A%5CUsers%5Cprossi%5CDocuments%5CReviews%5C2018%20Independent%20Safety%20Review%5Clogue%40jlab.org)
* Matt Quinn, 630-840-5175, mquinn@fnal.gov
* DOE Observer:
	+ John Houck, 630-252-2850, john.houck@science.doe.gov
* James Piatek, 630-252-2323, james.piatek@science.doe.gov

| **Table 2. Lines of Inquiry** |
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| **Review of Safety Programs**  |
| **1. Overview and inquiries regarding programs and processes** | 1. To what extent is the role of safety culture considered in implementing safety programs and processes?
2. Summarize changes/proposed changes in HEP or Laboratory processes or expectations (what is different).
3. Describe any efforts to convey expectations to personnel based on recent program/process changes.
4. Describe how implementation of recent program/processes is being communicated?
5. Describe the outcomes that are expected from program/process changes and how will these be assured.
6. Assuming effective outcomes, describe those activities that will occur to provide for long-term sustainability of performance.
7. Are the programs resourced appropriately?
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| **Safety Culture and Safety Protocols/Procedures** |
| **2. HEP Division Staff** **Group 1: Technical (engineers, technicians)****Group 2: Physicist (post-docs, assistance physicist, and visiting scholars)** | 1. What are your expectations within HEP with respect to the safe conduct of research and operations including implementation of work planning and control? How do you communicate and reinforce those expectations throughout your organization?
2. How do you incentivize safety performance within your organization?
3. What are aspects of the safety culture that seem to be working? What aspects are not working and what recommendations do you have to improve these areas?
4. What behaviors will inform you that the culture is moving in the right direction?
5. How do your line managers’ actions demonstrate their commitment to safety? Can you provide examples?
6. What is the one change you would like to see that would improve safety performance within HEP?
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| 1. **Group Leaders**
 | 1. How do you manage work scope to ensure staff understand their limitations? How do you communicate those expectations to your workers? How do you reinforce those expectations?
2. What is your expectation regarding worker actions when:
	1. They determine that they cannot perform an activity according to a governing procedure?
	2. They encounter and unexpected condition during the performance of work?
3. How does senior management communicate current safety issues and safety improvement focus areas? Can you give examples?
4. How do you assure that work is adequately planned and conducted using trained/qualified personnel?
5. What actions have you taken that demonstrate your commitment to safety?
6. What do you think is your biggest challenge regarding the safe performance of work within HEP?
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| **Deployed ESH Service Model** |
| **5. Selected Deployed ESH Personnel/Management/DOE Facility Representative**  | 1. Describe your area of expertise.
2. Describe your role within HEP as a deployed ESH person (e.g., compliance, support, both).
3. Describe the current (or evolving model) used to deploy ESH personnel to line organizations within HEP.
4. What organization do you support?
5. To whom are you accountable?
6. Describe benefits and challenges of the deployed ESH approach within HEP.
7. Describe any changes or enhancements you would suggest to this arrangement.
8. What are HEP’s strongest opportunities for improvement in safety? (DOE FR)
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**5.0 Schedule**

Key dates in the planning, execution, and documentation of this Independent Review are as follows:

* Pre-Onsite Planning: August 15 – September 21, 2018
* Onsite Activities: September 24 -25, 2018
* Out-Briefing: September 25, 2018
* Report Transmittal: November 16, 2018

**Attachment A: Charge to the Review Panel**

**Directors Review for Safety of the**

**High Energy Physics Division at Argonne National Laboratory**

**September 24 - 25, 2018**

The Director of the High Energy Physics Division (HEP) has directed that an independent review of safety practices in the division be performed.

The charge to the review panel is:

* Review the safety programs to evaluate how Integrated Safety Management (ISM) and its tenets are incorporated into the division’s programs and processes.
* Evaluate the effectiveness of current safety protocol and the perceptions of key stakeholders including HEP division employees and support staff with recommendations for improvement in the safety culture, processes, programs, and communications.
* Provide feedback how the new ES&H deployed service model can best be utilized and enhanced towards positive change in technology, process, people, and safety culture.

Specific actions should include, but are not limited to:

* An examination of facility operating procedures
* Interviews with Division personnel, including as appropriate a cultural assessment to identify current and future risk areas
* Reviews of safety incidents involving the division, and the actions taken subsequent to those incidents to comment on the appropriateness of actions to address root causes and suggest any additional actions.
* A review of the Division’s Safety Committee
* A review of deployed ESH model within the HEP Division.
* A review of the Electronics Support group
* A review of the Detector R&D group
* A review of the Division’s Laser laboratories
* A review of the Division’s workshop and activities in Building 366
* A review of the Cryogenic laboratories
* A review of any other areas the committee determine as necessary

The committee is asked to please provide a written report to the High Energy Physics Division Director by November 16, 2018. In your report, please include your conclusions as to the safety culture and practices in the Division, including strengths and weaknesses and any opportunities for improvement in the Division's safety practices and culture.

Safety Review Committee Members

* Michael Romero, 630-252-4979, [mromero@anl.gov](file:///C%3A/Users/mromero/AppData/Local/Microsoft/Windows/Temporary%20Internet%20Files/Content.Outlook/TVNTVU3C/mromero%40anl.gov) (Chair)
* Mary Logue, 757 -269-7447, logue@jlab.org
* Matt Quinn, 630-840-5175, mquinn@fnal.gov
* Eric Mchugh, 630-840-3199, emchugh@fnal.gov

DOE Observers:

* John Houck, 630-252-2850, john.houck@science.doe.gov
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