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Report on the Fermilab Pilot N&S Closure Process

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INTRODUCTION

This report, prepared by Larry Coulson in behalf of the Convened Group, documents the Fermilab ES&H N&S pilot project conducted between February 27, 1995 and July 14, 1995. The pilot was charged with testing the validity and applicability of the Department of Energy Closure Process for Necessary and Sufficient Set of Standards, which we will call "the Process." (See Attachment 1.) Attachments to this report contain the key documentation and the results of the pilot. The most detailed source of documentation of the pilot is the *Documentation of Record* (DoR). The DoR comprises 10 appendices containing the detailed documentation, with an introduction, called the Process Documentation Guide, that describes the documentation in the appendices. The DoR Table of Contents and the Process Documentation Guide are Attachment 2 to this report. Another useful report is the Fermilab Demonstration, Response to Criteria for Judging Success of Process Demonstration, July 25, 1995, which contains the response to questions posed by the DOE Department Standards Committee to measure the success of the Fermilab pilot. The latter report, without attachments, is Attachment 3 to this report. Copies of the appendices and attachments to the above reports are available through the Director's Office at Fermilab (708-840-3211).

We intend this report for a broader audience than the other documents we reference above. We hope that this report will help guide others through the Process as currently written. We assume that the reader has an acquaintance with the Process and is using this report as a guide to its implementation. Without some prior acquaintance with the Process, we fear that many of the references will be meaningless.

The first of the eight parts of this report is this Introduction. The second part contains comments on the Process, including an explanation of the pilot organization. The third part, Implementation of the Process, describes what we did to address each section of the Process. This part should help the reader understand the interpretation chosen for each section of the Process. The fourth part contains a brief discussion of the contract modification made as a result of the pilot. The fifth part contains some general conclusions and lessons learned. The sixth part is a brief summary statement. The seventh section is a Glossary of Abbreviations, which the reader may find helpful in keeping track of the many abbreviations used in this report. Finally, there follows a series of 19 attachments, which contain the documentation to help the reader understand the details of the Fermilab pilot.

PROCESS COMMENTS AND ORGANIZATION

Comments

- 1. A critical element for the success of the pilot was the strong support from the entire line organization (ER, CH, BAO, and Fermilab), EH and the Department Standards Committee. Not only was there strong support and participation from all these organizations, but the working team relationship among the participants greatly facilitated the process.
- 2. From the beginning, the team decided to include all interested persons on the distribution list for documents as they were generated. Therefore, we sent electronic copies of meeting minutes, charters, etc. to everyone who had shown interest, including representatives of all the above-mentioned organizations. Ultimately over 40 people were on the distribution list.
- 3. Involvement of people and organizations outside the DOE family, peers from DOE sister labs, DOE personnel from the field office and area office, as well as Fermilab personnel, enhanced the credibility of the final product.
- 4. Agreement on the overall organization, responsibilities, authorities, etc. at the beginning of the Process kept the Process going smoothly. We agreed on the protocols for organization, approvals, responsibilities, and members of the Convened Group at the first and only meeting of the Extended Convened Group.
- 5. The Process works. We recognized that the Department Standards Committee had not specified the mechanics of the Process in great detail; but our experience showed that a strength of the Process comes precisely from the fact that the mechanics of the Process are *not* prescribed in great detail. Although this made starting the Process difficult, it allowed for enough flexibility for the responsible parties to implement the pilot in a way that reflected their collective judgment and experience. As a result, they felt comfortable in taking ownership of the Process and could feel confident of the results.

Organization

Attachment 4 shows the organization developed for the Fermilab pilot. The 3 boxes in the top row lists the **Agreement Parties**. The name within each box indicates the approval authority for that organization. Fred Bernthal is the President of Universities Research Association, Inc. (the organization that holds the contract with DOE to operate Fermilab);

John O'Fallon is the Director of the High Energy Physics Division in ER; and Andrew Mravca is the Manager of the Batavia Area Office, and the Contracting Officer.

Each of these organizations had one member on the **Convened Group** (the **Process Leader** is also from Fermilab but generally represented the Process and not an organization). Larry Coulson (Process Leader) is an Assistant Director at Fermilab; Ray Stefanski is the Associate Director for Operations Support at Fermilab; Andrew Mravca; and Dave Goodwin (ER-20) represented the Resource Authority.

The Extended Convened Group included the Convened Group members plus Cherri Langenfeld (Manager, Chicago Operations Office), Wilmot Hess (Director of High Energy and Nuclear Physics in ER), Ezra Heitowit (Vice President of URA), and Ken Stanfield (Deputy Director of Fermilab). This group met only once as a decision-making body. As described above, they created the overall plan for the Pilot.

A Steering Committee was created within Fermilab to advise the Process Leader on aspects of the Process that directly involved Fermilab. Members of the Steering Committee included Larry Coulson, Ray Stefanski, Bruce Chrisman (Associate Director for Administration), Don Cossairt (Head of the ES&H Section), Tim Miller (Deputy Head of the ES&H Section), Hans Jostlein (Standards Manager), and Kathy Williams (Manager of the QA Office).

The **Identification Team**, created by the Convened Group, consisted of 15 members including the Process Leader. One member each came from CEBAF, ANL, BNL, and BAO. Two members each came from SLAC and CH. The remaining members were Fermilab personnel. In general, senior personnel were chosen for their technical knowledge of accelerator activities, including ES&H aspects, and their ability to work in a team environment. The Identification Team broke into technical groups (by functional area), called **Focus Groups**, to analyze issues and select standards. The Focus Groups had access to **Subject Matter Experts** as required.

The protocol for confirmation required presentation and defense of the draft set of standards to Fermilab first, and the Convened Group second. The Fermilab ES&H Policy Advisory Committee (ESHPAC), which advises the Director on ES&H Policy matters, primarily carried out the Fermilab review.

A Confirmation Panel, created to support the Convened Group in its challenge of the draft set, provided peer involvement at the confirmation stage. The Confirmation Panel included high-level operational and ES&H personnel selected from DOE and non-DOE laboratories with a history of accelerator based physics research.

IMPLEMENTATION OF THE PROCESS

This section follows the outline of the Process. Paragraph labels and headings are those used in the Process. We discuss the interpretation and implementation of each part of the Process, for the Fermilab pilot.

Definitions

We agreed on the following definitions at the Extended Convened Group meeting.

The Customer Organization is BAO.

The Responsible Organization is URA.

The **Agreement Parties** include URA, ER, BAO. This is in keeping with the suggestion to establish the approval authority as low in the organization as possible.

The **Resource Authority** is ER.

The Convened Group identified **Stakeholders** in a document called the Stakeholder Participation Plan. This plan defines stakeholders and indicates the level of involvement of each. (See Attachment 5).

Operational and Technical Experts were largely ES&H professionals, physicists, engineers and other line supervisors at Fermilab. We also tapped expertise at sister labs for participation on the Identification Team and the Confirmation Panel. Three local industrial companies participated by providing personnel to discuss their experiences with external regulation and regulatory bodies. In addition, the Safety Director of the Laboratory of Nuclear Studies at Cornell presented to the Identification Team his experience with safety issues and regulation by outside regulators.

1. INITIATING THE NECESSARY AND SUFFICIENT CLOSURE PROCESS

Initiation of the Fermilab pilot was somewhat different from that envisioned in the Process protocol document. Fermilab was selected by representatives of the Department Standards Committee and ER as a likely candidate to conduct the pilot for two important reasons: Fermilab is a single purpose laboratory and it is classified as a low hazard facility. It was anticipated that it would be easier to conduct the pilot at Fermilab than at a multipurpose or a higher risk lab. In a letter to Andrew Mravca, Wilmot Hess proposed that Fermilab conduct the pilot. Fermilab agreed, and sent a proposal to the Department Standards Committee. The Department Standards Committee accepted the proposal on 2/24/95. A kickoff meeting at Fermilab on 2/27/95 launched the pilot. Representatives of ER, EH, CH, BAO and Fermilab participated. The kickoff acquainted Fermilab managers and other Lab personnel with the Process and showed the support of the line organization and EH. We hoped that this would allay skepticism about the prospects for success of the pilot. As required by the Department Standards Committee's protocol for the pilots, the head of the ER program office, Martha Krebs, and the head of EH, Tara O'Toole, officially sanctioned the pilot. DoR Appendix A displays these letters.

The Responsible Organization, Fermilab, appointed Larry Coulson to be the Process Leader.

2. PRODUCING A NECESSARY AND SUFFICIENT SET OF STANDARDS

Process Element 1. Defining the Work and the Hazards

- [1] Acquisition of relevant information on the work performed at Fermilab was obtained as follows:
- A. Through the Convened Group meetings, the Process Leader solicited information on the initial conditions (A through F shown in paragraph [3]) from ER and BAO. The group agreed that the hazard (issue) identification survey to be conducted by Fermilab would supply the best "bottoms up" information. (See D.[3] below.)
- B. Operational and technical experts provided much of the information collected by the survey conducted by Fermilab. Experts were also part of the Identification Team and the

Confirmation Panel as previously described. More than 30 Subject Matter Experts assisted the Identification Team.

- C. The resource authority, ER, agreed that the pilot would be conducted within existing resource limits. The resources to conduct the pilot would come partially from delaying some reports to DOE. The resources for the Laboratory mission (HEP) were not an issue in this pilot. The group decided that, although resources would fluctuate, future resource availability would not play a role in this pilot.
- D. The Convened Group defined Stakeholder involvement in the Stakeholder Participation Plan. The DoR, Appendix D, documents the involvement of stakeholders.
- [2] The Process Leader organized all the collected information into a binder issued to each Identification Team member when the work of the Identification Team began.
- [3] The primary source of information for the definition of work at Fermilab was a survey of management, supervisors, and ES&H professionals. The survey form includes questions A though F, some other questions, and a checklist of potential ES&H issues. Attachment 6 displays the survey forms. This information, collected from each of the 77 sub-organizational units at Fermilab, provided a characterization of all the work currently being done at the Lab. The DoR, Appendix C, contains the collected data. In addition to this survey, the Process Leader assembled other sources of information that were felt to be of importance in characterizing the work and hazards at the Lab—e.g. accident records, occurrence reports. Attachment 6 also documents the other sources of information.

The information from all these sources was formulated into 151 ES&H issues that were provided as a starting point to the Identification Team for analysis to produce the N&S set of standards. The DoR, Appendix E, displays this initial list of issues. Nearly everyone who reviewed this list agreed that, with only a few exceptions, the same list would characterize many light industrial companies. The obvious conclusion is that there are very few unique ES&H issues at Fermilab. Fermilab has mostly standard industrial hazards.

[4] Although the Process allows for re-evaluating the definition of the work if advised by the Identification Team, the team found no re-evaluation necessary.

Process Element 2. Creating the Team(s)

The Extended Convened Group named the members of the Convened Group as described above. The Extended Convened Group decided that it was appropriate for the Convened Group to consist of one representative of each of the agreement parties. We have earlier provided the membership of the Extended Convened Group and Convened Group, also included as Attachment 7.

The Convened Group followed the guidance in the Process as closely as possible. The Convened Group documented their decisions and the protocols for the pilot in the pilot Charter. (See Attachment 8.) The Convened Group carried out specific responsibilities as follows:

- [1] The pilot Charter and the Identification Team Charter, Attachment 9, defined the criteria for selection of Identification Team members. The primary criterion for the Identification Team members was knowledge of the work activities at a research accelerator. Another criterion was work experience in an external regulatory organization such as OSHA or EPA. We agreed that a Fermilab person with technical expertise in the appropriate functional ES&H area should lead each of the Focus Groups of the Identification Team, so members from Fermilab were also selected on this basis.
- [2] The Process Leader solicited biographies of candidates for the Identification Team from Fermilab, BAO, CH, and four sister labs (SLAC, ANL, CEBAF, and BNL). The Convened Group reviewed the biographies and selected the team members. Attachment 10 contains the names of the team members and a summary of their credentials.

The Convened Group approved a list of Confirmation Panel candidates from five sister labs and one non-DOE accelerator lab. The Process Leader solicited the Confirmation Panel members from that list. The Confirmation Panel included the ES&H Managers from SLAC, LBNL, ANL, and the Deputy ES&H Manager from BNL. The Project Manager of CEBAF and the Safety Director of The Laboratory of Nuclear Studies, which operates the Cornell Electron Storage Ring accelerator at Cornell University, were also panel members. Attachment 10 contains the list of Confirmation Panel participants.

Process Element 3. Defining and Agreeing to Protocols and Documentation Requirements

[1] The Convened Group defined the protocols and documentation in the pilot Charter (Attachment 8). Of particular importance was the specification of the approval protocols, and resolution of differing opinions. The Extended Convened Group agreed that the approval would be by the Agreement Parties: President of URA, ER, and the Contracting officer, in that order. The process for resolving differing opinions followed the authority hierarchy—i.e. problems not resolved by the Identification Team would be referred to the Convened Group, problems not solved by the Convened Group would be referred to the Extended Convened Group. We defined no further appeal mechanism.

[2] The Convened Group left most decisions about the documentation of the Identification Team work to the Identification Team. The pilot Charter contains all decisions made by the Convened Group regarding documentation requirements.

The minutes of the meetings, contained in the DoR, Appendices E, F, and H, record Identification Team decisions about protocols and documentation.

Process Element 4. Identifying the Necessary and Sufficient Set of Standards

The Identification Team began its analysis on the 151 issues prepared as previously described. During their deliberations, some issues were deleted or combined with others and some issues were added, based on the Identification Team's professional judgment. Attachment 11 displays the final list of 172 issues. The Identification Team used the following process for the analysis of each issue:

- 1. The Identification Team determined if a standard is needed for each issue identified (either presented to them or identified by them).
- 2. If a standard is needed, a Fermilab Identification Team Document (FITD) was filled out. This form documented adherence to the requirements of the Process. In particular, it provides documentation of [2], [3], [6], and [7] in Process Element 4.

Attachment 12 shows a flow chart of the analysis process and an example of the FITD. More than 30 Subject Matter Experts, mostly drawn from Fermilab's pool of professional engineers, scientists, and ES&H personnel, assisted the Focus Groups in this analysis.

The expectations of BAO, ER, and URA for the pilot were primarily to use industrial solutions for industrial problems. In other words, if an identified issue is similar to that faced by industry and an industrial standard exists (e.g. OSHA, EPA, etc.) then that standard should be chosen. If no industrial solution exists or if it is inadequate, then another external standard is sought (e.g. consensus standard, DOE Order, etc.). Only if a satisfactory solution is not available from those choices should an internal (Fermilab) standard be chosen.

In order to help the team members better understand the consequence and experience of using industrial standards, the team asked several local industries and two university research facilities to participate. Three local industrial firms sent representatives to join in a panel discussion on industrial regulation and regulators. AMOCO Research Center, Amersham, and NALCO participated. The Safety Director of the particle accelerator at Cornell also visited the team and discussed his experience with ES&H at a high energy accelerator that is not subject to DOE regulations. The safety director for the accelerator facility at the University of Illinois (also not regulated by the DOE) sent a copy of the ES&H program developed for that facility for the Identification Team to review. The interactions with the representatives of facilities using outside regulation proved very insightful to the Team members.

Attachment 13 contains the final set of FITDs for all 172 issues, and Attachment 14 contains the final list of issues with corresponding standards citations. Some standards (e.g. OSHA 1910) had many sections referenced. In some of these cases the Identification Team decided to accept the entire standard for the sake of simplicity, even though some parts of it were not necessary for the set.

The Identification Team reached consensus on a set of standards. Attachment 15, the Team Report, contains these standards. The Identification team made no recommendations for redefinition of work or for developing new standards.

Process Element 5. Confirming the Necessary and Sufficient Set of Standards

The pilot Charter called for a two-step confirmation process. First, Fermilab was invited to review and comment on the draft set. The pilot Charter defines the protocols for this process, and DoR Appendix G contains the documentation of that review.

The Charter called for the final confirmation process to be a presentation and oral defense of the draft set by the Identification Team to the Convened Group. A peer group, the Confirmation Panel, assisted the Convened Group. The Convened Group also invited the Extended Convened Group to participate in the confirmation.

The Convened Group held the confirmation meeting on July 12, 1995. Attachment 16 shows the people participating. DoR Appendix I shows the minutes of the confirmation meeting, issues raised, and the resolution of those issues. During the meeting, three issues were raised that were significant enough to need resolution after the meeting. The Convened Group resolved all issues before approval of the N&S set of standards by the Agreement Parties.

Process Element 6. Approving the Necessary and Sufficient Set of Standards

Approval of the N&S set occurred on July 14, 1995. Attachment 17 contains the approval documents.

CONTRACT MODIFICATION

The DOE/URA contract was modified on July 14, 1995, as a result of the N&S Pilot (see Attachment 18). The contract modification replaced the existing list of applicable ES&H DOE Orders with a modified list of applicable orders and the "N&S" list of Standards.

The new contract no longer contains the orders for Quality Assurance, Conduct of Operations, Self-Assessment, and Maintenance Management. These management orders have historically been associated with the ES&H activities of laboratories. These orders are important because they affect the implementation of the N&S set.

The Convened Group asked the Identification Team to make recommendations about management systems to the Convened Group. However, the Identification Team could not reach consensus on the best management systems to use as "standards." Members of the team held views that reflected the management systems of their home institutions. Therefore, the Process Leader referred these issues to the Convened Group for resolution as per protocol in the Pilot Charter. The Convened Group discussed these issues with the Identification Team, the Confirmation Panel, and members of the Extended Convened Group present at the confirmation. It was noted that many of the selected standards explicitly addressed QA for ES&H—e.g. CFR 835.102, ASME Pressure Vessel Code, and the Handbook for Sampling & Sample Preservation of Water and Wastewater (EPA-600/4-82-029). The conclusion of the Convened Group was unanimous—the referenced orders do not add value and are not necessary; therefore the contract should not include them.

The following clause was inserted into the contract:

1,b,(3). (Fermilab will) Continue to maintain management systems that ensure that the agreed-upon standards are implemented.

This requires:

- 1. Fermilab to maintain adequate management systems, and
- 2. The Batavia Area Office to audit Fermilab's management systems.

Attachment 19 provides further details.

CONCLUSION AND LESSONS LEARNED

We conclude that the N&S Process works well as designed. We faithfully followed the sequence of steps for the N&S Closure Process, contained in the Charter for the pilot and in the Identification Team Charter. These documents provided an entirely satisfactory mechanism for getting the work done.

We also concluded that the role of the Process Leader is a critical and exacting one. The Process Leader's effective coordination of a complicated mix of working and advisory groups (the Convened Group, Extended Convened Group, Steering Committee, Identification Team, Focus Groups, and Focus Group Leaders) is vital to the successful implementation of the N&S Process.

We present below a collection of "lessons learned" from the implementation of the N&S Pilot Process at Fermilab; we hope that these remarks will help organizations that are planning their own N&S Process in the future:

- Time and Hard Work: A successful N&S Process requires a lot of hard work by highly qualified and highly motivated people. In particular, the Identification Team phase of the work required significantly more time and effort than the Process Leader had anticipated. If we count the time of all the persons (Fermilab, BAO, CH, ER, Department Standards Committee and outside persons) involved in meetings, preparation, follow-up, communication, travel, etc., we estimate that the pilot took about 90 person-months of effort. Fermilab effort was about 24 person-months. The direct cost to Fermilab (travel, facilitation, meeting rooms, materials, etc.) was about \$50 K.
- <u>Careful Organization</u>: Careful organization of each step of the process, including faithful implementation of all of the prescribed formalities of the process, is very important. In the Fermilab Pilot Process, this organizational effort helped to prevent misunderstandings and contributed to assuring continued buy-in by all interested parties as work progressed. The efforts of the Process Leader to assure that all interested parties were kept informed throughout the process were most worthwhile.
- <u>Facilitator</u>: The participation of a management consulting firm in the Fermilab N&S Process was helpful, especially in its role as a process facilitator at the outset of the Identification Team's initial two week period of concentrated work in mid-May. The facilitator introduced several concepts (the use of flip charts, ground rules, specific goals, pre-determined breaks, role playing-devil's

advocate, a common understanding of the meaning of consensus, etc.) that proved very useful in keeping the Team and Focus Groups focused on the issues, the process, and the final objective.

- OSH Issues: The scope of the work of the Occupational Safety and Health
 (OSH) Focus Group was too broad. Over 100 of the ES&H hazard issues
 identified by the workers at Fermilab were in the OSH area. The assessment of
 these issues by at least two separate Focus Groups would probably have made a
 more effective arrangement.
- Boundary Conditions: Thoughtful consideration by the Process Leader, throughout the duration of the Identification Team work, of "boundary conditions" is important. It is not always clear what constitutes an ES&H issue, or if one should include a closely related topic associated with a particular ES&H issue. Examples of this are property loss prevention in the fire safety area, or safeguards and security considerations in the emergency response area.
- Involvement of Contract Lawyers: Although we solicited some comments from legal counsel early on, during the negotiations for the contract modification it became clear that more participation by the lawyers during the Identification Team process would have facilitated the final stages of the process.

SUMMARY

The Fermilab Pilot exercised the Process. The Pilot followed the Process scrupulously, and found it very useful for the intended purpose. A set of N&S standards was selected, approved and incorporated into the DOE/URA contract. We propose no changes to the Process. We recommend use of the Process by the other DOE laboratories. We feel that lack of resolve or vision of those involved would constitute the only barrier to success.

REPORT ON THE FERMILAB PILOT N&S CLOSURE PROCESS

GLOSSARY OF ABBREVIATIONS

ANL Argonne National Laboratory

BAO Batavia Area Office (DOE) [Since renamed the Fermi Group]

BNL Brookhaven National Laboratory

CEBAF Continuous Electron Beam Accelerator Facility

CH Chicago Operations Office (DOE)

DOE Department of Energy

DoR Documentation of Record

DSC Department Standards Committee (DOE)

EH Office of Environment Safety and Health (DOE)

EPA Environmental Protection Agency

ER Office of Energy Research (DOE)

ES&H Environment Safety and Health

ESHPAC ES&H Policy Advisory Committee (Fermilab)

FRMI Fermi Group (DOE) [Formerly the Batavia Area Office]

FITD Fermilab Identification Team Document

HEP High Energy Physics

LBNL Lawrence Berkeley National Laboratory

N&S Necessary and Sufficient

OSH Occupational Safety and Health

OSHA Occupational Safety and Health Administration

QA Quality Assurance

SLAC Stanford Linear Accelerator Center

URA Universities Research Association

THE DEPARTMENT OF ENERGY CLOSURE PROCESS

FOR

NECESSARY AND SUFFICIENT SETS OF STANDARDS

DRAFT 2D 3/16/95

FOR THE DEPARTMENT STANDARDS COMMITTEE

CLOSURE PROCESS FOR NECESSARY AND SUFFICIENT SETS OF STANDARDS

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OVERVIEW

The Department Standards Program promotes the use of standards that are supportive of work, rather than barriers or extra burdens. The "Criteria for the Department's Standards Program" establishes agreed upon, "necessary and sufficient" sets of standards for the performance of work as a keystone of the program. Criterion 6.3 states, "A Department-wide process establishes how Department line management and contractor management, at the organization level appropriate for effective management, approve and maintain a necessary and sufficient set of standards (including all requirements imposed by law) for Department operations." The Department Standards Committee has developed this draft "Closure Process for Necessary and Sufficient Sets of Standards," for use at any level, and by any organization within the Department complex, including the establishment of mutual contractual commitments between the Department and its contractors.

Standards are expressed expectations for the performance of work. Sources of standards include federal, state, and local laws and regulations; Department Orders; and other documents such as Department of Energy Technical Standards, nationally and internationally recognized consensus standards, and industry standards. A necessary and sufficient set of standards is one that (a) meets the performance expectations and goals for the work (including complying with laws and regulations and providing adequate protection to the environment, workers, and the public) and (b) contains only the standards which are necessary for the set to be sufficient.

The closure process for necessary and sufficient sets of standards described in this document is initiated when one or more of the criteria listed in Section 1 are met. The process begins with a definition of the work and the related hazards. Using this information and other Stakeholder input, an Identifying Team reviews existing standards and identifies which of them constitute a necessary and sufficient set. Additional standards are written if needed to achieve sufficiency. Closure of the process is achieved when the selected set of standards is confirmed and approved.

The Fermilab Necessary and Sufficient ES&H Pilot utilized Draft 2, 2/24/95 of the Closure process document. There are no substantive differences between the 2/24/95 draft and this draft.

DEFINITIONS

The Customer Organization is the organization that has direct responsibility, accountability, and authority for having the work performed subject to the agreed-upon set of standards.

The **Responsible Organization** is the organization that has direct responsibility, accountability, and authority for performing the work subject to the agreed-upon set of standards.

An Agreement Party is any party, including, at a minimum, the Responsible Organization and the Customer Organization, who must agree to the necessary and sufficient set of standards for the work (for example, parties to a contract, as in the case of DOE and a M&O contractor, or management organizations within an agency or company that agree on standards for performance of work.)

A **Stakeholder** is any party other than the Resource Authorities or the Agreement Parties that will be materially affected by, or can materially affect, the outcome of the work, either favorably or unfavorably (for example, representatives of state, local, and federal governments; labor unions; and citizens' groups.)

Operational Experts are individuals with knowledge and expertise relevant to the work, and the site, facility, and activities addressed by the necessary and sufficient set of standards.

Technical Experts are individuals with knowledge and expertise relevant to a particular environment, safety and health discipline, for example, industrial hygiene, criticality control, or industrial safety.

Resource Authorities are organizations or individuals who have control over the equipment, facilities, personnel, and budget necessary to accomplish the work. Line managers are typical resource authorities in classical organizations. Program and project managers are typical resource authorities in matrix organizations. Some organizations may have resource managers who are independent of programs and projects.

1. INITIATING THE NECESSARY AND SUFFICIENT CLOSURE PROCESS

Objective: to determine whether the criteria exist for initiating the necessary and sufficient closure process and to assign responsibility for conducting the process.

The criteria for initiating the necessary and sufficient closure process are as follows:

- A. A set of standards does not exist, as in the case of a new activity;
- B. An existing set of standards (for example, the current set of all applicable Department directives) is no longer appropriate due to changes in mission, regulatory environment, degree of hazard, performance expectations, or knowledge;
- C. The applicable contract requires that the process be used;
- D. A Stakeholder demonstrates that the existing set of standards is NOT necessary and sufficient. A Stakeholder must demonstrate to the satisfaction of the agreement parties that the set of standards being used is not sufficient to provide adequate protection. Demonstration is to be made through evidence that shows the set of standards, not a lack of effective implementation of the standards, is the reason for not providing adequate protection.

The Agreement Parties are responsible for determining if any criteria for initiating the necessary and sufficient closure process is satisfied.

If an Agreement Party determines that at least one of the criteria is satisfied, the **Responsible Organization** assigns responsibility for conducting the process to a Process Leader.

NOTE: Criterion 6 states that identification, approval and maintenance of necessary and sufficient sets of standards will be at the organizational level appropriate for effective management. With regard to the conduct of the closure process, this will be at the lowest level of management that has responsibility for managing the work affected by the necessary and sufficient set of standards. This closure process is intended to be general enough to be applied at any management level within the Department and its contractor complex. It can be applied to establish contractual standards, or to the development of standards within a contractor organization, e.g., work standards for a specific work task.

2. PRODUCING A NECESSARY AND SUFFICIENT SET OF STANDARDS

<u>Objective:</u> to produce and reach closure on the necessary and sufficient set of standards to meet performance expectations and objectives for providing adequate protection to workers, the public, and the environment. This phase consists of the following five major process elements:

- 1. Defining the work and the hazards
- 2. Creating the team(s)
- 3. Defining and agreeing to protocols and documentation requirements for the teams
- 4. Identifying the necessary and sufficient set of standards
- 5. Approving the necessary and sufficient set of standards.

These process elements do not need to be performed sequentially. Any one or more of them can be accomplished concurrently. Also, as the process evolves, it may be necessary to iterate among the various elements to allow for any changes to the scope, expectations, teams, set of standards, or other efforts being conducted within the process elements.

Process Element 1. Defining the Work and the Hazards

Objective: to define the work to which the standards apply.

This process element is critical to the successful identification of a necessary and sufficient set of standards. Without a clear definition of the work and its associated hazards and uncertainties a set of standards may be insufficient to provide the desired level of protection or may contain more standards than needed and be inefficient and wasteful of resources.

In this process element, the Process Leader has the four following responsibilities:

- [1] Acquire relevant information on the work to be performed from the following involved parties:
 - A. Agreement Parties. Individuals representing the Agreement Parties will provide information on initial conditions [3]A through [3]F.
 - B. Operational and Technical Experts will assist the Agreement Parties in providing information on initial conditions [3]A through [3]F.
 - C. Resource Authorities will provide information on initial condition [3]G.
 - D. Stakeholders who can and want to contribute to the work of this Process Element. These Stakeholders may include officials of the state or city and county governments located adjacent to a Department site or facility; unions representing labor at the site or facility; local citizens' groups, and independent oversight organizations within the Department and the contractor organization. They will provide information on initial conditions [3]H and [3]I.
- [2] Organize the information received from the above parties as an initial basis for identifying the necessary and sufficient set of standards.
- [3] Define the work in terms of these initial conditions:
 - A. Performance expectations and objectives (for example, goals for safety, quality, and operations).
 - B. What actions will be performed.
 - C. Physical conditions within which the work will be performed.
 - D. Materials and conditions that could cause adverse consequences (for example, hazards, carcinogens, and radiation).
 - E. Uncertainties about the work.
 - F. Organization and management.
 - G. Resource availability and constraints.
 - H. Stakeholder concerns.

- I. Stakeholders' channels of communication.
- [4] If necessary, re-evaluate the work definition on the basis of feedback from the team(s).

Process Element 2. Creating the Team(s)

Objective: to create one or more teams that will develop a necessary and sufficient set of standards and confirm that the set is adequate and feasible.

The establishment of a set of standards relies on the collective judgment of a team of knowledgeable people in reaching a decision on what constitutes a necessary and sufficient set of standards for a defined scope of work. The nature of the work, its complexity, hazards, and uncertainties will determine the breadth of knowledge needed within the team. To ensure that a) the criteria for the team(s) members reflect the full breadth of issues to be addressed, and b) that resources for establishing the teams are provided, a group of interested parties will be used to establish the criteria for team members, and to arrange for individuals to be assigned to the team.

The use of a team for confirmation of the necessary and sufficient set of standards is intended to provide an adequate basis for approval of the set. The criteria for the team members, and the degree of individual and team independence needed for this purpose will have to be determined by the convened group in each case. For simple cases, the identification process itself may provide sufficient evidence of the adequacy and feasibility of the set. For more complex or controversial cases, it will be necessary to use more rigorous and independent methods for confirmation, for example, a formal, independent peer review. When formal, independent peer review is deemed desirable, NUREG-1297, "Peer Review for High Level Waste Depositories," may be useful.

The Process Leader will convene a group with representatives of

- A. The Agreement Parties
- B. The Resource Authorities
- C. Stakeholders who have indicated that they want to participate and can be expected to contribute to the development of a necessary and sufficient set of standards. In most cases these Stakeholders include officials of the state or city and county governments located adjacent to a Department site or facility.

The Convened Group will have the following responsibilities:

- [1] Define the criteria for the team(s) that will be formed.
 - A. Establish the functions, relationships, and composition of the team(s) based on (1) the complexity of the work or the existing set of standards to be reviewed; (2) the number of disciplines (technical and otherwise) involved; and (3) the extent to which the relevant technical, scientific, programmatic, and Stakeholder communities are known to hold differing opinions on the issues under review.
 - B. Establish membership criteria pertaining to
 - Qualifications for Technical Experts (Subject Matter Experts) and Operational Experts, who have experience doing the work.
 - Those groups/interests that will be represented, including Resource Authorities and Stakeholders as appropriate (for example, representatives of state, local, and federal governments; labor unions; and citizens' groups.)
- [2] Arrange for individuals to be assigned to the team(s), consistent with the membership criteria. (Assignment of people to the team means that members will fully participate in all team meetings and team decision making.)

Process Element 3. Defining and Agreeing to Protocols and Documentation Requirements

Objective: to establish protocols, agreements, and documentation requirements for a credible and efficient process.

NOTE: The degree of formality and the extent of documentation required may vary, depending on the work and the following considerations: (A) The potential impact of the identified hazards and associated uncertainties of the work; (B) The degree of Stakeholder involvement; (C) The complexity of the work; and (D) The quality and rigor required to provide confidence that the standards selected meet the performance expectations and objectives of the work.

In this process element, the Convened Group will have the following responsibilities:

- [1] Establish the following protocols and agreements, as necessary
 - A. Who will approve the final set of standards.
 - B. Schedules, time limitations, and approval defaults. (Approval defaults are automatic approvals of the set when the approval authorities do not take timely action in accordance with the time duration established for their review and approval.)
 - C. Resolution of differing opinions.
 - D. Interactions between this group and the teams.
- [2] Establish the following documentation requirements, as necessary, for
 - A. The format and content for plans and procedures. (Typical plans and procedures may include: a plan for carrying out the closure process including a schedule for completion of the process activities, a plan for performing a formal peer review, a procedure for how comments and differing opinions are to be resolved, and a procedure for how team member qualifications are to be documented.)
 - B. The responsibilities and qualifications of team members.
 - C. Team consensus and differing opinions.
 - D. Decisions relating to the following:

Initiating the necessary and sufficient process.

Defining the work.

Selecting the team.

Selecting and confirming the standards.

Approving the necessary and sufficient set of standards.

E. The basis for what constitutes a necessary and sufficient set of standards, including, at a minimum:

Definition of the work and hazards.

Compilation of the necessary and sufficient set of standards.

Justification for the set's adequacy.

Implementation assumptions necessary for reaching closure on the set, which will be used in interpreting and applying the set (e.g., any unique additional resource requirements, or any time constraints for the use of certain selected standards).

The **Process Leader**, with the participation of team members, will have the following responsibilities to carry out the duties assigned by the Convened Group:

NOTE: It is intended that the team perform its activities face-to-face as a group in determining what is judged to be the necessary and sufficient set of standards. All members of the team are expected to be present for team meetings and participate in team decision making.

- [1] Establish the following team protocols, as necessary for
 - A. Establishing team members' roles and responsibilities.
 - B. Orienting team members on the necessary and sufficient process.
 - C. Developing plans and procedures, including schedules and cost estimates.
 - D. Resolving comments and differing opinions. In those cases where differences in opinion cannot be resolved within the team, dissenting opinions will be documented for consideration by the confirmation team (if any) and the approval authority.
 - E. Interacting with Stakeholders when it is necessary to obtain clarification of Stakeholder concerns included in the definition of work and hazards.
- [2] Establish any additional team documentation requirements, as necessary.

Team Members must conduct the process in accordance with the protocols and documentation requirements.

Process Element 4. Identifying the Necessary and Sufficient Set of Standards

Objective: to identify and reach team consensus on the necessary and sufficient set of standards.

The team assigned to identify the necessary and sufficient set of standards draws upon its collective experience to achieve the objective.

The **Identification Team** has the following eight key responsibilities:

- [1] Identify any additional information needed to define the work.
- [2] Evaluate relevant sources of existing international, national, state, local, and work-specific standards including laws, regulations, rules, orders and procedures.
- [3] Identify which of the existing standards constitute a necessary and sufficient set, or write additional standards as needed to achieve sufficiency, with the requirement that only those standards necessary to provide adequate protection of workers, the public and the environment are included in the necessary and sufficient set.
- [4] Request additional resources, if needed, such as other subject matter experts or resource authorities.
- [5] Reach consensus on the necessary and sufficient set of standards.
- [6] Identify (A) any assumptions used by the team regarding implementation of the necessary and sufficient set to achieve consensus (for example, use of a procedure where there is no established standard for a certain type of operation); and (B) the team's views on any unique resources required to implement the set of standards.
- [7] Identify those applicable federal, state, and local laws, regulations, and rules that are required to be included in the necessary and sufficient set of standards, but are judged not to add any value to the achievement of adequate protection. This identification will serve as the basis for pursuing exemption from these standards.
- NOTE: No justification or documentation is required for applicable non-regulatory standards that are NOT selected (for example, DOE Orders, manuals, and technical standards, and industry consensus standards.)

[8] If it is not possible to identify a necessary and sufficient set to meet the current performance expectations and objectives, an outcome of the process may be to recommend that the work definition be revised, or that new standards be developed, or both.

If it was determined in Process Element 2, "Creating the Team(s)," that a separate confirmation team will be needed to provide an adequate basis for approval, the confirmation team will proceed as follows:

- [1] Review the information available to and used by the Identification Team.
- [2] Confirm that the set of standards is necessary and sufficient to satisfy the performance expectations and objectives of the work.
- [3] Confirm that implementation of the set of standards will be feasible.

NOTE: Although it is always necessary to provide confirmation, it may not be necessary to have an independent confirmation team.

If the actions performed in this process element meet their objective and conform to the applicable protocols and documentation requirements, then the **Process Leader** initiates Process Element 5.

Process Element 5. Approving the Necessary and Sufficient Set of Standards

Objectives:

- A. To accept the level of protection provided by the necessary and sufficient set of standards.
- B. To accept and authorize the use of the necessary and sufficient set of standards, including any implementation assumptions.
- NOTE: This approval does not constitute approval of exemptions to applicable laws and regulations. Process Element 4 provides that those standards, in laws and regulations, that do not provide any value to protection of workers, the public and the environment will be identified as a basis for seeking exemption through the prescribed processes.

The approval authority will

- [1] Judge whether the necessary and sufficient process has been correctly implemented.
- [2] Determine whether the confirmation provided by Process Element 4 is adequate to support approval. If this confirmation is not adequate to support approval, the approval authority may request that the deficiencies be corrected, or to initiate its own confirmation action.
- [3] Approve or disapprove the set of standards in accordance with the established time limitations or approval defaults.
- NOTE (1) This approval constitutes a commitment to provide the necessary resources through the normal budget process.
- NOTE (2) Criterion 6 states that identification, approval and maintenance of necessary and sufficient sets of standards will be at the organizational level appropriate for effective management. With regard to the approval of necessary and sufficient sets of standards, this will usually be at the lowest level of management that has responsibility for managing the work affected by the necessary and sufficient set of standards and for managing the resources needed to perform the work.

DRAFT

NOTE: WHILE ESSENTIAL, THE ACTIVITIES DESCRIBED IN THE FOLLOWING TWO SECTIONS ARE NOT CENTRAL TO THE NECESSARY AND SUFFICIENT CLOSURE PROCESS AND THEREFORE ARE NOT DESCRIBED IN DETAIL.

3. INCORPORATING THE NECESSARY AND SUFFICIENT SET OF STANDARDS IN WORK PLANNING AND ACCOMPLISHMENT

To ensure that the expectations and agreements established between the Responsible Organization and the Customer Organization are successfully implemented, the **Responsible Organization**:

- A. Ensures that the necessary and sufficient set of standards and associated implementation assumptions become the operating basis for all activities covered by the set.
- B. Performs any agreed-upon actions which were approved with the set.

Methodologies for achieving these objectives are defined in existing business practices. Further definition is not central to the standards identification and closure process and therefore is not provided in this document.

4. EVALUATING WORK PERFORMANCE AGAINST THE NECESSARY AND SUFFICIENT SET OF STANDARDS

In order to create confidence in the agreed-upon necessary and sufficient set of standards and the process used to reach closure on the set, continuous assessment and feedback will be provided by the approval parties on the following:

- A. Whether performance expectations and objectives established during the necessary and sufficient closure process as measured by the approval parties are being met.
- B. Actual work performance as measured by the approval parties.
- C. The adequacy and feasibility of the necessary and sufficient set of standards as determined by the approval parties.
- D. The adequacy and effectiveness of various process elements within the necessary and sufficient closure and implementation processes.

These objectives are expected to be accomplished through existing practices. Further definition of these practices is not central to the standards identification and closure process and therefore is not provided in this document.

Fermilab Necessary and Sufficient ES&H Standards

Documentation of Record

July 14, 1995

Larry Coulson, Process Leader



Fermi National Accelerator Laboratory

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PROCESS DOCUMENTATION GUIDE

Initiating the Process

The implementation of the N&S pilot process at Fermilab was initiated by a February 23, 1995 memorandum from Wilmot Hess (ER-20) to Andrew Mravca (Manager, BAO). This activity was subsequently authorized by Martha Krebs (ER-1) and Tara O'Toole (EH-1). See Appendix A.

On 2/24/95 application for initiating the Pilot was submitted to and approved by the Department Standards Committee. On 2/27/95 a kickoff meeting was held at Fermilab to explain the process to Lab representatives and begin organizing the pilot. At that meeting the Responsible Organization named Larry Coulson the Process Leader.

Organization

The Chicago Operations Manger, Cherri Langenfeld, The Contracting Officer, Andrew Mravca, Director of HENP, Bill Hess, and the Deputy Director of Fermilab, Ken Stanfield, (later this group and some of their staff was named the Extended Convened Group) met and chose the members of the Convened Group. See Appendix B.

The Convened Group for the Fermilab Pilot N&S Process met several times to establish the protocols for the Pilot and create the Identification Team, and fulfill all the other requirements for the Convened Group as defined in Process Elements 1, 2, and 3. The minutes of the CG meetings and the other documents generated to document the process are displayed in Appendix B. The CG created and charted the IT as required in Process Element 2. The charter and list of IT members is displayed in Appendix B.

Hazard Identification

The Process Leader solicited information necessary to define the work to which the standards will apply. A bottoms-up, worker safety oriented "Hazard Identification Process" was employed by Fermilab to develop an initial list of hazard issues at the Laboratory. This list of hazard issues was the starting point for determining the set of N&S ES&H Standards for Fermilab. See Appendix C. Additional sources of

information used in developing and verifying the hazards issues list is also included in Appendix C. The list of issues given to the Identification Team is in Appendix E.

Stakeholders

Stakeholders were identified early and a document prepared to define the involvement of the stakeholders in the process. The Stakeholder Communication Plan and copies of all stakeholder input received is displayed in Appendix D.

Identification Team Meetings and Fermilab Review

The Identification Team met on three occasions. At its first and longest meeting, from May 8 to May 19, the Team reviewed all of the hazard issues which had been compiled by the Laboratory, and developed a draft set of ES&H standards for each of these issues. Each hazard issue was reviewed by one or more Identification Team "Focus Groups" (six sub-groups of the Identification Team, which were charged with identification of ES&H standards in six topic areas -- fire protection, radiation protection, environmental protection, occupational safety & health, emergency response, and management & oversight issues). The Focus Groups were assisted in their work by a number of specialized "Subject Matter Experts" (SMEs). The work of the Focus Groups was accomplished through a deliberative process represented by the fourteen parts of the "Fermilab Identification Team Documentation" (FITD) analysis report forms on which the results of the hazard issue analyses and ES&H standards identification processes were documented. Appendix E contains minutes of some of the meeting, a list of subject matter experts, the draft set, the Final FITD Forms, and Final Simi-Rolled-Up List of standards.

At its second meeting, on June 13 and 14, the Identification Team reviewed the consolidation and completion of the FITD forms and the development of a draft Set of N&S Standards which had been carried out by the Focus Group Leaders in the interim period; the Team also reviewed a first rough draft of a Team report. The Team reached consensus, as follows, on June 14: "The FITD Forms and the draft set of standards resulting from the FITD Forms are sufficiently close to final form that, with suggested changes, they may be sent for the next level of review, i.e. review by Fermilab, and the development of the (Team's) report will continue taking into account the guidance

received from the Team members." Appendix F has documentation of the second Identification Team meeting.

During the week of June 26, the draft Set of N&S Standards was presented to Fermilab for review in a series of meetings. The documentation of the meetings, issues raised and issue resolution is in Appendix G.

At its third meeting, on July 11, the IT reviewed the resolution of comments received since it last met and approved the Final Team Report which was presented at the Confirmation Meeting. Documentation of the third IT meeting and the Final Issue List is in Appendix H.

Confirmation and Approval

On July 12, the report and draft Set were presented to the Convened Group for confirmation. Documentation of the Confirmation Meeting, issues raised, and issue resolution is in Appendix I.

On July 14, the Agreement Parties approved the set of N&S Standards. At the same meeting the DOE-URA Contract was modified to incorporate the N&S Standards. Documentation of approval and the contract modification are in Appendix J.



Fermi National Accelerator Laboratory P.O.Box 500 • Batavia, II. • 60510-0500 708-840-3211 Fax: 708-840-2939

Director's Office

July 25, 1995

Ms. Margaret H. Sturdivant U.S. Department of Energy EH-31, 329/CXXI 19901 Germantown Road Germantown, MD 20585

Dear Ms. Sturdivant:

I wish to express my gratitude for all the help, encouragement, and advice that you, David, Dennie and others on your staff gave us during the Fermilab Pilot. Without that support we could not have succeeded.

I know that the DSC is searching for ways to assure themselves that the Pilots are a success when they finish. I have enclosed a report, (Fermilab Demonstration, Response to Criteria for Judging Success of Process Demonstration, July 25, 1995) which provides responses to questions developed by the SPAT 3/4. This report and the attachments should help provide a picture of the process used for implementation of the N&S process at Fermilab.

Please feel free to share the enclosure as appropriate.

Thanks again for your help.

Yours truly,

Larry, Coulson, Process Leader

LC:sa

Enclosure: As stated.

cc: R. Stefanski, w encl.

R. McCullum, w encl.

D. Goodwin, w encl.

A. Mravca, w encl.

E. Heitowit, w encl.

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Fermilab Demonstration Response To Criteria for Judging Success of Process Demonstration July 25, 1995

This document provides responses to questions prepared by the SPAT 3/4 of the DOE Department Standards Committee to gain a measure of the success of the Fermilab Demonstration of The Department of Energy Closure Process for Necessary and Sufficient Sets of Standards. The Fermilab Pilot was begun on February 27, 1995 and concluded with approval of a set on July 14, 1995. In addition to answering the questions, many documents are attached to provide a clear picture of the process as executed at Fermilab. Additional, more detailed, documentation is available in the Documentation of Record. The table of contents of the Documentation of Record is Attachment A to this document. Documents in the Documentation of Record are available from Fermilab. Currently these can be obtained by contacting Larry Coulson at 708-840-5242 (FAX: 708-840-2939; E-Mail: COULSON@FNAL.GOV).

Process Element 1 - Defining the Work and Hazards

Was the objective of the demonstration clearly defined?

Yes, the objective was defined in the demonstration's Charter as follows:

"The result of this pilot will be a set of standards which will serve as the agreed upon basis for providing FNAL with adequate Environment, Safety and Health Protection at the lowest possible cost. This pilot will seek out and emulate compatible industry practices which have been proven successful both in terms of safety performance and cost-effectiveness."

Was the work scope adequately defined?

Yes, the work scope was defined as all work done at Fermilab.

Were the various work hazards identified?

Yes, an extensive hazards identification process was employed. All work units at the lab were surveyed and asked to identify the hazards associated with their jobs. About 150 hazards and other ES&H issues (issues) were so identified. The results of this effort were combined with the results of other analysis efforts and evaluated by the Identification Team based on their knowledge of Fermilab's work to arrive at the final list of 172 hazards. Attachment B contains the issues list in its final form as it was at the end of the demonstration.

Were safety, environment, quality and operational goals identified?

Yes, Fermilab expects to be in the upper quartile of accident/incident and environmental protection experience for comparable industrial situations. The accident/injury record indicates this performance goal is already met.

Were resource availabilities and constraints identified and incorporated into the process and goals?

It was understood that the process itself would be conducted within existing resources. The customer and resource organizations adjusted their expectations for other things which could have been done with the same resources accordingly. It was also understood that any process result which would cause the laboratory to be more expensive to operate was not a desired result.

Process Element 2 - Creating the Teams

• Were organization and management relationships identified and considered?

Yes, this was the purpose of the "Expanded Convened Group". This group consisted of senior DOE and URA officials from all relevant organizational

and management entities. It was through the agreement of this group, based on their consideration of such relationships, that the approval authority was established and empowered to conduct the process. These relationships are reflected in the way the demonstration itself was organized. Attachment C is a copy of the organization developed for the demonstration.

Were requirements for team functions, relationships and composition established and implemented?

Yes, these were established in the demonstration's charter (Attachment D) and the Identification Team Charter (Attachment E). The minutes of the Convened Group and Identification Team and the Team's Final Report show that these requirements were followed.

• Were team members selected on basis of technical credentials and/or work experience?

Yes, both. Resumes were solicited for Identification Team membership by the Convened Group. The Convened Group reviewed these resumes to determine adequacy of technical credentials and assure that the team would have work experience in every one of the functional areas which would need to be covered. The Team Charter documents the requirements.

• Were outside technical experts added to the team when internal expertise was not available?

Yes, a special effort was made to involve persons outside the organizations of the Agreement Parties. The Identification Team included members from 4 other DOE peer laboratories. The Confirmation Panel consisted of representatives of 5 DOE peer laboratories. The Identification Team utilized 31 subject matter experts from Fermilab. Representatives from 2 universities were involved—one participated in both the Team work and confirmation and the other sent ES&H material. Representatives of 3 nearby, private sector companies conducting work similar to that done at Fermilab participated in a panel discussion to educate the Identification Team on how their companies

deal with ES&H issues, management of ES&H, and interactions with external regulatory agencies.

Were outside technical experts added to the team for confirmation?

Yes, the confirmation was a two step process. Fermilab was given a chance to review and comment of the draft set. This involved many of the Fermilab experts and the top management through the ES&H Policy Advisory Committee.

A confirmation panel consisting of experts from 5 DOE laboratories and 1 non-DOE laboratory along with the "Convened Group" and "Extended Convened Group" was assembled to review the set and participate in the confirmation meeting where the panel's instructions were to "challenge" the set. This oral challenge of the set was a structured question and answer session analogous to a thesis defense. Each member of the panel was given opportunity to raise issues concerning the set, all issues raised were resolved prior to approval.

Process Element 3 - Defining & Agreeing to Protocols & Documentation

• Did the process leader carry out the actions in the process description?

Yes, the process leader comprehensively implemented all elements of the process and rigorously documented that this was done. All of this documentation is contained in the Documentation of Record.

 Were all relevant parties identified and provided opportunity to participate?

Yes, the "convened group" consisted of representatives of each of the 3 agreement parties (responsible organization, customer organization and resource authority) and the process leader. Consideration to all other relevant

parties was provided for though the much broader "extended convened group". Relevant parties also participated on the Identification Team and played a part in the confirmation process. Attachment F is the membership lists of the Identification Team and the Confirmation Team.

• Did the Agreement Parties identify relevant work planning participants (stakeholders)?

Yes, a participation plan was developed by the Convened Group to address all stakeholder relationships. The plan and a report on the participation of each group is in Attachment G.

Were protocols established for conducting the process?

Yes, a Process Charter (Attachment D) was developed and agreed to by the Convened Group containing all relevant protocols.

Were protocols established for resolving differing opinions?

Yes, this was specifically addressed in the Process Charter and built into the pilot's organizational structure.

Were documentation requirements established?

Yes, this was specifically addressed in the Process Charter.

Was information recorded in conformance with documentation requirements?

Yes, this is documented in the Documentation of Record.

Process Element 4 - Identifying the Necessary and Sufficient Set

 Was the work scope (if adjusted) clearly defined and were hazards clearly identified?

The Fermilab work scope did not need to be adjusted to identify a necessary and sufficient set of standards.

• Was the Necessary and Sufficient Set compiled in an understandable format?

The set was compiled in a format that was convenient for participants and for the contract modification. However, others found it somewhat difficult to use. Improvements can be made based on the comments of others. The set is contained in Attachment H.

• Did the team provide justification for the adequacy of the Necessary and Sufficient Set?

Yes, it was shown that each identified issue at Fermilab was adequately covered by a standard or standards included in the set. This was documented on a Fermilab Identification Team Document (FITD) for each hazard. The full final set of FITDs are in the Documentation of Record. Attachment I is an example of a completed form. Also the final Team Report, Attachment J, addresses this issue.

• Were implementing assumptions needed to reach agreement on the set?

Only one, which concerned management systems and was addressed by including language in the contract modification associated with the set.

Nearly all of the standards in the set are already part of the Fermilab ES&H program and thus represent very little new to implement.

Was a unanimous agreement reached on the set or were there dissenting opinions?

The agreement was unanimous. This is attested to by the fact that all members of the identification team signed the set (see Attachment J), with no added comments, and were present at the confirmation meeting to defend it.

Were applicable laws and regulations judged not to add value identified?

Yes, evaluations of the value added by specific standards were made on every one of the FITD forms. Examples where non-value added laws and regulations were identified are in Attachment K.

Process Element 5 - Approving the Necessary and Sufficient Set

• Did the Approval Authorities document that the principles of the Process had been followed?

Yes, the demonstration's adherence to the process is described in the approval documentation which was signed by these authorities in approving the standards set. (See Attachment L.)

• If there were implementing assumptions, were they reasonable?

Yes, the only implementing assumption was the contractual expectation that Fermilab have in place appropriate management systems so that the set could be implemented. Considering the good track record of this laboratory's management, this seems reasonable. As mentioned earlier, implementation will not be difficult as most all standards are already part of the ES&H program.

Was there a dissenting opinion at the time of approval?

No

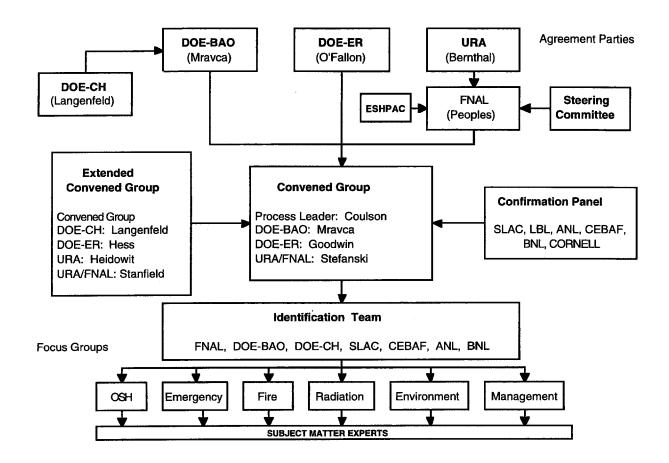
• Did the Approval Authority affirm that confirmation of the set is adequate to support approval?

Yes, each of the approval authorities was either present or represented at the confirmation meeting. At the conclusion of the confirmation meeting all attendees agreed that, pending resolution of 3 open issues, they considered the set adequately confirmed. Each of these issues was resolved to the satisfaction of those raising the issues prior to approval of the set.

• Was the Necessary and Sufficient Set approved?

Yes, by signature of all approval authorities. (See Attachment L.)

Fermilab N&S Pilot Organizational Structure



FERMILAB PILOT FOR THE NECESSARY AND SUFFICIENT CLOSURE PROCESS STAKEHOLDER PARTICIPATION PLAN 6/14/95

One of the vital elements of the Necessary and Sufficient Process is the identification and involvement of Stakeholders. This plan identifies the stakeholders and specifies the degree and mechanisms for their involvement.

Department Standards Committee

The Department Standards Committee (DSC) is a stakeholder. Communication with the DSC will be through Rod McCullum who will act as a Subject Matter Expert for the Team and also is a member of SPAT 3/4 of the DSC. Contact with the DSC is also maintained through the DOE-ER and the DOE-CH representatives on the DSC.

DOE-EM

The DOE-EM is a stakeholder. Communication with DOE-EM will be provided by a liaison arrangement between a Team Member, Jon Cooper (DOE-BAO-ER), and Sally Arnold (DOE-BAO-EM). Jon will relay EM concerns to the Team.

DOE-EH

DOE-EH as a stakeholder will communicate with the Team by the liaison arrangement between a Team member, Paul Neeson (DOE-CH), and Maggie Sturdivant (DOE-EH-31). The Process Leader will also invite Maggie Sturdivant to send a technically qualified observer to some Team meetings.

Employees and Union Members

The Fermilab employees, union and nonunion, will be notified about the Necessary and Sufficient Process Pilot and with invitation to comment though a publicity article in the Fermilab newspaper. A copy of the Pilot Charter, Identification Team Charter, Stakeholder Plan, and a list of ES&H issues being considered will be put in each division/section

office. Every employee will be notified and invited to comment. Their input will be brought to the Team by the Process Leader.

Public

The public involvement as stakeholders will be solicited in a news release. The Process Leader will bring public concerns to the Team. The participation is not expected to be significant because of the history of interactions between the public and Fermilab.

1) The few public hearings held have drawn insignificant comments from the public,
2) public notices for environmental permits typically bring no comments, 3) Fermilab is
designated a low hazard facility, 4) as documented in the 1993 Environmental Report the
maximum annual site boundary dose is typically less than 0.001 rem and the potential
radiation dose to the public is typically less than 0.1 person rem, 5) The Hazard
Assessment done in 1994 indicates that the only potential for impact to the public from
chemicals comes from chlorine used to treat water—the use of that material has now been
discontinued, 6) The Lab maintains membership with two intergovernmental
organizations. There are no outstanding ES&H issues with either organization, 7) The
Lab belongs to two "local industrial peer" groups, the East West Corporate Corridor
Association and the Fermilab Industrial Affiliates. There are no outstanding ES&H issues
with either of these organizations, and 8) there have been no occasions for ES&H related
agreements with public.

In summary there is no history of public concerns with the ES&H impacts of Fermilab and no reason to expect that will change with this process. Fermilab is an open site—with tens of thousands of visitors each year. Thousands of the members of the public annually attend regularly scheduled social events held on the site.

Agreements do exist with neighboring communities to share resources for emergency responses, i.e. mutual aid agreements. If as a result of this process, it appears that those agreements could be impacted those communities will be consulted.

Regulators, State and Local

Fermilab has every intention of continuing to comply with applicable Federal State and local regulations. These stakeholders will not be consulted unless it is determined during this process that the ability to meet their expressed expectations will be altered. There is

essentially no potential for off-site impact, either now, nor will there be after any changes which this process could produce. There are no formal local or state agreements which could be impacted by this process.

Research Community

A liaison relation has been established with the research, user, community. Their input will be coordinated by a physicist team member acting as liaison with the User Executive Committee representative.

Subcontractors

Subcontractors that are presently working at the site, or have worked at the site in the past few years, will be informed of the process by letter from the Fermilab contracts office. They will be requested to send their comments to the contracts officer. That input from the subcontractors will be relayed to the Team by the Process Leader.

Issue Identification Process



Director's Office

March 22, 1995

To:

Division/Section Heads

From:

Larry Coulson

Subject:

Information Needed for the Necessary and Sufficient

Standards Pilot

We are in the process of setting up meetings to discuss and collect information needed for the Pilot Project for Necessary and Sufficient Standards. The information collected from you, and other sources, will be used to characterize the work and hazards at the Lab. These data will form the basis for the information which will be presented to the Standards Identification Team which will recommend the Necessary and Sufficient Standards. For this process to be successful on such a short time scale, we will need your cooperation in assembling comprehensive information on the work processes and hazards within your organization. We hope to finish this phase of the process by April 3.

Attached is a preliminary hazard list and a list of questions. These attachments represent the information we need about <u>each group</u> within your division/section. (I have in mind here, that a group is the same as a "box" on the large organization chart.) Please make a copy of the attachments for each group (box). If several groups (boxes) have similar hazards and activities you may want to lump them together. In order to keep the meetings short, it would be useful to have as much of the information as possible filled out ahead of time for each group. To speed analysis of data and preparation of the information for submission to the Standards Identification team, we would like to collect as much information as possible electronically in MSWord

(MAC) format. To facilitate this, the same information will be sent to you electronically.

At the meetings, please have 1) either yourself or other d/s management representative, 2) your SSO, (attendance of other ES&H personnel from your d/s is at your discretion), and 3) sufficient management/supervisory persons to be knowledgeable about the information being requested for each group (box). Also in attendance will be a Discussion Leader (Tim Miller, Ray Stefanski, Don Cossairt, or Larry Coulson) and some ES&H Subject Matter Experts either from the ES&H Section or elsewhere in the Lab.

Thank you for your cooperation on such short notice. Please call me (ext. 5242) if you have any questions.

cc: SSOs Ray Stefanski D. Cossairt T. Miller

INFORMATION TO BE COLLECTED FOR EACH GROUP

DIVISION/SECTION		DATE	/ /95
GR	OUP	.	
CO	NTRIBUTORS AND ATTENDEES AND THEIR AFF	FILIATION (co	ollect at meeting)
1.	Are there specific performance expectations group? (e.g. goals for safety, quality, and o		ctives for this
2.	Describe the work activities of this group. It that a knowledgeable technical person will work and how the hazards checked on the hwork. Generally a few sentences should be	understand th azards list ei	ne nature of the
3.	Physical and environmental conditions within performed (e.g. office, outdoors, in the tunn		work is
4.	Materials and conditions that could cause ac example, see the attached Preliminary Hazard		quences? (For
5.	Uncertainties which could affect the work (changes, regulatory uncertainties, new tec		program
6.	Organization and management issues that cou	uld affect th	e work?

7. What protective equipment is used? 8. Are there any protective systems used (e.g. alarm systems, interlocks, etc.)? 9. Are special standards or requirements imposed beyond the usual Fermilab standards and requirements? 10. Are there any special training needs, either already done or needing to be done? 11. Are there special environmental pollution potentials as a result of this groups activities? 12. Are there special vulnerabilities for the Lab (e.g. possible fines, public relation problems, or civil/criminal penalties)? 13. What hazards do you judge to need more resources than now available?

14. What required activities do you consider a waste of your resources.

Instructions Filling Out the Preliminary Hazard List

This is intended to be a generic list of hazards potentially found at Fermilab. The work of any particular group may involve exposure to one or more of these hazards. Please indicate which hazards apply to the group by filling out the two columns next to applicable hazards. If you believe there are issues not indicated in the hazard list please list those at the bottom of the list. The two columns labeled "rank" and "OFEP" should be filled out as follows.

• The column labeled "class" is intended to allow you to indicate the subjective "seriousness rank" of the hazard. It is a simple ranking:

1= a serious hazard common in the work of the group.

2= a serious hazard but uncommon in the work of the group, or a minor hazard common in the work.

3= a minor hazard which is not a significant aspect of the work.

If you rank a hazard as 1, please indicate on the work sheet, in item 2 above, what work activity involves that hazard.

• The column labeled OFEP is used to indicate the scope of the hazard as follows:

Enter all letters that apply.

O= an <u>occupational</u> exposure, i.e. the hazard has potential impact only for those working in the immediate area.

F= could impact workers within the <u>facility</u> but not likely to impact the environment outside the facility.

E= a hazard which could have <u>environmental</u> consequences, e.g. a solvent which could be spilled in large enough quantities to cause environmental pollution outside the facility.

P= a hazard which could have consequences to the off-site <u>public</u>.

INFORMATION TO BE COLLECTED FOR EACH GROUP

DIVISION/SECTION	DATE	/ /95
GROUP	,,,, *	
CONTRIBUTORS AND ATTENDERS AND THEIR AFEILIAT	CION (collect at	meeting)

Fermilab Preliminary Hazard List, cont'd.

Fermilab	Prelim	inary	Hazard List, cont'd.		
HAZARD	CLASS	OFEP	HAZARD	CLASS	OFEP
OXYGEN DEFICIENCY HAZARDS			RADIATION HAZARDS	T	
cryogenic spills			prompt radiation		
cryogenic gas or liquid leak			radiation check sources		
gaseous argon or other detector gas			residual radiation/activated components		
chemical spills			contamination		
leak of supplied gases			storage/handling of radioactive materials		
toxic gases			radioactive waste		
			mixed waste		
FIRE HAZARDS			radioactive liquids or gasses		
electrical			radioactivated soil		
flammable liquids or gases			depleted uranium		
welding			special nuclear materials		
spark producing tools near combustibles			-		
spontaneous combustion			MATERIAL HANDLING HAZARDS		
storage of combustibles			cranes & hoists		
special occupancies (NFPA)			fork lift operation		
mobile structures (portakamps)			chemical spills		
transportation (rail, vehicle, fueling)			lifting objects		
special hazardous materials			falling objects		
boiler, furnace, heating systems and			moving objects		
appliances			hazardous tools, equipment and machinery		
stationary combustion engines			transportation		
cigarette smoking			elevators used for hazardous materials		
			storage/handling of toxic materials		
ELECTRICAL HAZARDS					
low voltage/high current			ENVIRONMENTAL		
exposed 115 V			PCB's		
high voltage			hazardous waste		
high power			asbestos		
stored energy/capacitors			surface water discharges		
stored energy/inductors			endangered species issues		
lightning			archeological requirements	-	-
battery			air emissions sources-radioactive		
			air emissions sources-nonradioactive		
NONIONIZING RADIATION			transformer oil (non-PCB)		
lasers			solid waste management units		
radio frequency radiation			regulated chemical wastes		
ultraviolet light			groundwater protection		
intense light sources			ozone depleting substances	1	
			pesticide application/use		
MAGNETIC FIELDS			sewer discharges		
quench effects			offsite radiation exposure		
fringe fields			sanitary effluent discharge	1 -	
high magnetic fields			drinking water quality		
bioelectronic emplants			The state of the s		
The second secon				I	

Fermilab Preliminary Hazard List, cont'd.

HAZARD	CLASS	OFEP
BIOLOGICAL FACTORS		
animals		-
insects		
poison plants		
bloodborne pathogens		
bacteria (water)		
allergies		

CONSTRUCTION HAZARDS		
heavy equipment		
local community impact		
earth cave in/collapse		
flooding-rain or groundwater		
environmental-air/water pollution		
dewatering hazard		
transportation and logistics		
materials handling		
possibility of hitting utilities		
hand tools.		
high winds		
fall hazards		
scaffolding		
ladder		
compressed gas		
earth moving equipment		
demolition		
earth clearing		
THERMAL		
cold work environments		
cryogens		
high temperature equipment		
vacuum pumps		
battery bank and UPS equipment		
hot work environments		
wet work environments		
ultraviolet radiation (sun exposure)		
OTHER PERSONNEL HAZARDS		
sharp edges		
vacuum tanks		
traffic hazards		
pinch hazards		
work on wet surfaces		
confined spaces		
lifting/carrying heavy objects		
working at heights	ļl	
repetitive motion		
vibrating equipment (tools or surfaces)		
dry environment		
high noise levels		
housekeeping		
icy walking/working surfaces		
slips, trips & falls		
	1	
hazards requiring PPE		

HAZARD	CLASS	OFEP
CHEMICAL HAZARDS		
acids, solvents, toxic agents and haz liquids		
heavy metals such as lead		
chemical reactions		
toxicity in smoke or fumes		
pesticides		
welding fumes		
use of toxic materials		
carbon monoxide		
carcinogens		
nuisance dusts		
cutting/burning		
chemical exposure - exceeding PEL		
OTHER MECHANICAL HAZARDS		
machinery and rotating parts		
pressurized tanks, containers and lines		
moving vehicles, carts, forklifts		
material grinding, cutting, drilling		
special hand tools-power driven nail guns, etc.		
work with roads and grounds equipment		
means of egress		
powered platforms		
medical and first aid		
machine guarding		
general environmental control		
HAZARDOUS MATERIALS TRANSPORTATION		
loading/unloading		
spills/chemical releases		
emergency response/spill clean-up		
fire/explosion		
packaging hazardous materials		
bad road conditions (e.g., icy)		
prolonged periods of driving		
suspect/counterfeit parts		

Members of the Extended Convened Group and Convened Group

Members of the Extended Convened Group

Larry Coulson: Process Leader

Dave Goodwin: High Energy and Nuclear Physics, ER

Ezra Heitowit: Vice President of URA

Wilmot Hess: Director of High Energy and Nuclear Physics, ER

Cherri Langenfeld: Head Chicago Operations Office

Andrew Mravca: Contracting Officer and Head of DOE-BAO

Ken Stanfield: Deputy Director of Fermilab

Ray Stefanski: Fermilab, Associate Director for Operations Support

Members of the Convened Group

Larry Coulson: Process Leader

Dave Goodwin: High Energy and Nuclear Physics, DOE-ER Andrew Mravca: Contracting Officer and Head of DOE-BAO

Ray Stefanski: Fermilab, Associate Director for Operations Support

Charter

Department of Energy Fermilab Standards Closure Process 6/14/95 - Revision 1

Objective:

This document outlines the plans and protocols for conducting a pilot of the Department of Energy's Necessary & Sufficient Closure Process (Attachment A) at Fermilab National Accelerator Laboratory (FNAL) in Batavia, Illinois. The result of this pilot will be a set of standards which will serve as the agreed upon basis for providing FNAL with adequate Environment, Safety and Health Protection at the lowest possible cost. This pilot will seek out and emulate compatible industry practices which have been proven successful both in terms of safety performance and cost-effectiveness. This charter has been developed as a partnership effort by the parties to this agreement (see "Responsibilities" below), and is considered to be a living document.

Responsibilities:

Process Leader:

The Process Leader's responsibilities are as defined in Process Elements 1 and 3 of Attachment A. Larry Coulson of FNAL has this responsibility.

Convened Group:

This Group's responsibilities are defined in Process Elements 2 and 3 of Attachment A. This group also has ownership of this charter document. It consists of the following individuals:

Larry Coulson - Process Leader
Ray Stefanski - FNAL Representative
Andy Mravca - DOE-BAO Representative
Dave Goodwin - DOE-ER Representative
Rod McCullum - DOE-CH, Technical Resource

Extended Convened Group:

Provide management support to the Convened Group (including interactions with the Department Standards Committee and other stakeholders). This group has been formed in addition to what is called for by the Process Description because this is a pilot exercise which will receive a greater degree of Department-wide scrutiny than would normally be expected. It consists of the following individuals:

Responsibilities (continued):

All Members of the Convened Group Ken Stanfield - Deputy Director, FNAL Cherri Langenfeld - Manager, DOE-CH Bill Hess - Associate Director, High Energy Physics, DOE-ER Ezra Heitowit - Vice President, URA

FNAL Steering Committee:

This group provides a mechanism for the Process Leader to obtain internal review and guidance on the mechanics of FNAL participation. It will consist of the following individuals:

Larry Coulson - Process Leader
Bruce Chrisman - Associate Director for Administration
Ray Stefanski - Associate Director for Operations Support
Don Cossairt - Senior Laboratory Safety Officer & Head of
ES&H Section
Tim Miller - Deputy Head of the ES&H Section
Hans Jostlein - FNAL Standards Manager
Kathy Williams - Manager, Quality Assurance Office

Identification Team (IT):

This group's responsibilities for identifying and confirming the set of standards are defined in Process Elements 3, 4 and 5 of Attachment A. Its membership will be determined by the Convened Group. The IT will consist of the Process Leader, URA representatives, DOE representatives, sister labs, other parties and subject matter experts as needed.

Agreement Parties:

The agreement parties are the authorities that must approve the Set of Standards. The Extended Convened Group has agreed that the following individuals have approval authority for the FNAL Set of Standards:

Responsible Organization - Fred Bernthal, President, Universities Research Association

Resource Authority - John O'Fallon, Director, High Energy Physics Division, Office of Energy Research

Customer Organization - Andy Mravca, Manager, DOE Batavia Area Office

Action Plan:

Actions Leading to the development of this charter:

1.	2/23/95	The Resource Authority (Bill Hess -ER) transmits a memorandum to the Customer Organization (Andy Mravca - BAO) providing instructions to proceed with a pilot of the Necessary and Sufficient Closure Process.
2.	2/24/95	The Department Standards Committee approves the Necessary & Sufficient Closure Process Description (Attachment A) and the list of proposed pilots (including FNAL).
3.	2/27/95	Kick-off meeting for this pilot held at Fermilab, Representatives of the Department Standards Committee were present to introduce the Necessary & Sufficient Closure Process (Attachment A).
4.	3/10/95	Expanded Convened Group meets to discuss expectations for the pilot project.
5.	3/16/95	FNAL Steering Committee agrees on proposed action plan.
6.	3/20/95	FNAL begins its internal baseline process of acquiring relevant information on FNAL work processes as defined in Process Element 1, [3], A-F of Attachment A. A Preliminary Hazards List will be used to begin the hazards analysis. The DOE Orders at Fermilab book, the CDF Hazards Analysis, the D0 and Accelerator Safety Assessment Documents, and the Fermilab Hazard Assessment Document will also be available for the hazard analysis.
7.	3/20/95	DOE begins the process of assembling information on its input as called for in Process Element 1, [3], A-F of Attachment A.
8.	3/22/95	The Convened Group holds its first weekly meeting to identify Customer Organization, Responsible Organization, Stakeholders, and Resource Authority. FNAL, DOE-BAO and ER input to the Process Leader in response to Process Element 1, [3], A-F of Attachment A is also discussed. It is agreed to incorporate the FNAL Steering Committee Action Plan along with agreed upon protocols into this charter document.

Action Plan (continued):

8. 3/22/95 (continued)

These meetings will be scheduled at least weekly until the Convened Group responsibilities, as defined in Process Element 2, Process Element 3[1] and Process Element 3[2] are completed.

Actions Planned to complete the task of identifying a Set of Standards:

- 1. 3/27/95 The Process Leader will set up the Identification Team (IT):
 - The IT will consist of the Process Leader, URA representatives, DOE representatives, sister labs, other parties and subject matter experts as needed. Composition of the IT will be determined by the Convened Group. If necessary, the Process Leader will interview prospective team members.
 - The criteria for membership on the IT will be defined, with the agreement of the Convened Group, and documented.
 - The qualifications of the IT members will be documented.
- 2. 4/26/95 Under the direction of the Process Leader, Fermilab prepares materials that will be used for the closure process by this date. These materials, which will include an initial hazard analysis, will be presented to a full meeting of the Fermilab ES&H Policy Committee (ESHPAC). A progress report will be submitted to URA.
- 3. 5/1/95 Materials assembled by the Process Leader and distributed to the IT.
- 4. 5/8/95 IT meets to begin the process of developing the "final"
 Necessary and Sufficient Set. A presentation to the
 Fermilab Director will take place before the Necessary and
 Sufficient Set is finalized.

Somewhat concurrently, the Agreement Parties will evaluate the Necessary and Sufficient Set for resource requirements. ESHMAP (The Fermilab ES&H Management Plan) would be drawn upon for budget data.

Action Plan (continued):

- 5. 6/8/95 External Stakeholder involvement (if any) will be scheduled. Appropriate meetings and reviews will be set up with identified stakeholders by the stakeholder liaisons on the IT.
- 6. 7/12/95 IT presents the NS set to the Convened Group.
- 7. 7/14/95 NS sent to Agreement Parties for approval. This should complete the closure process if the Approval Authority approves the NS. If not, the IT will meet again to modify NS and resubmit for final approval.

Upon approval of the Necessary and Sufficient Set of Standards, the FNAL contract will be modified to incorporate them.

8. When needed If there is a need in the future to modify the NS, the Convened Group will be consulted.

Protocols:

Approval of Standards Set:

The Standards Set will be considered approved when it has been agreed to and signed by the following parties in the order listed:

Responsible Organization - Fred Bernthal, President, Universities Research Association, Inc.

Resource Authority - John O'Fallon, Director, High Energy Physics Division, Office of Energy Research

Customer Organization - Andy Mravca, Manager, DOE Batavia Area Office

Instructions to the Identification Team (IT):

The Convened Group will issue a charter letter to the IT outlining its expectations for their conduct of this pilot process.

Scope of Standards Set:

The Necessary and Sufficient Set of Standards will focus on standards in the area of Environment, Safety and Health (ESH). This is defined as any functional area that is addressed in DOE's Guidance Manual for the ESH Management Plan (dated October, 1994). Any decision to include areas beyond ESH will be made by agreement of the Convened Group and included in the final instructions to the Identification Team (IT).

Protocols (continued):

Documentation of Standards Set:

The specific format and level of detail with which the standards set will be documented will be decided by the Identification Team (IT). The Convened Group expects that this document will include, at a minimum, a listing of the standards and a summary discussion sufficient to communicate an understanding of the relationship between the FNAL's work, its associated hazards and the standards selected.

Confirmation of Standards Set:

Once the Identification Team (IT) has completed assembling the set of standards, it will be expected to hold a final Team meeting(s), with all members present, to confirm that the IT believes that the set as a whole is adequate. Once that is done, they shall present the set first to FNAL for concurrence (see Attachment B for details) and then to the Convened Group. The Convened Group will assemble a panel of subject matter experts who will be expected to orally challenge the set and the IT will be called upon to defend it (see Attachment C for details). Once the IT has successfully defended the set, it will be considered confirmed and the Convened Group will recommend it for approval.

Interactions between Convened Group and Identification Team (IT):

Throughout this process, the Process Leader will act as the liaison between the IT and the Convened Group.

Effort Tracking:

The Process Leader will be responsible for preparing an estimate of the costs incurred by the Identification Team (IT) in preparing this set sufficient to facilitate an evaluation of the impact of this pilot exercise.

Stakeholder Liaisons:

In order to keep the Identification Team (IT) to a workable size, it will not be possible to include all stakeholders on the team. Therefore, liaison relationships will be established between specific members of the IT and appropriate stakeholders. Formal communications between the IT liaisons and their assigned stakeholders will be required and documented.

Protocols (continued):

Consensus:

The Identification Team (IT) will need to establish its own protocols for reaching consensus on the set of standards. If at any point, they are unable to reach consensus on any issue, they may bring this issue for resolution to the Convened Group.

Signature Convened Group	
Larry Coulson, Process Leader	
Ray Stefanski, FNAL	
Dave Goodwin, DOE-ER, High Energy Physics	
, , , , , , , , , , , , , , , , , , , ,	
Andy Mrayca, DOE-BAO	_

Attachment A: Department of Energy's Necessary & Sufficient Closure Process

Attachment B: Fermilab Protocol Confirmation of the Draft Set

Attachment C: Convened Group Protocol Confirmation of the Draft Set

Charter

Fermilab Standards Closure Process

Attachment B

Fermilab Protocol Confirmation of the Draft Set

6/7/95

- When the Identification Team releases a draft of the N&S Set of Standards a copy will be sent to URA, ESHPAC members, and division/section heads. Instructions will go to division/section heads to orchestrate a review with appropriate personnel within their organizations and prepare written comments to go with their ESHPAC representative to an ESHPAC meeting in about 3 days. Backup information, such as the issue forms, will be provided on a server.
- At an ESHPAC meeting the draft set and division/section comments will be discussed. N&S Identification Team Focus Group leaders will be present to provide explanations and help resolve issues.
- A few days later there will be a meeting of the ESHPAC with division/ section heads and the Director. The set and unresolved comments will be discussed. N&S Identification Team Focus Group leaders will be present to provide explanations and help resolve issues.
- The Lab's comments will be prepared from the minutes of the above meeting. The comments will be sent back to the Identification Team.

Charter

Fermilab Standards Closure Process

Attachment C

Convened Group Protocol Confirmation of the Draft Set

6/7/95

- A Confirmation Panel of about 5 persons will be assembled to assist the
 Convened Group in confirmation of the draft set of standards. The Process
 Leader will select the Panel from a list of names approved by the Convened
 Group. The candidates will be peers from other Laboratories. In most
 cases these will be the ES&H Directors, their deputies, or higher ranking
 personnel.
- The Draft Set will be sent to the Convened Group and Confirmation Panel for their review prior to the confirmation meeting. Members of Extended Convened Group, observers and technical resource people will also be invited. Technical resource people for this meeting will be persons expert in the N&S Process. Protocol for this meeting and the list of technical resource people will be developed by the Process Leader in consultation with the Convened Group.
- The Convened Group will meet, if necessary, to resolve issues presented but not resolved at the Convened Group confirmation meeting. This is the final step in the confirmation process.
- At the end of the confirmation process the set will be considered confirmed and ready for signature by the Agreement Parties.

FERMILAB PILOT NECESSARY AND SUFFICIENT PROCESS IDENTIFICATION TEAM CHARTER APRIL 20, 1995

Charge to the TEAM

Fermilab is conducting a pilot program to develop a set of ES&H standards which is both necessary and sufficient to protect the workers, the public, and the environment. A necessary and sufficient set of standards is one that (a) meets applicable laws and regulations, and (b) provides adequate protection at the lowest possible cost.

The format being followed for this pilot is The Department of Energy Closure Process for Necessary and Sufficient Sets of Standards, dated February 24, 1995 (the Process). The Process calls for the creation of a Convened Group which represents the agreement parties (Fermilab, DOE-ER, and DOE-BAO). The Convened Group charters the Identification Team (Team). The Team is asked to identify a necessary and sufficient set of standards (Set) using the guidance given in the Process and direction from the Convened Group. The Set will serve as the agreed upon basis for providing FNAL with adequate Environment, Safety and Health Protection at the lowest possible cost.

The responsibilities of the Team are as described in the Process Elements 3, 4, and 5 of the Process. Primarily, the Team is asked to:

- a. Review information presented concerning the goals, work processes, hazards, stakeholders' concerns, etc.;
- b. Request more information if needed;
- c. Assume compliance with applicable laws and regulations (OSHA, EPA, etc.);
- d. Determine what standards are needed in addition to the applicable laws and regulations to meet needs of the work and goals;
- e. The Convened Group will ask various members of the Team to be liaison with Stakeholders. Generally, the liaison responsibilities are to represent the interests of the Stakeholder in the deliberations of the Team. Specific responsibilities will be defined in writing for each assignment;
- f. Present the Set to the Fermilab Director and/or his delegates; and,
- g. In addition, the Team will be asked to defend the Set to the Convened Group as a confirmation process.

The Team is asked to consider the following guidance:

- No justification is required for any DOE Order(s) not included.
- Applicable Federal, State, and local laws shall be included.
- The Set may include the following four kinds of standards:
 - 1. External standards required by law (OSHA, EPA, etc.).
 - 2. External standards not required by law (ASME, ANSI, etc.).
 - 3. DOE regulated standards (10CFR835, etc.) and any other DOE standards (Orders, Tech. Standards, Guides, etc.) that the Identification Team judges as required for the set to be sufficient.
 - 4. Fermilab standards (Laser Safety, Accelerator Safety, Oxygen Deficiency Hazards, etc.). These are standards which are developed, approved and maintained by Fermilab.

Issue Resolution

Issues not resolved by the Team will be sent to the Convened Group for resolution. The Team should also seek clarification and guidance from the Convened Group as necessary.

Team Membership and Qualifications

The Team Leader will be the Process Leader, Larry Coulson. About twelve other members will be selected based on the protocols of the Convened Group, using the following process.

Biographies will be solicited from candidates with substantive experience with large research accelerators. Bio statements should summarize academic and work experience, external regulatory background, standards experience, publication history, and availability during the period May 1 through June 30, 1995. These statements will be evaluated against the following 4 ranking factors:

- 1. Knowledge of large research accelerators.
- 2. Knowledge of 1 or more of the 6 core functional areas (see below).
- 3. Demonstrated ability to function in a team environment.

4. Other experience/qualifications described in the Bio which are judged to be of exceptional value to the process.

The process leader will solicit candidate members, the convened group will then make selections based on these factors. Interviews may be conducted.

ES&H Functional Areas

The ES&H functional areas are distilled from the DOE's Guidance Manual for the ES&H Management Plan (dated October, 1994) as:

- 1. Fire Protection.
- 2. Radiation Protection.
- 3. Occupational Safety (including industrial safety, industrial hygiene, and occupational medicine).
- 4. Emergency Preparedness.
- 5. Management & Oversight.
- 6. Environmental Protection (including packaging and transportation, environmental restoration, decontamination and decommissioning, and waste management).

Technical Advisors

The Team may draw on Subject Matter Experts (SMEs) to supplement the Team expertise. It is left to the Team to set criteria and protocols for SMEs use. The Process Leader will ensure that a SME is available to provide assistance with legal issues.

Observers

A total of not more than two observers may be permitted at the discretion of the Team Chair. Convened Group members may not be observers.

Members of the Identification Team and Confirmation Panel

Members of the Identification Team

Larry Coulson, Process Leader
Jim Boyce, CEBAF
Jon Cooper, DOE-BAO
Don Cossairt, Fermilab
John Elais, Fermilab
Nancy Grossman, Fermilab
David Gordon, SLAC
Tom McDermott, DOE-CH
Tim Miller, Fermilab
Steve Musolino, BNL
Paul Neeson, DOE-CH
Linc Read, Fermilab
Mary Hall Ross, SLAC
Tim Tess, ANL
Rod Walton, Fermilab

Members of the Confirmation Panel

Steve Gray, Safety Director, CESR, Cornell Beverly Hartline, Project Manager, CEBAF Ken Kase, ES&H Manager, SLAC David McGraw, ES&H Manager, LBNL Otto White, Deputy ES&H Manager, BNL Robert Wynveen, ES&H Manager ANL

Identification Team Qualification Summary

There are 15 members counting the Process Leader. Of these:

- 14 have work experience at a large research accelerator,
- 12 have had full time ES&H responsibilities at a large research accelerator, and
- 6 have had full time research experience at a large accelerator.

The IT members experience represent:

- 169 years of experience at a large research accelerator,
- 117 years of experience at Fermilab,
- 84 years of experience with ES&H at a large research accelerator, and
- 7 years of external regulatory experience (EPA and OSHA).

The education of the IT members:

- 9 Ph.D. degrees (physics, biology, health physics, and industrial hygiene),
- 5 MS degrees (occupational safety, physics, environmental science, public administration, and geology), and
- 1 BS degree (fire protection engineering).

Final List of 172 Issues

001.	Bio - animals
002.	Bio - bacteria (water)
003.	Bio - bloodborne pathogens
004.	Bio - insects
005.	Bio - plants
006.	Chem - acids, solvents, toxic agents and haz. liquids
007.	Chem - carbon monoxide
008.	Chem - carcinogens
009.	Chem - chemical exposeures exceeding PEL.
010.	Chem - chemical reactions
011.	Chem - cutting and burning
012.	Chem - heavy metals such as lead
013.	Chem - nuisance dusts
014.	Chem - pesticides
015.	Chem - toxicity in smoke or fumes
016.	Chem - use of toxic materials
017.	Chem - welding fumes
018.	Construction - compressed gasses
019.	Construction - demolition
020.	Construction - dewatering hazard
021.	Construction - earth cave-in and collapse
022.	Construction - earth moving equipment
024.	Construction - earth clearing
025.	Construction - fall hazards
027.	Construction - hand tools
028.	Construction - heavy equipment
029.	Construction - high winds
030.	Construction - ladder
032.	Construction - materials handling
033.	Construction - possibility of hitting utilities
034.	Construction - scaffolding
035.	Construction - transportation
036.	Electricity - battery
037.	Electricity - exposed conductors / >50 volts
038.	Electricity - high voltage

- 039. Electricity high power
- 040. Electricity lightning
- 041. Electricity high current conductors / <50 volts
- 042. Electricity stored energy / capacitors
- 043. Electricity stored energy / inductors
- 044. Env air emissions / nonrad
- 045. Env air emissions / rad
- 046. Env cultural resources
- 047. Env asbestos
- 048. Env drinking water quality
- 049. Env endangered species
- 050. Env groundwater protection
- 051. Env hazardous waste
- 052. Env offsite radiation protection / penetrating
- 053. Env ozone depleting substances
- 054. Env PCBs
- 055. Env pesticide application and use
- 056. Env regulated chemical waste / non-hazardous
- 058. Env sanitary and sewer discharges
- 059. Env solid waste management units and inactive waste sites
- 060. Env surface water
- 061. Env transformer oil / non-PCB
- 062. Fire boiler, heating systems, and (commercial) appliances
- 063. Fire cigarette smoking
- 064. Fire electrical
- 065. Fire flammable liquids and gases
- 066. Fire mobile structures
- 067. Fire special hazardous materials
- 067B. Fire hydrogen targets
- 068. Fire special occupancies / accelerator and beam line enclosures
- 069. Fire spontaneous combustion
- 070. Fire stationary combustion engines
- 071. Fire storage of combustibles
- 072. Fire transportation / rail, vehicle, and fueling
- 073. Fire welding near combustibles
- 074. Fire spark producing tools near combustibles
- 075A. HazMat transport bad road conditions / offsite
- 075B. HazMat transport bad road conditions / onsite

- 076A. HazMat transport emergency response and spill clean up / offsite
- 076B. HazMat transport emergency response and spill cleanup / onsite
- 077A. HazMat transport fire and explostion / offsite
- 077B. HazMat transport fire/explostion / onsite
- 078A. HazMat transport loading and unloading / offsite
- 078B. HazMat transport loading and unloading / onsite
- 079A. HazMat transport packaging hazardous materials / offsite
- 079B. HazMat transport packaging hazardous materials / onsite
- 079C. HazMat transport transportation of radioactive materials
- 080A. HazMat transport prolonged periods of driving / offsite
- 080B. HazMat transport prolonged periods of driving / onsite
- 081A. HazMat transport spills and chemical releases /offsite
- 081B. HazMat transport spills and chemical Releases / onsite
- 081C. Hazardous material transport spills and chemical releases
- 082. Magnetic fields bioelectric implants
- 083. Magnetic fields fringe fields
- 084. Magnetic fields high magnetic fields
- 085. Magnetic fields quench effects
- 086. Material handling chemical spills
- 087. Material handling cranes and hoists
- 088. Material handling elevators used for hazardous material
- 089. Material handling falling objects
- 090. Material handling forklift operation
- 091. Material handling hazardous tools equipment and machinery
- 092. Material handling lifting objects
- 093. Material handling moving objects
- 094. Material handling storage and handling of toxic materials.
- 095A. Material handling transportation / offsite
- 095B. Material handling transportation / onsite
- 096. NIR intense light sources
- 097. NIR lasers
- 098. NIR radiofrequency radiation
- 099. NIR ultraviolet light
- 101. ODH cryogenic gas or liquid leaks
- 102. ODH cryogenic spills
- 103. ODH gaseous argon or other detector gas
- 104. ODH leak of supplied gas
- 105B. ODH mechanical refrigeration systems

141A.

Radiation - residual contamination

106.	Other machanical hazards general environmental control
100.	Other mechanical hazards - general environmental control Other mechanical hazards - machine guarding
107.	Other mechanical hazards - machinery and rotating parts
106. 109A.	Other mechanical hazards - medical and first aid
109A.	blood borne pathogens, lead, noise, asbestos, and respiratory protection
109 B .	Surveillance - tuberculosis
110.	Other mechanical hazards - powered platforms
111A.	Other mechanical hazards - pressurized tanks and containers
111B.	Other mechanical hazards - pressurized lines and piping systems
112.	Other mechanical hazards - material grinding, cutting, and drilling
113.	Other mechanical hazards (also fire) - means of egress
114.	Other mechanical hazards - moving vehicles, carts, and forklifts
115.	Other mechanical hazards - special hand tools and power driven nail guns, etc.
116.	Other mechanical hazards - work with roads and grounds equipment
117.	Other personal hazards - confined space
119.	Other personal hazards - hazards requiring PPE
120.	Other personal hazards - high noise levels
121.	Other personnel hazards - housekeeping
122.	Other personnel hazards - ice/walking surfaces
123.	Other personal hazards - lifting and carrying heavy objects
124.	Other mechanical hazards - pinch points
125.	Other personal hazards - repetitive motion
126.	Other personal hazards - sharp edges
127.	Other personnel hazards - slips, trips & falls
128.	Other personnel hazards - traffic hazards
129.	Other personnel hazards - vacuum tanks
130.	Other personal hazards - vibration
131.	Other personnel hazards - work on wet surface
132.	Other personnel hazards - working at heights
133.	Radiation - radioactive contamination
134 /142	. Radiation - special nuclear materials (SNM) and nuclear materials
135.	Radiation - mixed waste
136.	Radiation - prompt radiation
137.	Radiation - radioactive sources
138.	Radiation - radioactivated soil
139.	Radiation - radioactive liquids and gases
140.	Radiation - radioactive waste

171.

172.

141B.	Radiation - residual activity
143.	Radiation - storage and handling of radioactive materials
144.	Thermal - battery bank and UPS equipment
145.	Thermal - cold work environments
146.	Thermal - cryogens
147.	Thermal - high temperature equipment
148.	Thermal - hot work environments
149.	Thermal - ultraviolet radiation / sun exposure
151.	Thermal - wet work environments
152.	Emergency preparedness - severe weather
153.	Emergency preparedness - safeguards and security
154.	Emergency preparedness - generic
155.	Env - underground storage tanks
156.	Other mechanical hazards - aviation
159.	Emergency preparedness - hazardous materials
160.	Emergency preparedness - toxicity in smoke or fumes
161.	Env - general environmental protection planning
163.	Occupational safety administrative requirements
164.	Occurrence Investigation and Reporting
165.	Radiation - radiological emergency response (see 154.)
166.	Radiation - radiological training
167.	Radiation - monitoring and measurement of radiation
168.	Radiation - record keeping in occupational radiation protection
169.	Radiation - exposure control
170.	Radiation - QA in occupational radiation protection

Safety analysis and documentation

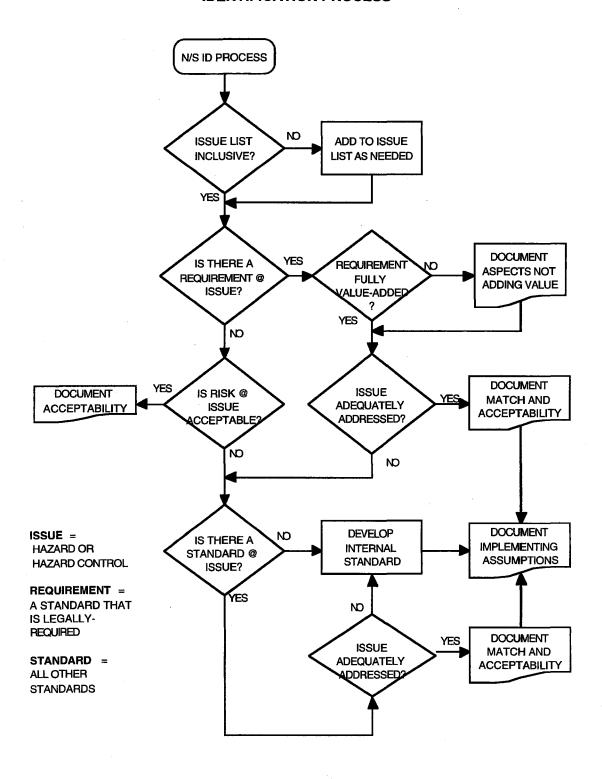
Fire - emergency responder safety

Issue origin Hazard analysis Identification Team

1.	. Issue(s)		, ,		***
Γ					
l					
l					
L					
	Focus group	☐ Emergency Management	☐ Fire Protection	Occupational Safety	
		☐ Environmental Protection	☐ Management & Oversight	Radiation Protection	
2.	is there a nec	essary standard which a	opplies to this issue?		□YES □NO
		•		es, continue; others	
			•		
3.	Necessary st	andard(s)			
	<u> </u>			· · · · · · · · · · · · · · · · · · ·	
		•			
1					
_				_	
		4			
4.	Are there any	aspects of these neces	sary standard(s) which d		□YES □NO
			If y	yes, continue; other	vise skip to 6.
5.	Description of	f non-value added aspec	ts of necessary standard	i(s).	
			,		·
		_			
			: issue(s) consistent witl		YES NO
рe	riormance goa	is assuming compliance	with applicable necessar	•	
			If	no continue; otherw	ise skip to 12.
7.	Is there a non	-required external stand	ard which applies to this	issue?	YES NO
		•		es, continue; otherw	
				-	•

8. External sufficient standard citation	· · · · · · · · · · · · · · · · · · ·	
		j
9. Is the level of risk associated with the issue(s) consist	ent with	YES NO
management performance goals assuming compliance with (non-statutory) external standard?		therwise skip to 12.
10. Is an internal standard required to attain a level of rist management performance goals?	e consistent with	YES NO
11. Describe nature and status of internal sufficient stand	lord.	
11. Pesonbe neare and states of internal surficient state		
12. Describe how the levels of risk and cost are consisten	t with management per	formance goals.
		į
<u> </u>		
13. Pick the basic implementing assumption from the list.	☐ Major positive impact ☐ Minor positive impact ☐ No net impact	
14. Describe the nature and status of implementation inclu	iding cost-effectivene	ss.
L		

FERMILAB N&S STANDARDS IDENTIFICATION PROCESS



		Issue origin ☑ Hazard analysis ☐ Id	entification Team
1.	Issue(s)		ortanioation roam
	Bio - animals		
	Bio - insects Bio - plants		
	p		
<u> </u>	-		
ř	ocus group	☐ Emergency Management ☐ Fire Protection ☐ Occupational Safety ☐ Environmental Protection ☐ Management & Oversight ☐ Radiation Protection	
2.	Is there a ne	ecessary standard which applies to this issue?	X YES NO
		If yes, continue; otherw	
3.	Necessary s	standard(s)	
	FR 1926.21(b)(4	4)	
29 C	FR 1910.132		
			İ
,			}
4.	Are there an	y aspects of these necessary standard(s) which do not add value?	YES NO
		If yes, continue; other	wise skip to 6.
5.	Description	of non-value added aspects of necessary standard(s).	
			ļ
6.	is the level	of risk associated with the issue(s) consistent with management	
		ls assuming compliance with applicable necessary standards?	X YES NO
		If no continue; otherw	vise skip to 12.
			•
7.	is there a no	on-required external standard which applies to this issue?	YES NO

8. External sufficient standard citation	
9. Is the level of risk associated with the issue(s) consistent with	YES NO
management performance goals assuming compliance with the above (non-statutory) external standard?	therwise skip to 12
ii no commun, c	
10. Is an internal standard required to attain a level of risk consistent with management performance goals?	YES NO
11. Describe nature and status of internal sufficient standard.	
	-
12. Describe how the levels of risk and cost are consistent with management pe	erformance goals.
Past adherance to the statutory requirements in #3 has resulted in levels of ES&H and cost performa	
with management goals inlcuding the use of industrial standards for industrial issues.	
13. Pick the basic implementing assumption from the list. ☐ Major positive impact ☐ Minor positive impact ☐	I Minor negative impact I Major negative impact
☑ No net impact	
14 Departure the nature and etatus of implementation including cost officializations	nee
14. Describe the nature and status of implementation including cost-effectivened Procedures and information regarding environmental biological hazards are provided in Chapter 5071	
Manual. Training is also conducted on an as-needed basis for persons who routinely work out-of-doo	
demonstrated that this program is both successful and cost-effective.	
	,
	Í

29 CFR 1910.141
Focus group
Focus group
☐ Environmental Protection ☐ Management & Oversight ☐ Radiation Protection 2. Is there a necessary standard which applies to this issue? If yes, continue; otherwise skip to 6. 3. Necessary standard(s) 77 IAC 900 29 CFR 1910.141 29 CFR 1926.27
☐ Environmental Protection ☐ Management & Oversight ☐ Radiation Protection 2. Is there a necessary standard which applies to this issue? If yes, continue; otherwise skip to 6. 3. Necessary standard(s) 77 IAC 900 29 CFR 1910.141 29 CFR 1926.27
☐ Environmental Protection ☐ Management & Oversight ☐ Radiation Protection 2. Is there a necessary standard which applies to this issue? If yes, continue; otherwise skip to 6. 3. Necessary standard(s) 77 IAC 900 29 CFR 1910.141 29 CFR 1926.27
☐ Environmental Protection ☐ Management & Oversight ☐ Radiation Protection 2. Is there a necessary standard which applies to this issue? If yes, continue; otherwise skip to 6. 3. Necessary standard(s) 77 IAC 900 29 CFR 1910.141 29 CFR 1926.27
☐ Environmental Protection ☐ Management & Oversight ☐ Radiation Protection 2. Is there a necessary standard which applies to this issue? If yes, continue; otherwise skip to 6. 3. Necessary standard(s) 77 IAC 900 29 CFR 1910.141 29 CFR 1926.27
☐ Environmental Protection ☐ Management & Oversight ☐ Radiation Protection 2. Is there a necessary standard which applies to this issue? If yes, continue; otherwise skip to 6. 3. Necessary standard(s) 77 IAC 900 29 CFR 1910.141 29 CFR 1926.27
If yes, continue; otherwise skip to 6. 3. Necessary standard(s) 77 IAC 900 29 CFR 1910.141 29 CFR 1926.27
If yes, continue; otherwise skip to 6. 3. Necessary standard(s) 77 IAC 900 29 CFR 1910.141 29 CFR 1926.27
If yes, continue; otherwise skip to 6. 3. Necessary standard(s) 77 IAC 900 29 CFR 1910.141 29 CFR 1926.27
3. Necessary standard(s) 77 IAC 900 29 CFR 1910.141 29 CFR 1926.27
77 IAC 900 29 CFR 1910.141 29 CFR 1926.27
77 IAC 900 29 CFR 1910.141 29 CFR 1926.27
29 CFR 1910.141 29 CFR 1926.27
29 CFR 1926.27
29 CFR 1926.51
4. Are there any aspects of these necessary standard(s) which do not add value?
If yes, continue; otherwise skip to 6
5. Description of non-value added aspects of necessary standard(s).
C. 2000.p.m. or non-time decide dispersion (-)
6. Is the level of risk associated with the issue(s) consistent with management
performance goals assuming compliance with applicable necessary standards?
If no continue; otherwise skip to 12
7. Is there a non-required external standard which applies to this issue?

8. External sufficient standard citation	
• .	
9. Is the level of risk associated with the issue(s) consistent with	YES NO
management performance goals assuming compliance with the above	<u> </u>
(non-statutory) external standard? If no continue;	otherwise skip to 12.
10. Is an internal standard required to attain a level of risk consistent with management performance goals?	☐ YES ☐ NO
management performance goals?	
11. Describe nature and status of internal sufficient standard.	
12. Describe how the levels of risk and cost are consistent with management	performance goals.
Past adherance to the statutory requirements in #3 has resulted in levels of ES&H and cost perform	
with management goals inlcuding the use of industrial standards for industrial issues.	
	•
13. Pick the basic implementing assumption from the list. Major positive impact	☐ Minor negative impact
☐ Minor positive impact	☐ Major negative impact
No net impact No	
14. Describe the nature and status of implementation including cost-effectives	ness
Requirements for maintaining the main site water supplies are provided in Fermilab ES&H Manual Cl	
prevention procedures for domestic water supplies is provided in Chapter 8051. Issue 151 (Therma	l - wet work environment)
was combined with 002 (Bio - bacteria) as a "best fit" since a specific standard could not be identifie Experience has demonstrated that this program is both successful and cost-effective.	a for the former.
p g m a a a a a a a	

YES NO

If yes, continue; otherwise skip to 10.

FERMILAB IDENTIFICATION TEAM DOCUMENTATION

	Issue origin 🔀 Haza	rd analysis 🔲 ld	entification Team
1. Issue(s)	- Total origin Rainaza		o
003. Bio - bloodborne pathogens			
Focus group		cupational Safety	
☐ Environmental Protection ☐ Manage	gement & Oversight	diation Protection	
O le thous a personne standard which applies to	a Abia isawa?		
2. Is there a necessary standard which applies t			YES NO
	it yes, co	ontinue; otherw	rise skip to 6.
3. Necessary standard(s)			
29 CFR 1910.1030			
			ļ
			į
			:
4. Are there any aspects of these necessary star	ndard(s) which do not	add value?	YES NO
	If yes, o	ontinue; other	wise skip to 6.
5. Description of non-value added aspects of n	ecessary standard(s).		
			•
6. Is the level of risk associated with the issue(performance goals assuming compliance with ap			X YES NO
performance godie assuming computative with ap	-		rise skip to 12.

7. Is there a non-required external standard which applies to this issue?

8. External sufficient standard citation	
9. Is the level of risk associated with the issue(s) consistent with	
management performance goals assuming compliance with the above	☐ YES ☐ NO
(non-statutory) external standard? If no continue; others	wise skip to 12.
10. Is an internal standard required to attain a level of risk consistent with	☐YES ☐NO
management performance goals?	<u> </u>
11. Describe nature and status of internal sufficient standard.	
	ļ
12. Describe how the levels of risk and cost are consistent with management perform	
Past adherance to the statutory requirements in #3 has resulted in levels of ES&H and cost performance	that are consistent
with management goals inlouding the use of industrial standards for industrial issues.	
	·
13. Pick the basic implementing assumption from the list. ☐ Major positive impact ☐ Min	or negative impact
13. Pick the basic implementing assumption from the list. □ Major positive impact □ Min ☐ Minor positive impact □ Maj	or negative impact
■ No net impact	
14. Describe the nature and status of implementation including cost-effectiveness. The statutory requirement in #3 is implemented through Chapter 5072 of the Fermilab ES&H Manaual. Ex	perience bes
I he statutory requirement in #3 is implemented through Chapter 5072 of the Fermilab E5&H Manadai. Ex demonstrated that this program is both successful and cost-effective.	penence nas
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•		leeua	origin	M Hazard analysis	☐ Identification Team
1. Issue(s)				Es l'azard allalysis	□ identification ream
	cids, solvents, toxic agents and ha emical exposeures exceeding PE uisance dusts				
016. Chem - us	e of toxic materials				
e pe					
Focus gro	up ☐ Emergency Management ☐ Environmental Protection		Oversigl	Occupational The Padiation Prof	
2. Is there a	a necessary standard which	applies to this is	ssue?		X YES NO
			If	yes, continue; o	otherwise skip to 6.
	y standard(s)			·	
29 CFR 1910.12 29 CFR 1910.10			,		
40 CFR 355 40 CFR 370 40 CFR 372					
40 CFR 372					
					4.
		<u></u>			
4. Are there	any aspects of these nece	ssary standard(s)			
			ľ	f yes, continue;	otherwise skip to 6.
5. Description	on of non-value added asp	ects of necessary	y stand	lard(s).	
	·				
	·				
	rel of risk associated with t goals assuming compliance				▼YES □ NO
				If no continue; o	otherwise skip to 12.
7. Is there a	non-required external stan	dard which applie			YES NO
			if	yes, continue; o	therwise skip to 10.

8. External sufficient standard citation	
9. Is the level of risk associated with the issue(s) consistent with	
management performance goals assuming compliance with the above	YES NO
(non-statutory) external standard? If no continue	; otherwise skip to 12.
10. Is an internal standard required to attain a level of risk consistent with	YES NO
management performance goals?	<u> </u>
11. Describe nature and status of internal sufficient standard.	
40. Provide how the levels of viet and seek are consistent with management	
12. Describe how the levels of risk and cost are consistent with management Past adherance to the statutory requirements in #3 has resulted in levels of ES&H and cost performance.	
with management goals inlouding the use of industrial standards for industrial issues.	
13. Pick the basic implementing assumption from the list. ☐ Major positive impac	t ☐ Minor negative impact t ☐ Major negative impact
☑ No net impact	
14. Describe the nature and status of implementation including cost-effective	
The statutory requirements in #3 are implemented through a variety of ES&H Manual Chapters inc the 5052 Special Toxic Hazards series. Experience has demonstrated that this program is both cost-effective.	
coot chocurs.	

						_ ul!-		I - I •		1161 -1	
1.	Issue(s)				ssue	origin	Haz	ard analysi	s 📙 ld	entification	ream
	. Chem - carbon	monoxide	<u> </u>		_						
	w.·										
L						 					
ı	Focus group		cy Management			Organisal		ccupational			
		LI Environn	nental Protection	i ∐ Managen	nent &	Oversigi	п ЦН	adiation Pro	rection		
2.	le there a ne	acaecary et	andard which	annlies to	thie i	2010				NEW VEC. I	7 100 7
۷.	is there a m	ecessary su	andard willon	applies to	11119 14			oontinuo.	atham	YES [
						,,	yes,	continue;	otnerv	vise skip	10 6.
3.	Necessary s	standard(s)									
	FR 1910.1200										
	FR 1910.146										
29 C	CFR 1910.1000										
				-							
		•									Ì
											ľ
					,						
										.,	
4.	Are there an	y aspects o	of these nece	ssary standa	ard(s)	which	do no	t add valu	ue?	☐ YES	NO Z
				-	•			continue;			
5.	Description	of non-valu	e added asp	ects of nec	essary	y stand	lard(s).				
											l
							·				ŀ
								.,			
•	la Ala Jarra	a4 whal- ac-		ha lasus/s\							
6. peri			ociated with t g compliance						i.	XYES [ON
P-011			9b.:	abbu			-	continue;	otherv	vise skip	to 12.
								,			. — •
7.	is there a no	on-required	external stan	dard which	applie	es to th	nis iss	ue?		YES [I NO I
- •					~L-P-11	11					<u> </u>

8. External sufficient standard citation	
9. Is the level of risk associated with the issue(s) consistent with management performance goals assuming compliance with the above	YES NO
(non-statutory) external standard? If no continue;	otherwise skip to 12
10. Is an internal standard required to attain a level of risk consistent with management performance goals?	YES NO
11. Describe nature and status of internal sufficient standard.	
12. Describe how the levels of risk and cost are consistent with management	performance goals
Past adherance to the statutory requirements in #3 has resulted in levels of ES&H and cost performant management goals including the use of industrial standards for industrial issues.	
with management goals inicuting the use of industrial standards for industrial issues.	
13. Pick the basic implementing assumption from the list. ☐ Major positive impact ☐ Minor positive impact ☒ No net impact	☐ Minor negative impact ☐ Major negative impact
14. Describe the nature and status of implementation including cost-effective Carbon monoxide exposures occur in association with combustion; primarily engines and heaters.	They are handled in
accordance with good industrial hygiene practices including activity review, training,and monitoring 5051 (HazCom) and 5063 (Confined spaces) help to control exposures. Experience has demonstrated both successful and cost-effective.	

4	lssue(s)					Issue	origin	X	Hazard analy	sis [] Identific	ation Team
1.	. Chem - carcin	ogens										
	. Onom ourons	ogono										
												,
	• •											
1	Focus group	☐ Emerg	ency Mana	gement	☐ Fire Pr	otection			○ Occupation	nal Saf	ety	
		☐ Enviro	nmental Pi	rotection	☐ Manag	ement &	Oversig	ht	☐ Radiation F	rotect	ion	
2.	Is there a no	ecessary	standard	which	applies to	this is	ssue?				X YE	S NO
							If	f y	es, continue	; oth	erwise s	skip to 6.
^	Necessary	otopaloval/a										
3.	Necessary s											
29 (JEN 1910.1000-	1200										
		•										
L												
_						-117 - \		-11-		- I O	les v	50 5 100 1
4.	Are there an	y aspects	or these	e neces	ssary stan	aara(s)			yes, continu			ES NO
								,	yes, continu	e, ou	ici wisc	экір со о.
5.	Description	of non-va	iue adde	d aspe	ects of ne	ecessar	v stanc	dar	d(s).			
					1				,			
												*
L	· · · · · · · · · · · · · · · · · · ·			·								
6.	Is the level										157 1 V	ES NO
per	formance goa	als assun	ning com	pliance	with app	olicable	neces		=		I	
								If	no continue	e; oth	erwise s	sкір to 12.
7.	Is there a ne	on-require	d externa	al stand	lard whic	h applic	es to ti	his	issue?		□ Y	ES NO

8. External sufficient standard citation	
	-
9. Is the level of risk associated with the issue(s) consistent with management performance goals assuming compliance with the above	YES NO
(non-statutory) external standard? If no continue; other	erwise skip to 12.
10. Is an internal standard required to attain a level of risk consistent with	YES NO
management performance goals?	
11. Describe nature and status of internal sufficient standard.	
12. Describe how the levels of risk and cost are consistent with management perfo	
Past adherance to the statutory requirements in #3 has resulted in levels of ES&H and cost performance with management goals inlouding the use of industrial standards for industrial issues.	e that are consistent
	,
13. Pick the basic implementing assumption from the list. Major positive impact M	inor negative impact
☐ Minor positive impact ☐ M ☑ No net impact	ajor negative impact
14. Describe the nature and status of implementation including cost-effectiveness	
In general, chemical carcinogens are a minor concern at Fermilab. The associated program is contained of the ES&H Manual. Experience has demonstrated that this program is both successful and cost-effective forms.	

							Bu ·			
1.	Issue(s)				ISSUE	origin	Hazard analys	sis 🔲 l	dentification	Team
	. Chem - chemi	cal reaction	s .							
			-							
	Focus group	☐ Emero	ency Manager	ment	rotection		☑ Occupation	al Safet	·	
	rocus group					Oversig	ht Radiation P			
			<u> </u>							
2.	Is there a no	ecessary	standard wh	ich applies t	o this is	ssue?			YES [ON
		-					yes, continue;	other		
							, 00, 00, 00, 00, 00, 00, 00, 00, 00, 0		Up	
3.	Necessary	standard(s	;)							
29 (CFR 1910.1200									
40 (CFR 724.277									
										ł
Ļ					,	· · ·		· .		
4.	Are there an	y aspects	of these n	ecessary stai	ndard(s)		do not add va		☐ YES	
			•			I	f yes, continue	; other	rwise skip	to 6.
		_		_						
5.	Description	of non-va	lue added	aspects of n	ecessar	y stanc	lard(s).			
l										
ŀ										1
		•								
Ь					. 					
6.							with manageme		X YES	ON
per	tormance goa	assum	ing complia	ance with ap	plicable	neces	sary standards			
							If no continue	; other	wise skip	to 12.
7.	Is there a no	on-require	d external s	standard whic	h applie	es to ti	his issue?		YES [ON

8. External sufficient standard citation		
9. Is the level of risk associated with the issue(s) consistent	with	
management performance goals assuming compliance with the		YES NO
(non-statutory) external standard?	If no continue;	otherwise skip to 12
10. Is an internal standard required to attain a level of risk c	onsistent with	YES NO
management performance goals?		<u> </u>
11. Describe nature and status of internal sufficient standard	d.	
12. Describe how the levels of risk and cost are consistent very least adherance to the statutory requirements in #3 has resulted in levels of E		
with management goals inleuding the use of industrial standards for industria		nance that are consistent
13. Pick the basic implementing assumption from the list.	Aajor positive impact	☐ Minor negative impact
	lo net impact	☐ Major negative impact
14. Describe the nature and status of implementation include	ling cost-effective	ness.
In general, chemical reactions are a minor concern at Fermilab. Chapter 5051		(HazCom) includes this
issue. Experience has demonstrated that this program is both successful at	na cost-errective.	

4	lagua(a)					Issue	origin	⊠ Ha	zard analys	is 🔲 l	dentification Team
1.	Issue(s)										
	. Chem - cutting a										
	. Chem - toxicity		or fumes								
017	. Chem - welding t	iumes									1
ŀ											
1											
ŀ											
ľ											
					F-1 -: -					1011	
	Focus group		ency Manag						Occupationa		
		☐ Environ	mental Pro	tection	⊔ Mana	gement &	Oversigi	nt 📙	Radiation Pr	otectioi	າ
2.	Is there a nec	essarv s	standard v	which :	applies 1	o this i	ssue?				YES NO
-		,									
							IT	yes,	continue;	other	wise skip to 6.
3.	Necessary st	andard(s)								
29 (CFR 1910.1200		- · · ·			į.					
	CFR 1910.1000										
	CFR 1910.146										
	CFR 1910.252-257	,									
	1										
											·
-	,										
											1
											ł
	•										
<u> </u>											
4.	Are there any	aspects	of these	neces	sarv sta	ndard(s)	which	do n	ot add va	lue?	YES X NO
		•	•		•	• •					rwise skip to 6.
								, 00	, 00	, 00	inioc onip to o.
5.	Description of	f non-va	lue addec	d aspe	cts of r	necessar	y stanc	dard(s).		
					•						
1											
İ											
•					*						
	•										
<u> </u>	 						·				
						•					
6.	Is the level o										X YES NO
per	formance goals	s assum	ing comp	oliance	with ap	plicable	neces	sary	standards1	?	EN LEG TIMO
							•	if no	continue:	other	wise skip to 12.
											,
7	le there a nor	a-roquiro	devterna	Letand	lard whi	sh annli	ae ta ti	hie ie	cue?		DVEC DVO

8. External sufficient standard citation	
	•
9. Is the level of risk associated with the issue(s) consistent with	YES NO
management performance goals assuming compliance with the above (non-statutory) external standard? If no continue; other	rwise skin to 12
no community of the	
10. Is an internal standard required to attain a level of risk consistent with	TVE TNO
management performance goals?	☐ YES ☐ NO
11. Describe nature and status of internal sufficient standard.	
12. Describe how the levels of risk and cost are consistent with management perfo	rmanco doale
Past adherance to the statutory requirements in #3 has resulted in levels of ES&H and cost performance	
with management goals inlouding the use of industrial standards for industrial issues.	
	·
40 Blot the basis implementation and the second Classic impact Class	nor nogative impact
13. Pick the basic implementing assumption from the list. ☐ Major positive impact ☐ Minor positive impact ☐ Major positive im	ajor negative impact
No net impact No	
14. Describe the nature and status of implementation including cost-effectiveness.	
Cutting and burning are common activities at Fermilab. They are handled in accordance with good indust	rial hygiene
practices including activity review, training, and monitoring. ES&H Manual Chapter 5051 (HazCom) and spaces) help to control exposures. Experience has demonstrated that this program is both successful	
practices including activity review, training, and monitoring. ES&H Manual Chapter 5051 (HazCom) and spaces) help to control exposures. Experience has demonstrated that this program is both successful	

☐ YES ☐ NO

If yes, continue; otherwise skip to 10.

1.	lssue(s)			lss	ue origin	n 🔀 Haza	rd analysis	☐ Identification	on Team
	. Chem - heavy	metals such a	s lead			· · · · · · · · · · · · · · · · · · ·			
	Econo arour	□ Emorgono	y Management	☐ Fire Protect	ion	M 0	cupational S	Pofoty	
	Focus group		ental Protection						
									·
2.	Is there a ne	ecessary sta	ndard which a	pplies to thi	is issue?			X YES	□NO
						lf yes, co	ontinue; o	therwise ski	p to 6.
3.	Necessary s	tandard(e)							
	CFR 1910.1200	tanuaru(s)		,				· · · · · · · · · · · · · · · · · · ·	
29 (CFR 1910.1000								
	CFR 1910.1018 (i CFR 1910.1025 (k		nic)						
	CFR 1926.62 (lead								
,									
<u> </u>									
				_				•	
4.	Are there any	y aspects of	these necess	ary standard	a(s) which			e?	NO 🔀
						yes, c	onunue, (-uicimise sk	.p .u 0.
5.	Description of	of non-value	added aspec	ts of neces	sary stan	dard(s).			
	-		<u> </u>				. <u></u>	·····	
			,			,			
							<u>.</u>		
6.	Is the level o	of risk asso	ciated with the	e issue(s) co	onsistent	with mar	nagement		
	formance goal					ssary sta	ndards?	X YES	
						If no co	ontinue; o	therwise ski	p to 12
7.	Is there a no	n-required e	external standa	ard which ap	plies to	this issue	?	☐ YES	□ NO

8. External sufficient standard citation	
<u></u>	
9. Is the level of risk associated with the issue(s) consistent with	YES NO
management performance goals assuming compliance with the above (non-statutory) external standard?	therwise skip to 12
in no continue, o	mermoe orip to 12
10. Is an internal standard required to attain a level of risk consistent with	☐ YES ☐ NO
management performance goals?	<u> </u>
11. Describe nature and status of internal sufficient standard.	
12. Describe how the levels of risk and cost are consistent with management pe	orformance goals
Past adherance to the statutory requirements in #3 has resulted in levels of ES&H and cost performation with management goals inlouding the use of industrial standards for industrial issues.	
	·
13. Pick the basic implementing assumption from the list. Major positive impact	Minor negative impact
☐ Minor positive impact ☐ No net impact	j Major negative impact
· · · · · · · · · · · · · · · · · · ·	
14. Describe the nature and status of implementation including cost-effectivene	
Lead exposures can occur in association with physics or maintenance activities. They are handled in industrial hygiene practices including activity review, training, and monitoring. ES&H Manual Chapter 5052.3 (Lead in paints) and 5063 (Confined spaces) help to control exposures. Experience has dem program is both successful and cost-effective.	5051 (HazCom),

a la		Issue	origin	Hazard analysis ☐ Ide	entification Team
	ssue(s)	, 			
	Chem - pesticides				Ì
055. E	Env - pesticide application and use				
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	-				
l					
	<u> </u>				
Foo	cus group			☑ Occupational Safety	
	Environmental Protection	anagement &	Oversigi	ht Radiation Protection	
2. Is	there a necessary standard which applie	es to this is	sue?	•	YES NO
			If	yes, continue; otĥerw	ise skip to 6
				yes, continue, otherw	ise skip to u.
3. N	lecessary standard(s)				
	(7 USC 136 et seq.)				1
	R Subchapter E				
	Pesticide Act, IRS Ch. 5, para. 801 et seq.; 45 IL.	CS 60-1			
Structu	ral Pesticide Act, IRS Ch. 111 1/2, para. 2201 - 2	225			
	R 1910.1200				
	R 1910.1000				
	302.302				
	602.110				
35 IAC					
77 IAC					
	*				
1					
İ					
4. Ar	re there any aspects of these necessary	standard(s)	which	do not add value?	YES NO
			I	f yes, continue; otherv	wise skip to 6.
5. De	escription of non-value added aspects of	of necessary	, stanc	lard(s).	
					1
					1
-					
	the level of risk associated with the is				YES NO
perfor	mance goals assuming compliance with	applicable	neces	sary standards?	MILES LINO
	-			If no continue; otherw	ise skip to 12
7. Is	there a non-required external standard	which applie	s to t	his issue?	YES NO
			If	yes, continue; otherw	

8. External sufficient standard citation	
9. Is the level of risk associated with the issue(s) consistent with management performance goals assuming compliance with the abo	
(non-statutory) external standard?	no continue; otherwise skip to 1
10. Is an internal standard required to attain a level of risk consist management performance goals?	stent with
11. Describe nature and status of internal sufficient standard.	
	,
	N.
12. Describe how the levels of risk and cost are consistent with	
Continuation of the current program will provide an appropriate level of protection a consistent with management performance goals because management expects to issues. This is an industrial issue and the solution chosen is an industrial solution.	use industrial solutions for industrial
13. Pick the basic implementing assumption from the list. Major	positive impact
<u>I</u> Minor ∣	positive impact 🛛 Major negative impac
⊠ No net	impact
14. Describe the nature and status of implementation including	cost-effectiveness
Implementation of these laws and regulations is accomplished through contractual lessors of agricultural land, and by procedures followed by Roads and Grounds per regulations.	arrangements with applicators and
regulations.	

1.	Issue(s)			Issue	origin	Hazard analys	sis Identification	Team
	Construction -	compressed	gasses				<u> </u>	
		p	. 3					
1								
		[] Emorgo	ov Managamani	☐ Fire Protection			al Cofoty	
	Focus group			Management &				,
								
2.	Is there a ne	ecessary st	andard which	applies to this i	ssue?		X YES	I NO
						ves continue:	otherwise skip	
						yes, continue,	Otherwise skip	
3.	Necessary s	standard(s)					·	
29 C	FR 1926.350-35					· · · · · · · · · · · · · · · · · · ·		
ŀ								
_					<u></u>			
4.	Are there an	y aspects	of these nece	ssary standard(s)	which	do not add va	lue? YES	NO
		-			1	f yes, continue	; otherwise skip	
	•							
5.	Description	of non-val	ue added asp	ects of necessar	y stanc	iard(s).		
Γ			-					
l	•							
L								
6.	Is the level	of risk ass	ociated with	the issue(s) cons	istent v	with managemen	nt 👝	
				with applicable				NO
•	3		-				otherwise skip	to 12
						·	•	
7	le there a no	on-required	external stan	dard which appli	es to ti	his issue?	ITI VEQ I	T NO

8. External sufficient standard citation		
9. Is the level of risk associated with the issue(s) consi	stent with	☐ YES ☐ NO
management performance goals assuming compliance with		<u> </u>
(non-statutory) external standard?	If no continue; ot	herwise skip to 12
10. Is an internal standard required to attain a level of r management performance goals?	isk consistent with	YES NO
management performance goals:		
11. Describe nature and status of internal sufficient sta	ndard.	
	•	
12. Describe how the levels of risk and cost are consist	tent with management per	formance goals
Past adherance to the statutory requirements in #3 has resulted in leve	els of ES&H and cost performa	
with management goals inlouding the use of industrial standards for inc	dustrial issues.	ļ
•		
40. Diele the hoois implementing accumulation from the lie	■ Major positive impact □	Minor negative impact
13. Pick the basic implementing assumption from the lis	t. Major positive impact Minor positive impact	Minor negative impact Major negative impact
13. Pick the basic implementing assumption from the lis	t. ☐ Major positive impact ☐ ☐ Minor positive impact ☐ ☑ No net impact	Minor negative impact Major negative impact
	☐ Minor positive impact ☐ Mo net impact	Major negative impact
14. Describe the nature and status of implementation i	□ Minor positive impact □ Mo net impact □ No net impact □ No net impact □ No net impact	Major negative impact
14. Describe the nature and status of implementation i	□ Minor positive impact □ Mo net impact □ No net impact □ No net impact □ No net impact	Major negative impact
	□ Minor positive impact □ Mo net impact □ No net impact □ No net impact □ No net impact	Major negative impact
14. Describe the nature and status of implementation i	□ Minor positive impact □ Mo net impact □ No net impact □ No net impact □ No net impact	Major negative impact

	Issue	origin		☐ Identification	Team
1. Issue(s)					
019. Construction - demolition					
· ·					
Art 1					
				- · · · · · · · · · · · · · · · · · · ·	
Focus group		Oversial	☑ Occupational Section Proteins ☐ Radiation Pr		
□ Environmental (Totection □ Mana)	gornom a	Oversign	it Li Hadiation 110t	ection	
2. Is there a necessary standard which applies to	o this is	ssue?		X YES	TNO
a			vae continue c	<u> </u>	
		ιτ	yes, continue; o	unerwise SKIP	ι υ
3. Necessary standard(s)					
29 CFR 1926.850					
29 CFR 1926.58 (asbestos)					
· · · · · · · · · · · · · · · · · · ·					
·					
				·	
4. Are there any aspects of these necessary star	ndard(s)				
		ŀ	f yes, continue;	otherwise skip	to 6.
5. Description of non-value added aspects of n	ecessary	stand	lard(s).		
					7
				·	
6. Is the level of risk associated with the issue(X YES] NO]
performance goals assuming compliance with ap	piicabie	neces	-	<u> </u>	
			If no continue; o	otnerwise skip	το 12.
			,		
7. Is there a non-required external standard which	h applie			☐ YES [
		lf	yes, continue; o	therwise skip	to 10.

8. External sufficient standard citation	
·	
9. Is the level of risk associated with the issue(s) consistent with management performance goals assuming compliance with the above	YES NO
(non-statutory) external standard?	erwise skip to 12.
, , , , , , , , , , , , , , , , , , ,	· · · · · · · · · · · · · · · · · · ·
10. Is an internal standard required to attain a level of risk consistent with	
management performance goals?	YES NO
11. Describe nature and status of internal sufficient standard.	
11. Describe nature and status of internal sufficient standard.	
40. Describe how the levels of risk and cost are consistent with measurement next	
12. Describe how the levels of risk and cost are consistent with management performance to the statutory requirements in #3 has resulted in levels of ES&H and cost performance.	
with management goals inlouding the use of industrial standards for industrial issues.	
13. Pick the basic implementing assumption from the list. Major positive impact	linor negative impact
☐ Minor positive impact ☐ M	lajor negative impact
No net impact	
14. Describe the nature and status of implementation including cost-effectiveness	L
Experience has demonstrated that this program is both successful and cost-effective.	· <u> </u>
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	1

			leeua	origin	Hazard analysis	. I Identificati	on Toam
1.	lssue(s)		iggae	origin	M Hazard analysis	- Li identinicati	OII TEAIN
020.	Construction -	dewatering hazard					
							1
							ŀ
	12						ļ
Ŀ						·	
F	ocus group	☐ Emergency Management	☐ Fire Protection			Safety	
	J ,	☐ Environmental Protection		Oversigh			
2.	is there a ne	ecessary standard which	applies to this is	sue?		X YES	□ NO
				lf	yes, continue;	<u> </u>	
					•		
3.	Necessary s	tandard(s)					
29 C	FR 1926. 651(h						1
							İ
			•				Į
1							
		,					
4.	Are there an	y aspects of these neces	sary standard(s)	which	do not add valu	ıe? ☐ YES	S X NO
		· · · · · · · · · · · · · · · · · · ·	, ,		f yes, continue;		
						•	
5.	Description	of non-value added aspe	cts of necessary	stand	lard(s).		
<u> </u>			· · · · · · · · · · · · · · · · · · ·			······································	
		•					
6.	is the level	of risk associated with th	ne issue(s) consi	stent v	with management		
		ls assuming compliance				▼ YES	□ NO
•	_	- -	· -		If no continue;	otherwise sk	ip to 12.
		•			·		-
7.	Is there a ne	on-required external stand	lard which applie	s to th	nis issue?	YES	□ NO
••		again an amainm amin			yes, continue;		

8. External sufficient standard citation		
9. Is the level of risk associated with the issue(s) consi		YES NO
management performance goals assuming compliance wit		
(non-statutory) external standard?	If no continue; o	therwise skip to 12
10. Is an internal standard required to attain a level of a management performance goals?	risk consistent with	YES NO
11. Describe nature and status of internal sufficient sta	ındard.	- .
12. Describe how the levels of risk and cost are consist		
Past adherance to the statutory requirement in #3 has resulted in level with management goals inlouding the use of industrial standards for inc		nce that are consistent
with management goals inicuding the use of industrial standards for the	Justilai issues.	•
•		
	•	
<u> </u>		
13. Pick the basic implementing assumption from the lis	t. Major positive impact	Minor negative impact
	☐ Minor positive impact ☐ ☑ No net impact	J Major negative impact
14. Describe the nature and status of implementation i		ess.
Experience has demonstrated that this program is both successful an	d cost-effective.	

If yes, continue; otherwise skip to 10.

	Issue	origin	Hazard analysis	☐ Identification Team
1. Issue(s)				
021. Construction - earth cave-in and collapse				
	Destantion		5 0	\
Focus group ☐ Emergency Management ☐ Fire ☐ Environmental Protection ☐ Mar		Overeigt	Occupational S	
Elivioninental Flotection Mai	nagement & v	Oversigi	it La Hadiation Frote	
		_		
2. Is there a necessary standard which applies	s to this is	sue?		YES NO
		lf	yes, continue; o	therwise skip to 6.
3. Necessary standard(s)				
29 CFR 1926.651-652				
				. •
4. Are there any aspects of these necessary s	tandard(s)	which	do not add value	? YES NO
		ľ	f yes, continue; d	otherwise skip to 6.
5. Description of non-value added aspects of	necessary	stand	lard(s).	
				
· · · · · ·				
				·
6. Is the level of risk associated with the issu	ue(s) consi	stent v	vith management	M VEG ELIG
performance goals assuming compliance with				X YES NO
			If no continue; o	therwise skip to 12
			ŕ	•
7 Is there a non-required external standard wi	hich anglic	a ta ti	sie leeuo?	DVEC DNO

8. External sufficient standard citation	
9. Is the level of risk associated with the issue(s) consistent with management performance goals assuming compliance with the above	YES NO
() () () () () () () () () ()	; otherwise skip to 12
10. Is an internal standard required to attain a level of risk consistent with management performance goals?	YES NO
11. Describe nature and status of internal sufficient standard.	•
	•
12. Describe how the levels of risk and cost are consistent with management	
Past adherance to the statutory requirements in #3 has resulted in levels of ES&H and cost performents management goals inlouding the use of industrial standards for industrial issues.	rmance that are consistent
•	
13. Pick the basic implementing assumption from the list. Major positive impac	☐ Minor negative impac
☐ Minor positive impac	☐ Major negative impact
No net impact No	
14. Describe the nature and status of implementation including cost-effectiv	eness
it. Describe the nature and status of implementation including COStrellectiv	
Experience has demonstrated that this program is both successful and cost-effective.	

1.	Issue(s)	Issue origin ☑ Hazard analysis ☐	Identification Team
		earth moving equipment	
			·
F	ocus group	☐ Emergency Management ☐ Fire Protection ☑ Occupational Safe	etv
·	3.0ap	☐ Environmental Protection ☐ Management & Oversight ☐ Radiation Protecti	
2.	Is there a ne	cessary standard which applies to this issue?	YES NO
		If yes, continue; other	erwise skip to 6.
			•
3.	Necessary s	tandard(s)	
29 C	FR 1926.600-60	2	
			(
4.	Are there any	aspects of these necessary standard(s) which do not add value?	YES NO
		If yes, continue; oth	erwise skip to 6.
5.	Description of	of non-value added aspects of necessary standard(s).	
	÷		
6.		of risk associated with the issue(s) consistent with management	KVEC ELVO
peri		s assuming compliance with applicable necessary standards?	YES NO
		If no continue; other	erwise skip to 12.
7.	Is there a no	n-required external standard which applies to this issue?	YES NO
		if yes, continue; other	

8. External sufficient standard citation	
9. Is the level of risk associated with the issue(s) consistent with	
management performance goals assuming compliance with the above	YES NO
(non-statutory) external standard? If no continue; other	erwise skip to 12
10. Is an internal standard required to attain a level of risk consistent with	YES NO
management performance goals?	
11. Describe nature and status of internal sufficient standard.	
	,
	_
12. Describe how the levels of risk and cost are consistent with management performance to the statutory requirements in #3 has resulted in levels of ES&H and cost performance.	
with management goals inlouding the use of industrial standards for industrial issues.	o indi dio concicion
13. Pick the basic implementing assumption from the list. ☐ Major positive impact ☐ M ☐ Minor positive impact ☐ M	linor negative impact
☑ No net impact ☑ W	ajor nogative impaci
14. Describe the nature and status of implementation including cost-effectiveness) <u> </u>
Experience has demonstrated that this program is both successful and cost-effective.	
	4

		Issue origin ☑ Hazard analysis ☐ Identification Team
1.	Issue(s)	
024	. Construction - e	earth clearing
l		
	- die e	
L		
	Focus group	☐ Emergency Management ☐ Fire Protection
		Environmental Frotection Management & Oversight Fradiation Frotection
2.	le there a ne	cessary standard which applies to this issue? ☑ YES ☐ NO
۷.	is there a ne	
		If yes, continue; otherwise skip to 6.
3.	Necessary st	andard(s)
_	OFR 1926.604	
4.	Are there any	aspects of these necessary standard(s) which do not add value?
		If yes, continue; otherwise skip to 6.
_	D	f was value added concerts of wasanamy standard(a)
5.	Description o	f non-value added aspects of necessary standard(s).
		<u> </u>
6	lo the level -	f rick appointed with the incurate consistent with management
6. per		f risk associated with the issue(s) consistent with management s assuming compliance with applicable necessary standards? ☑ YES ☐ NO
L -,		If no continue; otherwise skip to 12.
7.	le there a no	n-required external standard which applies to this issue?
••	is there a no	n-required external standard which applies to this issue?

8. External sufficient standard citation		
		· .
9. Is the level of risk associated with the issue(s) consi	stent with	☐ YES ☐ NO
management performance goals assuming compliance with		<u> </u>
(non-statutory) external standard?	If no continue;	otherwise skip to 12.
10. Is an internal standard required to attain a level of r	isk consistent with	☐ YES ☐ NO
management performance goals?		
11. Describe nature and status of internal sufficient sta	ndard.	
		:

40 Passilla have the levels of viels and seet are society		
12. Describe how the levels of risk and cost are consist Past adherance to the statutory requirement in #3 has resulted in levels		
with management goals inlouding the use of industrial standards for inc		
		,
		'
13. Pick the basic implementing assumption from the list	Major positive impact Minor positive impact	☐ Minor negative impact
	No net impact	ivajor negative impact
14. Describe the nature and status of implementation i		ness.
Experience has demonstrated that this program is both successful and	d cost-effective.	
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		Issue origin 🗵 Hazard analysis 🔲 Iden	tification Team
1.	Issue(s)		- Vall
025	. Construction	on - fall hazards	
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	Focus grou		
		☐ Environmental Protection ☐ Management & Oversight ☐ Radiation Protection	
	•	_	
2.	Is there a	necessary standard which applies to this issue?	YES NO
		If yes, continue; otherwis	e skip to 6.
	Nassassass		
3.		y standard(s)	
	CFR 1926.500 CFR 1926.104		
23	OI 11 1320.104		İ
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<u> </u>			!
		_	
4.	Are there		YES 🔀 NO
		If yes, continue; otherwi	se skip to 6.
	•		
5.	Description	on of non-value added aspects of necessary standard(s).	
			1
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<u></u>			
6.	Is the leve	el of risk associated with the issue(s) consistent with management	AVEC ENG!
		goals assuming compliance with applicable necessary standards?	YES NO
		If no continue; otherwis	se skip to 12.
7.	Is there a	non-required external standard which applies to this issue?	YES NO
- •		If yes, continue; otherwis	

8. External sufficient standard citation		
	·	
9. Is the level of risk associated with the issue(s) consisten management performance goals assuming compliance with the		☐ YES ☐ NO
(non-statutory) external standard?		otherwise skip to 12
•		oniorinos skip to 12
10. Is an internal standard required to attain a level of risk	consistent with	Elveo Elvo
management performance goals?		YES NO
11. Describe nature and status of internal sufficient standa	rd.	
		
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40 Beautha haw the levels of siste and seat are consistent	!46	
12. Describe how the levels of risk and cost are consistent Past adherance to the statutory requirements in #3 has resulted in levels of with management goals including the use of industrial standards for industri	ES&H and cost perform	
	•	
	,	
13. Pick the basic implementing assumption from the list.	Major positive impact	Minor negative impact
	Minor positive impact { No net impact	iviajor negative impact
	<u> </u>	
14. Describe the nature and status of implementation inclu		ess.
Experience has demonstrated that this program is both successful and cos	st-effective.	
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		Issue origin ☑ Hazard analysis ☐ Identification Te	am
1.	Issue(s)	Trace diversity of the factor	Jai II
027	7. Construction -	- hand tools	
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	44.		
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	Focus group	☐ Emergency Management ☐ Fire Protection ☑ Occupational Safety	
	, , ,	☐ Environmental Protection ☐ Management & Oversight ☐ Radiation Protection	
2.	is there a no	ecessary standard which applies to this issue?	
	io more a m		
		If yes, continue; otherwise skip to	6.
_	D	about doubles	
3.	Necessary s		
	CFR 1926.300-30	01	1
	CFR 1926.303		
	CFR 1926.305		- 1
29	CFR 1910.242		
			- 1
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4.	Are there an	ny aspects of these necessary standard(s) which do not add value?	NO
		If yes, continue; otherwise skip to	
		ii yoo, ooniiito onip t	
_	Description	of non-value added considered as non-non-valued(a)	
5.	Description	of non-value added aspects of necessary standard(s).	
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e	le the level	of risk apposited with the issue(s) consistent with management	
6.		of risk associated with the issue(s) consistent with management als assuming compliance with applicable necessary standards?	NO
hei	Tomance you	and assuming comphanics with approache necessary standards:	_
		If no continue; otherwise skip to	12.
7.	Is there a no	on-required external standard which applies to this issue?	NO T
		If yes, continue; otherwise skip to	

8. External sufficient standard citation	
2. In the level of riels appointed with the incur(s) appointent with	
9. Is the level of risk associated with the issue(s) consistent with management performance goals assuming compliance with the above	☐ YES ☐ NO
t t t t t t t t t t t t t t t t t t t	otherwise skip to 12
	•
10. Is an internal standard required to attain a level of risk consistent with	. Elve
management performance goals?	☐ YES ☐ NO
11. Describe nature and status of internal sufficient standard.	
Tr. Describe nature and status of internal sumicient standard.	
12. Describe how the levels of risk and cost are consistent with management Past adherance to the statutory requirements in #3 has resulted in levels of ES&H and cost performance.	
with management goals inlouding the use of industrial standards for industrial issues.	illiance that are consistent
13. Pick the basic implementing assumption from the list. Major positive impact	☐ Minor negative impact
☐ Minor positive impact	☐ Major negative impact
No net impact No	
14. Describe the nature and status of implementation including cost-effective	eness.
Experience has demonstrated that this program is both successful and cost-effective.	

1.	Issue(s)	Issue origin 🛮 Hazard analysis 🔲 Identification	Team
	• • •	- heavy equipment	
			İ
	,.		ŀ
I	Focus group	☐ Emergency Management ☐ Fire Protection	
	•	☐ Environmental Protection ☐ Management & Oversight ☐ Radiation Protection	
2.	Is there a ne	necessary standard which applies to this issue?	NO
		If yes, continue; otherwise skip	to 6.
3.	Necessary s	standard(s)	
	CFR 1926.550		
	OFR 1926.600-60 OFR 1926.250	02	1
	OFR 1926.251		ŀ
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			-
			İ
			•
4.	Are there an	ny aspects of these necessary standard(s) which do not add value?	
		lf yes, continue; otherwise skip	to 6.
<u>5.</u>	Description	of non-value added aspects of necessary standard(s).	
			İ
			1
		of risk associated with the issue(s) consistent with management	T NO T
per	formance goa	als assuming compliance with applicable necessary standards:	
		If no continue; otherwise skip	to 12.
7.	Is there a no	on-required external standard which applies to this issue?	NO
		If yes, continue; otherwise skip	to 10.

8. External sufficient standard citation		
	· ·	
9. Is the level of risk associated with the issue(s) consimanagement performance goals assuming compliance wit		□YES □ NO
(non-statutory) external standard?	If no continue; other	wise skip to 12
10. Is an internal standard required to attain a level of management performance goals?	risk consistent with	YES NO
11. Describe nature and status of internal sufficient sta	andard.	
12. Describe how the levels of risk and cost are consisted and adherance to the statutory requirements in #3 has resulted in levels.		
with management goals inlouding the use of industrial standards for in-	dustrial issues.	
		<u>-</u>
13. Pick the basic implementing assumption from the lis	t. Major positive impact Min Minor positive impact Ma	or negative impact
	No net impact	
14. Describe the nature and status of implementation	including cost-offsetiveness	
14. Describe the nature and status of implementation Experience has demonstrated that this program is both successful an		

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1.	Issue(s)		issue	origin	
	. Construction -	ladder			
	. Conondonon	,			
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		· · · · · · · · · · · · · · · · · · ·			
	Focus group	☐ Emergency Management ☐ Fire Pro	otection		☑ Occupational Safety
	. 0000 . g. 00p	☐ Environmental Protection ☐ Manage		Oversigl	
2.	le there a n	ecessary standard which applies to	thie i	eena?	M VEC TIMO
۷.	is there a m	socodary standard willon applies to			¥YES □ NO
				If	yes, continue; otherwise skip to 6.
_					•
3. —–	Necessary s	standard(s)			
29 (CFR 1926.105				
	OFR 1926.1050-	1053			
29 (CFR 1926.1060 CFR 1926.603	•			
	CFR 1926.550				
	OFR 1926.851				
	CFR 1926.951				·
Ł	CFR 1926.605				
29 (CFR 1926.451				
	CFR 1910.25-27				
	OFR 1910.31				
	CFR 1910.179 CFR 1910.333				
23	JI 11 19 10.000				
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4.	Are there an	y aspects of these necessary stan	garg(s)		<u> </u>
				•	f yes, continue; otherwise skip to 6.
5.	Description	of non-value added aspects of ne	cessar	y stanc	lard(s).
					•
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6.	is the level	of risk associated with the issue(s	s) cons	istent v	with management
		ils assuming compliance with app			
					If no continue; otherwise skip to 12.
		•			in the committee, emissione emp to the
7.	is there a ne	on-required external standard which	n applie		
				· If	yes, continue; otherwise skip to 10.

8. External sufficient standard citation		
	· ·	
9. Is the level of risk associated with the issue(s) cons	sistent with	YES NO
management performance goals assuming compliance wi		
(non-statutory) external standard?	If no continue; othe	rwise skip to 12
do le en internal atomdand required to other a level of	ulali, a amalakank sulth	
10. Is an internal standard required to attain a level of management performance goals?	risk consistent with	☐ YES ☐ NO
11. Describe nature and status of internal sufficient st	andard.	· · · · · · · · · · · · · · · · · · ·
•		
12. Describe how the levels of risk and cost are consist		
Past adherance to the statutory requirements in #3 has resulted in lev		e that are consistent
with management goals inlouding the use of industrial standards for ir	idustriai issues.	
13. Pick the basic implementing assumption from the li	st. Major positive impact M	inor negative impact
	☐ Minor positive impact ☐ M ☑ No net impact	ajor negative impact
•	Mar No het impact	
14. Describe the nature and status of implementation	including cost-effectiveness	•
Experience has demonstrated that this program is both successful a		
•		

		Issue origin 🔀 Hazard analysis	☐ Identification Team
1.	Issue(s)	isotto Unigni	La la continuación y Carri
032	. Construction	- materials handling	
	Focus group	☐ Emergency Management ☐ Fire Protection ☑ Occupational S	Safety
,	, cous gioup	☐ Environmental Protection ☐ Management & Oversight ☐ Radiation Protection	
2.	Is there a n	ecessary standard which applies to this issue?	YES NO
			therwise skip to 6.
		n yes, continue, o	merwise skip to o.
3.	Necessary	standard(s)	
	CFR 1926.250		
	OFR 1926.602		•
			j
<u> </u>			
4.	Are there as	ny aspects of these necessary standard(s) which do not add value	? YES NO
		If yes, continue;	otherwise skip to 6.
5.	Description	of non-value added aspects of necessary standard(s).	
	·		
_	1- 4	at the annual and the formation and the state of the stat	
		of risk associated with the issue(s) consistent with management als assuming compliance with applicable necessary standards?	X YES INO
hei	iormance go		thorwice okin to 10
		ii no continue; o	otherwise skip to 12.
			<u></u>
7.	Is there a n	on-required external standard which applies to this issue?	☐ YES ☐ NO
		If yes, continue; of	therwise skip to 10.

8. External sufficient standard citation		
 Is the level of risk associated with the issue(s) consistent management performance goals assuming compliance with the 		☐YES ☐NO
(non-statutory) external standard?		otherwise skip to 12
10. Is an internal standard required to attain a level of risk c management performance goals?	consistent with	YES NO
11. Describe nature and status of internal sufficient standard	d.	
		•
12. Describe how the levels of risk and cost are consistent v	with management i	performance goals.
Past adherance to the statutory requirements in #3 has resulted in levels of E	S&H and cost perforr	
with management goals inlouding the use of industrial standards for industria	l issues.	
•		
13. Pick the basic implementing assumption from the list.	Major positive impact	☐ Minor negative impact
	Minor positive impact No net impact	☐ Major negative impact
14. Describe the nature and status of implementation include		ness.
Experience has demonstrated that this program is both successful and cost	-ettective.	
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	leave(s)		Issue	origin	Hazard analysis	☐ Identification Team
1.	Issue(s)	possibility of hitting utilities				
ပြသသ	. Construction -	possibility of fritting durines				
						Ï
	Facus group	☐ Emergency Management ☐ Fire	Drotostion		☑ Occupational	Cofoty
	Focus group	☐ Environmental Protection ☐ Mai		Oversia		
			<u> </u>			
2.	Is there a ne	cessary standard which applies	to this is	ssue?		X YES NO
	11.				ves. continue: c	otherwise skip to 6.
			•	••	, , , , , , , , , ,	
3.	Necessary s	tandard(s)				
29 (CFR 1926.651(b)					
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<u></u>			 			
4.	Are there an	y aspects of these necessary s	tandard(s)			
				ı	If yes, continue;	otherwise skip to 6.
				_		
5.	Description	of non-value added aspects of	necessar	y stanc	dard(s).	
						Ĭ
6.		of risk associated with the issu				YES NO
per	Tormance goa	is assuming compliance with	applicable	neces	-	
	•				n no continue; c	otherwise skip to 12.
_						
7.	is there a no	on-required external standard wi	nich applie		his issue?	YES NO

B. External sufficient standard citation		
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. Is the level of risk associated with the issu		YES NO
nanagement performance goals assuming comp		
non-statutory) external standard?	If no continue; o	therwise skip to 1
0. Is an internal standard required to attain a	level of risk consistent with	-
nanagement performance goals?		☐ YES ☐ NO
Describe nature and status of internal sur	fficient standard	
1. Describe nature and status of internal sur	moient standard.	
		•
		-
2. Describe how the levels of risk and cost a	are consistent with management pe	erformance goals.
Past adherance to the statutory requirement in #3 has resu		
rith management goals inlcuding the use of industrial stan	ndards for industrial issues.	
3. Pick the basic implementing assumption from	om the list. Major positive impact	Minor negative impa
	☐ Minor positive impact ☐ ☑ No net impact	Major negative impa
	No net impact	
4. Describe the nature and status of implem	nentation including cost-effectivene	ess.
experience has demonstrated that this program is both su		

			Issue	origin	X Hazard analysis □ Id	lentification Team
1.	Issue(s)					
034	. Construction -	scaffolding				
	· · · · · · · · · · · · · · · · · · ·					
	Focus group	☐ Emergency Management			☑ Occupational Safety	
		☐ Environmental Protection	☐ Management &	Oversigh	nt Radiation Protection	
2.	Is there a ne	cessary standard which	applies to this is	sue?		YES NO
		•	•	If	yes, continue; other	vise skip to 6.
3.	Necessary s	tandard(s)				
29 (CFR 1926.451					
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				3000 0 0000		
4.	Are there any	aspects of these neces	seary etandard(e)	which	do not add value?	YES NO
٦.	Are there any	aspects of these here	soury standard(s)		f yes, continue; other	
				•	. ,00, 00	wide omp to or
5.	Description of	f non-value added aspe	acte of nacassary	, etand	lard(e)	
J.	Description C	i iioii-vaide added aspe	otto of necessary	Starro		
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1						
						
6.		of risk associated with t				YES NO
per	formance goal	s assuming compliance	with applicable	neces	-	
	-				If no continue; other	wise skip to 12.
7.	Is there a no	n-required external stand	dard which applie	s to th	nis issue?	YES NO
					yes, continue; otherw	vise skip to 10.

Is the level of risk associated with the issue(s) consistent with anagement performance goals assuming compliance with the above ion-statutory) external standard? If no continue; otherwise skip to 12 in an internal standard required to attain a level of risk consistent with anagement performance goals? Describe nature and status of internal sufficient standard. Describe nature and status of internal sufficient standard. Describe how the levels of risk and cost are consistent with management performance goals. Is adherance to the statutory requirement in #3 has resulted in levels of ES&H and cost performance that are consistent the management goals inlouding the use of industrial standards for industrial issues.
anagement performance goals assuming compliance with the above If no continue; otherwise skip to 12 (in continue) external standard? If no continue; otherwise skip to 12 (in continue) otherwise skip to 12 (in continue) external standard required to attain a level of risk consistent with anagement performance goals? I. Describe nature and status of internal sufficient standard. 2. Describe how the levels of risk and cost are consistent with management performance goals. ast adherance to the statutory requirement in #3 has resulted in levels of ES&H and cost performance that are consistent.
anagement performance goals assuming compliance with the above If no continue; otherwise skip to 12 (If no c
anagement performance goals assuming compliance with the above If no continue; otherwise skip to 12 (If no c
anagement performance goals assuming compliance with the above If no continue; otherwise skip to 12 (If no c
Describe how the levels of risk and cost are consistent with management performance goals. If no continue; otherwise skip to 12 If no continue;
Describe how the levels of risk and cost are consistent with management performance goals. 2. Describe how the levels of risk and cost are consistent with management performance goals. ast adherance to the statutory requirement in #3 has resulted in levels of ES&H and cost performance that are consistent.
2. Describe how the levels of risk and cost are consistent with management performance goals. ast adherance to the statutory requirement in #3 has resulted in levels of ES&H and cost performance that are consistent.
2. Describe how the levels of risk and cost are consistent with management performance goals. ast adherance to the statutory requirement in #3 has resulted in levels of ES&H and cost performance that are consistent
2. Describe how the levels of risk and cost are consistent with management performance goals. ast adherance to the statutory requirement in #3 has resulted in levels of ES&H and cost performance that are consistent
2. Describe how the levels of risk and cost are consistent with management performance goals. ast adherance to the statutory requirement in #3 has resulted in levels of ES&H and cost performance that are consistent
ast adherance to the statutory requirement in #3 has resulted in levels of ES&H and cost performance that are consistent
ast adherance to the statutory requirement in #3 has resulted in levels of ES&H and cost performance that are consistent
ast adherance to the statutory requirement in #3 has resulted in levels of ES&H and cost performance that are consistent
ast adherance to the statutory requirement in #3 has resulted in levels of ES&H and cost performance that are consistent
ast adherance to the statutory requirement in #3 has resulted in levels of ES&H and cost performance that are consistent
ast adherance to the statutory requirement in #3 has resulted in levels of ES&H and cost performance that are consistent
ast adherance to the statutory requirement in #3 has resulted in levels of ES&H and cost performance that are consistent
ast adherance to the statutory requirement in #3 has resulted in levels of ES&H and cost performance that are consistent
ast adherance to the statutory requirement in #3 has resulted in levels of ES&H and cost performance that are consistent
ast adherance to the statutory requirement in #3 has resulted in levels of ES&H and cost performance that are consistent
th management goals inicuding the use of industrial standards for industrial issues.
B. Pick the basic implementing assumption from the list. ☐ Major positive impact ☐ Minor negative impact ☐ Major negative impact
☑ No net impact ☑ Major negative impact
Describe the nature and status of implementation including cost-effectiveness.
normance has demonstrated that this program is both successful and east officialise
operience has demonstrated that this program is both successful and cost-effective.
spenence has demonstrated that this program is both successful and cost-effective.
spenence has demonstrated that this program is both successful and cost-ellective.

	1(-)		Issue	origin	Hazard analysi Haza	is 🔲 Identification Team
1.	lssue(s)					
	. Construction -					Ì
1128	. Other personn	el hazards - traffic hazards				
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	0					
i	Focus group	☐ Emergency Management		O:	Occupationa	
		☐ Environmental Protection	☐ Management &	Oversigi	nt L Radiation Pr	blection
2.	is there a ne	ecessary standard which	applies to this is	ssue?		YES NO
				If	yes, continue;	otherwise skip to 6.
						-
3.	Necessary s	standard(s)				
29 (OFR 1926.600-60)1		·		<u> </u>
	CFR 1926.200-20			•		· ·
Illino	ois Compiled Sta	itutes (ICS) Chapter 625 (State	vehicle code)			
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4.	Are there an	y aspects of these neces	sary standard(s)	which	do not add val	ue? YES NO
			, (,			; otherwise skip to 6.
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_	Description	of man value added same	ata of magazan	. atama	lovd(o)	
5.	Description	of non-value added aspe		Stant	iaru(s).	
	•					
6.	Is the level	of risk associated with th	ne issue(s) consi	istent v	vith managemen	t RVC FVC
per		ls assuming compliance				
•	•	. – · · ·			-	otherwise skip to 12.
	_					
7.	is there a no	on-required external stand	ard which applie			YES NO
				lf	ves. continue:	otherwise skip to 10.

8. External sufficient standard citation		
	•	
9. Is the level of risk associated with the issue(s) consi	stent with	YES NO
management performance goals assuming compliance wit (non-statutory) external standard?		
(non-statutory) external standard?	If no continue;	otherwise skip to 12
10. Is an internal standard required to attain a level of r	ick consistent with	
management performance goals?	isk collsistellt with	YES NO
11. Describe nature and status of internal sufficient sta	n dord	
11. Describe nature and status of internal sufficient sta	inuaru.	
	_	
12. Describe how the levels of risk and cost are consist Past adherance to the statutory requirements in #3 has resulted in level		
with management goals inlouding the use of industrial standards for inc		anso that are consistent
		·
An a Mile the first trade and the analysis from the Park	Major positivo impost	7 Minor pagativa impact
13. Pick the basic implementing assumption from the list	Minor positive impact [☐ Major negative impact
	No net impact	
14. Departing the matrice and status of implementation !	noludina oost effectives.	
14. Describe the nature and status of implementation i Experience has demonstrated that this program is both successful and		ess.
Experience has demonstrated that the program to both subcossion and		

			Issue	oriain	☐ Hazard analysis ☐ Id	entification Team
1.	lssue(s)			og	Za riazara anarysis 🗀 ia	crimication reality
036	. Electricity - ba	Itery				
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	Focus group	☐ Emergency Management ☐ Fire Prot	tection	##. *		,
		☐ Environmental Protection ☐ Manager	ment &	Oversigl	nt Radiation Protection	
					,	
2.	is there a ne	cessary standard which applies to	this is	sue?		YES NO
	•			lf	yes, continue; otherv	vise skip to 6.
3.	Necessary s	taṇdard(s)	,			
29	CFR 1910.305(j)	7) (explosion prevention)				
1					•	
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4.	Are there an	y aspects of these necessary stand	lard(s)	which	do not add value?	YES NO
			, ,		f yes, continue; other	
5.	Description	of non-value added aspects of nec	cessary	stand	lard(s).	
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c	le the leve!	of rick apposinted with the inner(s)	\ oona!	otont -	with management	
6. per		of risk associated with the issue(s) Is assuming compliance with appli				YES NO
P01		g vanipilativa iiitii uppii			If no continue; other	vise skip to 12
					no oblimine, outers	onip to 12.
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7.	is there a no	on-required external standard which	appile			YES NO
				IT.	yes, continue; otherw	rise skip to 10.

8. External sufficient standard citation	
9. Is the level of risk associated with the issue(s) consistent with	
management performance goals assuming compliance with the above	☐ YES ☐ NO
(non-statutory) external standard?	otherwise skip to 12
10. Is an internal standard required to attain a level of risk consistent with	
management performance goals?	YES NO
11. Describe nature and status of internal sufficient standard.	
12. Describe how the levels of risk and cost are consistent with management Past adherance to the statutory requirement in #3 has resulted in levels of ES&H and cost perform	
with management goals inlouding the use of industrial standards for industrial issues.	
13. Pick the basic implementing assumption from the list. Major positive impact Minor positive impact	☐ Minor negative impact
Ninor positive impact No net impact	inajor negative impact
14. Describe the nature and status of implementation including cost-effective	naee
Battery installations generally involve limited numbers of batteries and are in areas having more that	an adequate ventilation
so as to preclude any significant hazard. Hazards associated with battery installations are well know been handled effectively. Experience has demonstrated that this program is both successful.	

		Issue origin A Hazard analysis A Identification Te	am
1.	Issue(s)		
		xposed conductors / >50 volts	
038	B. Electricity - hig	gn vortage	
			l
L_			
	Focus group	☐ Emergency Management ☐ Fire Protection ☑ Occupational Safety	
		☐ Environmental Protection ☐ Management & Oversight ☐ Radiation Protection	•
2.	Is there a ne	ecessary standard which applies to this issue?	
		If yes, continue; otherwise skip to	
		ii yoo, commuc, omermoe omp to	٠.
3.	Necessary s	standard(s)	
29 (CFR 1910.147 (L		
	CFR 1910.332-33		
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L			
4.	Are there an	ny aspects of these necessary standard(s) which do not add value?	NO
	7.1.0	If yes, continue; otherwise skip to	
		· ,··, · ,· ,	
5.	Description	of non-value added aspects of necessary standard(s).	
"	Bescription	or non-rando added doposto or noosoodly standard(o).	
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6.	is the level	of risk associated with the issue(s) consistent with management	
		als assuming compliance with applicable necessary standards?	10
,	3	If no continue; otherwise skip to	12.
		no continuo, carotinuo otap to	
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7.	is there a no	on-required external standard which applies to this issue?	
		If yes, continue; otherwise skip to	10.

8. External sufficient standard citation	
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9. Is the level of risk associated with the issue(s) consistent with	YES NO
management performance goals assuming compliance with the above (non-statutory) external standard?	4h
(non-statutory) external standard.	therwise skip to 12
10. Is an internal standard required to attain a level of risk consistent with	·
management performance goals?	X YES NO
11. Describe nature and status of internal sufficient standard.	
Fermilab ES&H Manual Chapters 5040-5042, and 5044.	
In general, OSHA electrical safety standards are not a good match for electrical hazards in a researc	h environment. As
such Fermilab has developed internal standards which appear as chapters in its ES&H Manual: 5040 - Defines basic policies and responsibilities. TA provides practical guidance and interpretation:	s of external standards
5041 - Requirements for working on equipment that goes beyond OSHA. Includes LOTO and work or	
5042 - Guidance for work on premises wiring including work permit for energized systems. 5044 - Guidance for exposed conductors in accelerator enclosures.	
5044 - Guidance for exposed conductors in accelerator enclosures.	
	4
12. Describe how the levels of risk and cost are consistent with management pe	
Employment of safety related work practices and provision of appropriate training will achieve a level with management performance goals. Past adherance to the statutory requirements in #3 combined	
electrical safety programs in #11 has resulted in levels of ES&H and cost performance that are consi	
goals including the use of industrial standards for industrial issues.	
13. Pick the basic implementing assumption from the list. Major positive impact	Minor negative impact
☐ Minor positive impact ☐ ☑ No net impact	Major negative impact
Es 110 not impute	
14. Describe the nature and status of implementation including cost-effectivene	ess.
Implementation is enhanced by appropriate application of National Electrical Code requirements, rea	
and guidance as provided by the Electrical Safety Subcommittee of the LSC, and by Fermilab ES&H related to electrical safety - Chapters 5040-5046, 5120 (LOTO). Experience has demonstrated that t	
successful and cost-effective.	programme west

1.		e o	rigin	Hazard Ha	analysis	⊠ Iden	tification	Team
	39. Electricity - high power							
	41. Electricity - high current conductors / <50 volts							
	42. Electricity - stored energy / capacitors							ľ
043	43. Electricity - stored energy / inductors							
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L								
	Focus group ☐ Emergency Management ☐ Fire Protection	n		M Occur	oational S	Safety		
,	☐ Environmental Protection ☐ Management		/oreinl					
	El Environmental i Teteodori El Management	40,	roloigi	ii Li nadia	don'i tole	2011011		i
2.	. Is there a necessary standard which applies to this	iss	ue?			2	YES [NO
			If	yes, cont	linue: o	ــ therwis	a ekin	<u>+0 6</u>
			"	yes, com	inue, o	riiei wis	e svih	10 0.
_	Massacaus atomdoud(a)							
3.								
	9 CFR 1910.147 (LOTO)							
29 C	9 CFR 1910.332-333							
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1								
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	·							
4.	. Are there any aspects of these necessary standard(s	s) w	hich	do not ac	id value	? [YES	⊠ NO
			ŀ	f yes, con	itinue; d	otherwi	se skip	to 6.
							•	
_	Description of non-value added concete of necessary		- 6 1	lavel(a)				
5.	. Description of non-value added aspects of necessa	ary	stand	iaro(s).				
								1.
<u> </u>				<u> </u>				
_	le the level of viet essentiated with the issue/-\		ont	uith mass	romer*			
6.							YES I	NO
per	erformance goals assuming compliance with applicabl	ie n		-				
				If no con	tinue; o	therwis	e skip	to 12.
							-	
			_			P-14		
7.	. Is there a non-required external standard which app	lies]YES [
			lf	yes, cont	inue; ot	herwis	e skip	to 10.

8. External sufficient standard citation	
9. Is the level of risk associated with the issue(s) consistent with	YES NO
management performance goals assuming compliance with the above (non-statutory) external standard?	
(non-statutory) external standard? If no continue; others	wise skip to 12.
10. Is an internal standard required to attain a level of risk consistent with	
management performance goals?	YES NO
11. Describe nature and status of internal sufficient standard.	
Fermilab ES&H Manual Chapters 5040-5042, 5044, and 5046.	
In general, OSHA electrical safety standards are not a good match for electrical hazards in a research envisuch Fermilab has developed internal standards which appear as chapters in its ES&H Manual:	rironment. As
5040 - Defines basic policies and responsibilities. TA provides practical guidance and interpretations of e	
5041 - Requirements for working on equipment that goes beyond OSHA. Includes LOTO and work on ene 5042 - Guidance for work on premises wiring including work permit for energized systems.	rgized equipment.
5044 - Guidance for exposed conductors in accelerator enclosures.	
5046 - Guidance for low voltage high current power distribution systems.	
12. Describe how the levels of risk and cost are consistent with management perform	
Employment of safety related work practices and provision of appropriate training will achieve a level of ris with management performance goals. Past adherance to the statutory requirements in #3 combined with F	
electrical safety programs in #11 has resulted in levels of ES&H and cost performance that are consistent	
goals including the use of industrial standards for industrial issues.	
13. Pick the basic implementing assumption from the list. Major positive impact Minimum	or negative impact
☐ Minor positive impact ☐ Maj	or negative impact
Marin pact	
14. Describe the nature and status of implementation including cost-effectiveness.	
Implementation is enhanced by appropriate application of National Electrical Code requirements, reasoned and guidance as provided by the Electrical Safety Subcommittee of the LSC, and by Fermilab ES&H Manu	
related to electrical safety - Chapters 5040-5046, 5120 (LOTO). Experience has demonstrated that this pr	
successful and cost-effective.	
	}
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1.	lssu	ıe(s)									Issue	origin	[🔀 Hazard analysi	s	□ lder	ntification	Team
		tricity - li	abti	nina									_					
	, LICC	ti loity in	9	9														
l																		
	Econo	group	F	T Em	orgenc	v Man	agemer	at .	M Ei	o Pro	tection			☐ Occupationa	-	ofoty.		
	rocus	, group											ıhi	Radiation Pro				İ
			Ľ									0.0.0.9	<u>,</u>			011011		
_																-		
2.	is th	iere a r	1ec	essar	y stai	ndard	which	n a	applie	s to	this	ssue?				D	YES [NO
٠												H	f	yes, continue;	ot	herwi	se skip	to 6.
3.	Nec	essary	sta	ındar	d(s)													
41	AC - F	ire Protec	ctio										_					
		Fire Prev			d Safe	tv												1
		910.307(k					ous (cla	ıssi	ified] lo	ocatio	n)							
												protecti	ioi	n conductors)				
29 (CFR 19	910.106(6	∍)(6	i)(i) (lg	gnition	source	ofor flar	mm	able v	apors	s)			•				
29 (CFR 19	910.106(h	า)(7)(i){a}	(Ignitio	on sou	irce for i	flan	nmabl	e vap	ors)							
29 (CFR 1	926.152(i)(6)	(Ignil	tion so	urce fo	or flamm	nab	le vap	ors)								1
l																		
											-							
																_		
4.	Are	there a	ny	aspe	cts of	f thes	se nec	ess	sary	stanc	lard(s)	which	•	do not add val	ueʻ	? [☐ YES	NO 🔀
												i	lf	yes, continue;	0	therwi	ise skip	to 6.
5.	Dage	cription	οf	non	-value	hhe '	ed ası	nec	cts o	f ne	cessar	v stanc	ds	ard(s)				
"		- Tiption										y otalic	_					
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Щ													_					
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6.														ith managemen		Ī	YES I	NO
per	iorma	ince go	ais	a55	uming	con	puanc	æ	WITH	аррі	icabie	neces		ary standards?				
													Ì	f no continue;	ot	herwi	se skip	to 12.
7	je th	ore a m		-reau	ired -	vtorn	al eta	nd-	ard u	hish	annli	ee to H	þ.	s issue?		li	X YES [TNO I
•	13 UI	a II		. oqu		-A40111	JIA				~hhլլ			yes, continue;	O#I			
												11		yes, continue;	UL	WIS	AIVe a	w IU.

8. External sufficient standard citation	**************************************	· · · · · · · · · · · · · · · · · · ·
BOCA National Building Code BOCA Fire Prevention Code		
National Fire Protection Association National Fire Codes (NFPA Standards Li	st)	İ
UL Listing		
O to the level of rick appointed with the inque/o) consistent		
Is the level of risk associated with the issue(s) consistent management performance goals assuming compliance with the		YES NO
(non-statutory) external standard?	If no continue; othe	rwise skip to 12.
	•	•
10. Is an internal standard required to attain a level of risk c	onsistent with	Elves Elve
management performance goals?		YES NO
11. Describe nature and status of internal sufficient standard	4	
Tr. Describe nature and status of internal sufficient standard	u	
		·
12. Describe how the levels of risk and cost are consistent with management performance goals because it		
selected for the standard residential/commercial/industrial electrical equipme		
found that statutory requirements were insufficient and that the building code	and national fire code stan	dards selected
were necessary to achieve adequate protection.	÷	İ
	· · · · · · · · · · · · · · · · · · ·	
13. Pick the basic implementing assumption from the list.	Major positive impact	nor negative impact
Li N	Minor positive impact 🔲 Ma	ajor negative impact
	lo net impact	
14 Describe the nature and status of implementation include	ling and offertiveness	
14. Describe the nature and status of implementation include The overall program exists and the internal standard has been implemented.		
will require changes to construction and contract documents.	Adoption of the BOCA Natio	rial building code
		i i

1 Januara	Issue origin	🔀 Hazard analysis 🗌	Identification Team
1. Issue(s) 044. Env - air emissions / nonrad			
1044. Env - an emissions / nomad			1
			i
Focus group	rotection	☐ Occupational Saf	ety
	gement & Oversigh	nt Radiation Protect	ion
2. Is there a necessary standard which applies t	to this issue?		YES NO
	If	yes, continue; othe	erwise skip to 6.
3. Necessary standard(s)			
Clean Air Act Amendments 1990, 42 USC 7401 et seq.			
40 CFR 50			
40 CFR 52 Subpart O			
40 CFR 58 40 CFR 60-61			
40 CFR 63			
40 CFR 80			
40 CFR 82			
40 CFR 88 Subpart C			
40 CFR 264-265 35 IAC Subtitle B and permits pursuant			
33 170 Subtitle B and pormits pursuant			
4. Are there any aspects of these necessary sta			YES X NO
	ı	f yes, continue; oth	erwise skip to 6.
5. Description of non-value added aspects of n	iecessary stand	lard(s).	
	•		4
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O to the level of viels encodeded with the leave	(a) consistent :	with management	
6. Is the level of risk associated with the issue performance goals assuming compliance with ap			YES NO
performance godio assuming compilation with ap	.p.,,oanio 110003	If no continue; other	erwise skin to 12
		n no continue, our	EIWISC SKIP W 12.
			<u></u>
7. Is there a non-required external standard which			YES NO
	if	yes, continue; other	erwise skip to $1\overline{0}$.

8. External sufficient standard citation		
9. Is the level of risk associated with the issue(s) consist		YES NO
management performance goals assuming compliance with (non-statutory) external standard?		
(non-statutory) external standard.	otherwise skip to 12.	
10. Is an internal standard required to attain a level of ris	k consistent with	
management performance goals?		YES NO
11. Describe nature and status of internal sufficient stand	lard	
17. Describe flature and status of internal sufficient state	· · · · · · · · · · · · · · · · · · ·	
	•	
12. Describe how the levels of risk and cost are consister Continuation of the current program will provide an appropriate level of pro-		
consistent with management performance goals because management e	xpects to use industrial so	
issues. This is an industrial issue and the solution chosen is an industrial	solution.	
·		
	The state of the s	
13. Pick the basic implementing assumption from the list.	Major positive impact	Minor negative impact
13. Pick the basic implementing assumption from the list.	■ Minor positive impact	☐ Major negative impact
	☐ No net impact	
14. Describe the nature and status of implementation inc	luding cost-effectiven	
Continue current program. Implementation of Illinois' Clean Air Act Permit		
enforceable state operating permit by the end of 1995.	, 5 . , , ,	

				Issu	e origin		s Identification Team
1.	lssue(s)						- 1
045	i. Env - air emiss	ions / rad					
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	Focus group			☐ Fire Protection		☐ Occupational	
		Environmen	ital Protection	☐ Management	& Oversig	ht Radiation Pro	otection
_		_					
2.	is there a ne	ecessary stan	dard which	applies to this			YES NO
					11	f yes, continue;	otherwise skip to 6.
^	Nanagami a	dondord(o)					
3.	Necessary s		UCO 7401 et e	-			
40 i	an Air Act Amend CFR 61 Subpart F	imenis 1990, 42 I	USC 7401 et s	eq.			
	IAC Subtitle B an		ant				
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		•					
4	Are there an	v aspects of	these naces	eary etandard/	e) which	do not add valu	ue? YES NO
₹.	Are there an	y dopeoto of	tilese lieges	oury oldinoural	-		otherwise skip to 6.
						, , , , , , , , , , , , , , , , , , , ,	
5.	Description	of non-value	added aspe	cts of necess	arv stand	dard(s).	
						_	
6.	le the lovel	of rick secon	isted with th	na issuals) co	neietant :	with management	
						sary standards?	¥YES □ NO
			•			-	otherwise skip to 12.
						 ,	
7.	le there a no	n-required as	tornal etand	ard which app	liee to t	hie iseus?	YES NO
٠.	is incle a IR	required ex	ar stanu	and white app			otherwise skip to 10.

3. External sufficient standard citation	
Is the level of risk associated with the issue(s) consistent with	YES NO
anagement performance goals assuming compliance with the above	<u></u>
non-statutory) external standard? If no contin	ue; otherwise skip to 1
Is an internal standard required to attain a level of risk consistent with nanagement performance goals?	☐ YES ☐ NO
1. Describe nature and status of internal sufficient standard.	
	<u> </u>
2. Describe how the levels of risk and cost are consistent with manageme	ent performance goals.
continuation of the current program will provide an appropriate level of protection at an accepta	
3. Pick the basic implementing assumption from the list. Major positive imp	act Minor negative impa
3. Pick the basic implementing assumption from the list. ☐ Major positive imp	pact Major negative impa
☑ No net impact	
	••
4. Describe the nature and status of implementation including cost-effective	tiveness.
he requirements identified in #3 have proven to be both successful and cost-effective.	

		laana	orie!-	M Howard an about	□ Idea##===================================
1. Issue(s)		issue	origin	Mazaro analysis	☐ Identification Team
046. Env - cultural i	resources				
Focus group		ment Fire Protection		☐ Occupational	
	Environmental Prote Environmental Prote	ection	Oversig	ht	ection
• In these or use		olah amullas ta this i			Elyco Eluc
2. Is there a ne	cessary standard wi	nich applies to this i		voc continue:	YES □ NO otherwise skip to 6.
			11	yes, continue; t	otherwise skip to 6.
3. Necessary s	tandard(s)				
	eservation Act of 1966 [ar				
	Historic Preservation Act ources Protection Act of				
	aves Protection and Repa				
36 CFR 65					
36 CFR 78-79 36 CFR 800					
43 CFR 7					
•					
				•	
4. Are there an	y aspects of these r	necessary standard(s)			
				f yes, continue;	otherwise skip to 6.
5. Description	of non-value added	aspects of necessar	v etan <i>c</i>	lard(e)	
5. Description	or non-value added	dapcota of fiecessus	y Staric		
	· · · · · · · · · · · · · · · · · · ·				
		ith the issue(s) cons			YES NO
performance goa	is assuming compli	ance with applicable	neces		
				IT no continue;	otherwise skip to 12.
				O	
7. Is there a no	on-required external	standard which applic			☐ YES ☐ NO otherwise skip to 10.
				you, continue, t	THE OF MINE COLLECTION

8. External sufficient standard citation	
9. Is the level of risk associated with the issue(s) consistent with	YES NO
management performance goals assuming compliance with the above (non-statutory) external standard?	otherwise skip to 12
ii iio continue,	otherwise skip to 12
10. Is an internal standard required to attain a level of risk consistent with	
management performance goals?	YES NO
11. Describe nature and status of internal sufficient standard.	
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40 Describe how the levels of viels and seek are consistent with more remain	
12. Describe how the levels of risk and cost are consistent with management p Continuation of the current program will provide an appropriate level of protection at an acceptable of	
	·
	·
13. Pick the basic implementing assumption from the list. Major positive impact Minor positive imp	☐ Minor negative impact ☐ Maior negative impact
No net impact No	_
44 Decayibe the nature and status of implementation including and effective	
14. Describe the nature and status of implementation including cost-effectiven. The requirements identified in #3 have proven to be both successful and cost-effective.	ess.

	1					Issue	origin	Hazard analys	is 🔲 ld	entification Te	am
1.	lssue(s							,			
04	7. Env - as	sbestos									\neg
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l _											
					F1 F1 F1				1 0000		
	Focus g		L Emergency	Management	☐ Fire Prot			○ Occupation ○ Occupation			
			Environme	ntal Protection	<u> </u>	ment & C	versign	t 🔲 Radiation P	rotection		
								-			
2.	Is there	a nec	essarv stan	dard which	applies to	this is:	sue?			X YES N	
~-	10 111010	u 1,00			applies to				_		
							If	yes, continue;	otherw	ise skip to	6.
3.	Necess	ary st	andard(s)								
20	CFR 1910.	1001									
	CFR 1926.										
	CA, 15 USC		at sea								
	CFR 61 Sul		n ocq.								
	CFR 763	upait ivi									i
140	CFR 763										ı
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4.	Are the	re any	aspects of	these neces	ssary stand	ard(s)		do not add va		YES 🔀	
							lf	yes, continue	; other	wise skip to	6.
_	Docorin	tion of	F non-value	added aspe	acte of nec	accarv	etand	ard(e)			
5.	Descrip	tion o	i iioii-vaiue	added aspe	ects of nec	essai y	Stalluc	aiu(s).			
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6.								ith manageme		X YES N	0
pe	rtormance	e goals	s assuming	compliance	with appli	icable	necess	ary standards	?		لـــــــ
							1	If no continue:	otherv	vise skip to	12.
										•	
			•								
7.	is there	a nor	n-required e	xternal stan	dard which	applies	s to th	is issue?		YES N	10
							lf	yes, continue;	otherw	ise skip to	10.

			•	
anagement pe	of risk associated rformance goals as external standard	ssuming compli	ance with the above	☐ YES ☐ Nonue; otherwise skip to
	nal standard requirerformance goals?	ed to attain a l	evel of risk consistent with	YES N
. Describe n	ature and status	of internal suffi	cient standard.	
				· · · · · · · · · · · · · · · · · · ·
		ents in #3 has resul	e consistent with managem ted in levels of ES&H and cost p ands for industrial issues	
	goals inlouding the use	of industrial standa	ards for industrial issues.	
		of Industrial Standa	irus ioi inuusinai issues.	
		or industrial standa	arus ioi inuusinai issues.	
		or industrial standa	arus ioi inuusinai issues.	
		or industrial standa	arus ioi inuusinai issues.	,
		or industrial standa	arus ioi inuusinai issues.	,
h management (goals inlouding the use		n the list. □ Major positive im	pact ☐ Minor negative imp pact ☐ Major negative imp
h management o	goals inlouding the use	assumption from	n the list. ☐ Major positive imp ☐ Minor positive imp ☑ No net impact	pact Major negative imp
ith management of the base of	goals inlouding the use	assumption from tus of impleme intained in Chapter	n the list. □ Major positive im	ctiveness.

X YES NO

If yes, continue; otherwise skip to 10.

FERMILAB IDENTIFICATION TEAM DOCUMENTATION

	Issue origin		☐ Identification Team
1. Issue(s)			
048. Env - drinking water quality			
Focus group ☐ Emergency Management ☐ Fire Pro	otection	☐ Occupational S	afety
☑ Environmental Protection			
2. Is there a necessary standard which applies to	this issue?		YES NO
	lf	yes, continue; ot	herwise skip to 6.
2 Necessary standard(s)			
3. Necessary standard(s)			
SDWA, 42 USC 300f et seq. 40 CFR 141-142			
40 CFR 144			
40 CFR 146 40 CFR 147 Subpart O			
Illinois Ground Water Protection Act, IRS 1989 Chapter 111 1/2	2		
35 IAC Subtitle F Chapter I			Ï
77 IAC 890 77 IAC 900			
77 IAC 920			
77 IAC 925 DuPage County Health Department Private Water Supply Ordin	nance OH0002-90	1 Ch 34	
Kane County Ordinance 91-101 Water Well Code	141100 01 10002 00	, 01, 01	
			ł
4. Are there any aspects of these necessary stand	dard(s) which	do not add value	? TYES NO
			therwise skip to 6.
5. Description of non-value added aspects of ne	cessary stand	ard(s).	
6. Is the level of risk associated with the issue(s	a) consistent w	vith management	
performance goals assuming compliance with app			YES X NO
		If no continue; of	therwise skip to 12.

7. Is there a non-required external standard which applies to this issue?

8. External sufficient standard citation	
Recommended Standards for Water Works, Great Lakes Upper Mississippi R. Bd. of State Public	Health & Environmental
Managers (1992)	
Handbook for Sampling & Sample Preservation of Water and Wastewater, EPA-600/4-82-029	
9. Is the level of risk associated with the issue(s) consistent with	YES INO
management performance goals assuming compliance with the above (non-statutory) external standard?	
(non-statutory) external standard?	; otherwise skip to 12
10. Is an internal standard required to attain a level of risk consistent with	
management performance goals?	☐ YES ☐ NO
11. Describe nature and status of internal sufficient standard.	
•	
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12. Describe how the levels of risk and cost are consistent with management	porformance accie
12. Describe how the levels of risk and cost are consistent with management Continuation of the current program will provide an appropriate level of protection at an acceptable	
the jurisdiction within which the Laboratory falls will be implemented in the near future. The level	
management performance goals because management expects to use industrial solutions for ind	
industrial issue and the solution chosen is an industrial solution. The additional standards indicat	
necessary as a reference for industry-wide practice in this area. It contains no "requirements" oth	
standard practices.	
13. Pick the basic implementing assumption from the list. Major positive impact	Minor negative impact
☐ Minor positive impact	☐ Major negative impact
☐ No net impact	
14. Describe the nature and status of implementation including cost-effectiv	eness.
Essentially continue the current program, but with revision and upgrading. We assume jurisdiction	
rather than IEPA. The effect is to remove some requirements, but add responsibility for analysis.	
program will include the utilization of adequate sampling and analytical methods as found in relevant	

If yes, continue; otherwise skip to 10.

_	la a se	- (-)	Issue origin 🔀 Hazard analysis 🔲 Identifi	cation Team
1.	Issu	· ·		
049	9. Env	endang	gered species	ŀ
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<u> </u>				
	Foous	group	☐ Emergency Management ☐ Fire Protection ☐ Occupational Safety	
	rocus	group	☐ Emergency Management ☐ Fire Protection ☐ Occupational Safety ☐ Environmental Protection ☐ Management & Oversight ☐ Radiation Protection	
			Environmental Protection Management & Oversight Hadiation Protection	
2.	Is the	ere a no	necessary standard which applies to this issue?	ES NO
			If yes, continue; otherwise	skip to 6.
3.	Nece	essary	standard(s)	
En	dangere	d Species	es Act 16 USC 1531 et seq.	
50	CFR 17	•		
Illir	ois End	langered	d Species Protection Act, IRS 1991, Ch. 8, par. 331 et seq.	i
			rmit pursuant	
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<u> </u>				
4.	Are t	here an	ny aspects of these necessary standard(s) which do not add value?	YES NO
••			If yes, continue; otherwise	
			ii yes, commue, omerwise	skip to u.
		,		
5.	Desc	ription	of non-value added aspects of necessary standard(s).	
l				
İ				
<u> </u>				
6.	Is the	e level	of risk associated with the issue(s) consistent with management	
pe			pals assuming compliance with applicable necessary standards?	ES NO
•		_	If no continue; otherwise	skin to 12
			ii iio continue, otherwise	J. 10 12.
7	lo th		con-required external standard which applies to this issue?	/EC MINO

8. External sufficient standard citation		
). Is the level of risk associated with the issue(s) cons	istant with	
). Is the level of risk associated with the issue(s) cons nanagement performance goals assuming compliance wi		☐ YES ☐ NO
non-statutory) external standard?		otherwise skip to 12
10. Is an internal standard required to attain a level of	risk consistent with	YES NO
nanagement performance goals?		<u> </u>
11. Describe nature and status of internal sufficient st	andard.	
	-	
<u> </u>		
2. Describe how the levels of risk and cost are consider	tont with management	norformanaa saala
Describe how the levels of risk and cost are consist continuation of the current program will provide an appropriate level or		
· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·	
•		
3. Pick the basic implementing assumption from the li-	Major positive impact	☐ Minor negative impac
5. Fick the basic implementing assumption from the in	☐ Minor positive impact	☐ Major negative impac
	No net impact	
4. Describe the nature and status of implementation		ness.
he requirements identified in #3 have proven to be both successful a	and cost-effective.	
•		

1.	issue(s)		Issue	origin	★ Hazard analysis □	Identification Team
	. Env - groundv	vater protection				· ·
	. Lin giouna	rator protoction				
	_					
	Focus group	☐ Emergency Managemen	t П Fire Protection		☐ Occupational Safe	tv
,				Oversig	ht Radiation Protection	
		-				
2.	Is there a n	ecessary standard which	applies to this i	ssue?		X YES NO
				lf	yes, continue; othe	rwise skip to 6.
3.	Necessary					
		r Act, 42 USC Section 300f et	seq.			
	OFR 141-142 OFR 144					
40 C	CFR 146					
	CFR 147 Subpar		nontor 111 1/0			
		er Protection Act, IRS 1989 Cl hapter I; 730 - 732	Tapter 111 1/2			
77 I.	AC 920	•				
		alth Department Private Water		H-0002-	90, Ch.34, DuPage Count	y Code)
Kan	e County Healtr	Department Ordinance 91-10	i water well Code			
					•	
i						
ŀ	_					
4.	Are there ar	y aspects of these nece	essarv. standard(s)	which	do not add value?	YES NO
••	,	,,	,		f yes, continue; other	
					•	•
5.	Description	of non-value added asp	ects of necessary	y stanc	lard(s).	
	<u> </u>					
			•			
						•
\ .		•				1
'					•	
	<u> </u>					
6.	is the level	of risk associated with	the issue(s) cons	istent v	vith management	MVEQ ENG
per		als assuming complianc				YES NO
					If no continue; other	rwise skip to 12.
7.	ls there a n	on-required external star	dard which applie	es to tl	nis issue?	☐ YES ☐ NO
		-			yes, continue; other	

B. External sufficient standard citation	
). Is the level of risk associated with the issue(s) consistent with	☐ YES ☐ NO
nanagement performance goals assuming compliance with the above non-statutory) external standard?	otherwise skip to 12
,	omerwied chip to 12
0. Is an internal standard required to attain a level of risk consistent with management performance goals?	YES NO
	 34
1. Describe nature and status of internal sufficient standard.	
2. Describe how the levels of risk and cost are consistent with management p	
The current program provides an acceptable level of protection by adhering to the Class I groundward by the state of Illinois. The implementation of a wellhead protection program as described in the Illing Protection Act will significantly increase the level of performance and protection for the Laboratory. In the state of Illinois. The implementation of a wellhead protection for the Laboratory. In the state of the s	ois Groundwater
3. Pick the basic implementing assumption from the list. Major positive impact	☐ Minor negative impac
☐ Minor positive impact ☑ No net impact	☐ Major negative impac
iza no net impact	
4. Describe the nature and status of implementation including cost-effectiver	
The current program provides an acceptable level of protection, and the addition of a wellhead progrotection at modest cost. An important part of the implementation of the groundwater protection prouse of the concentration model to design shielding of targets. These design criteria are in the Fermil App.12B.	ogram program is the

			Issue	origin	M Hazard analysis	s Identification Team
1.	issue(s)			0.19	riazara arranyon	o 🗖 identinoditori / carri
051	. Env - hazardou	s waste				
	-3					
	Focus group	☐ Emergency Management	☐ Fire Protection		☐ Occupational	Safety
	; · · · · ·	■ Environmental Protection		Oversig	nt 🔲 Radiation Pro	
					··· 	
2.	Is there a ne	cessary standard which	applies to this is	ssue?		YES NO
				If	yes, continue;	otherwise skip to 6.
						•
3.	Necessary s	landard(s)				
RC	RA, 42 USC 6901	et seq.				
	CFR 260- 270	7000 1 - 1 (4.0.4) - 5 1 1 1				
,	HA Part B Permit CFR 1910.120	(Illinois Log #131), including I	=mergency Continger	ncy pian		
	AC Subtitle G					
	eral Facility Com	pliance Act				
						1
1						
4.	Are there any	aspects of these nece	ssary standard(s)	which	do not add valu	ue? YES NO
				ı	f yes, continue;	otherwise skip to 6.
5.	Description of	of non-value added aspe	ects of necessary	y stanc	lard(s).	
1				•		
l						
						1
						İ
<u> </u>						
6.	is the level	of risk associated with 1	the issue(s) cons	istent :	vith manacement	t
		is assuming compliance				
•	J	_ "	• •		=	otherwise skip to 12.
7.	le thore a no	n-required external stan-	dard which annlis	e to ti	nie ieeue?	YES NO
•	io more a no		and millon applic			otherwise skip to 10.

8. External sufficient standard citation
9. Is the level of risk associated with the issue(s) consistent with
management performance goals assuming compliance with the above
(non-statutory) external standard? If no continue; otherwise skip to 12
10. Is an internal standard required to attain a level of risk consistent with management performance goals?
management performance godio.
11. Describe nature and status of internal sufficient standard.
12. Describe how the levels of risk and cost are consistent with management performance goals.
Continuation of the current program will provide an appropriate level of protection at an acceptable cost. The level of risk is consistent with management performance goals because management expects to use industrial solutions for industrial
issues. This is largely an industrial issue and the solution chosen is an industrial solution.
Major positive impact. [] Miner positive impact.
13. Pick the basic implementing assumption from the list. ☐ Major positive impact ☐ Minor negative impact ☐ Minor positive impact ☐ Major negative impact
■ No net impact
14. Describe the nature and status of implementation including cost affectiveness
14. Describe the nature and status of implementation including cost-effectiveness. Compliance with above cited laws and regulations requires that the current program be continued. Applicable regulations
are implemented by Fermilab ES&H Manual Chapter 8021 (Regulated Chemical Waste Disposal), and HWSF Procedures
Manual. When the above standards are approved in the N&S process, internal implementation programs will be modified to be consistent with the standard.
So consistent with the standard.

•	Jeografa)	Issue	origin	🔀 Hazard analysis	☑ Identification Team
1.	Issue(s) Env - offsite radiation protection / penetrating				
052	. Env - onsite radiation protection/ penetrating				
	Focus group			☐ Occupational \$	
	■ Environmental Protection	ment &	Oversigh	nt Radiation Prot	ection
				•	
2.	Is there a necessary standard which applies to	this is	ssue?		YES X NO
			lf	yes, continue; o	otherwise skip to 6.
3.	Necessary standard(s)				
	•				
					
	And there are considered there were considered	dad(a)		do mot odd water	• -
4.	Are there any aspects of these necessary stand	ara(s)			
			,	i yes, continue;	otherwise skip to 6.
_	Description of non-value added concern of no			laud(a)	
5.	Description of non-value added aspects of ne	cessary	y stand	ara(s).	
		•			
	,				
6.	Is the level of risk associated with the issue(s) consi	istent w	vith management	
	formance goals assuming compliance with app				YES NO
					therwise skip to 12.
					emp ie iei
_	In these a way was find and a dead of the	II		da lasces	
7.	Is there a non-required external standard which	аррие			YES NO
			IT	yes, continue; of	therwise skip to 10.

8. External sufficient standard citation	
DOE Order 5400.5 Derived Concentration Guide Table and dose limits to the public (Chapter 2, sec	tion 1; Chapter 3)
•	
9. Is the level of risk associated with the issue(s) consistent with	X YES NO
management performance goals assuming compliance with the above (non-statutory) external standard?	
(non-statutory) external standard.	otherwise skip to 12.
10. Is an internal standard required to attain a level of risk consistent with management performance goals?	YES NO
management performance goals:	
11. Describe nature and status of internal sufficient standard.	
12. Describe how the levels of risk and cost are consistent with management	nerformance goals
Continuation of the current program will provide an appropriate level of protection at an acceptable	
	,
13. Pick the basic implementing assumption from the list. Major positive impact	☐ Minor negative impact
☐ Minor positive impact	☐ Major negative impact
No net impact ■	
44 Beauth the nature and the filteria	
14. Describe the nature and status of implementation including cost-effectives. When the above standard is approved in the N&S process, internal implementation programs will be	
when the above standard is approved in the N&S process, internal implementation programs will be consistent with the standard.	modified to be
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Issue (s) Issu											ls	sue	orio	ıin	Б	И На	zard	analys	sis	□ Ide	entifi	cation	Team
Focus group	1.	Issue	(s)										0.13	,				di idiy (<u> </u>		oution	ream
Focus group	053	3. Env -	ozone de	leple	eting s	ubstar	nces								_								
2. Is there a necessary standard which applies to this issue?																							
2. Is there a necessary standard which applies to this issue?	l																						
2. Is there a necessary standard which applies to this issue?	l																						
2. Is there a necessary standard which applies to this issue?																							
2. Is there a necessary standard which applies to this issue?																							
2. Is there a necessary standard which applies to this issue?															_								
2. Is there a necessary standard which applies to this issue?		Focus	aroun	F	1 Emer	mency	Mana	demer	ı	Fire F	Protec	etion			_	П	Occur	ation	al S	afety			
2. Is there a necessary standard which applies to this issue? If yes, continue; otherwise skip to 6. If yes, continue; otherwise skip to 6. If yes, continue; otherwise skip to 6. If yes, continue; otherwise skip to 6. If yes, continue; otherwise skip to 6. If yes, continue; otherwise skip to 6. If yes, continue; otherwise skip to 6. If yes, continue; otherwise skip to 6. If yes, continue; otherwise skip to 6. If yes, continue; otherwise skip to 6. If yes, continue; otherwise skip to 6. If yes, continue; otherwise skip to 6. If yes, continue; otherwise skip to 6. If yes, continue; otherwise skip to 6. If yes, continue; otherwise skip to 6. If yes, continue; otherwise skip to 12. If yes, continue; otherwise skip to 12. If yes, continue; otherwise skip to 12. If yes, continue; otherwise skip to 12.		1 0003	group	1									Over	siał	ht								
If yes, continue; otherwise skip to 6. 3. Necessary standard(s) Clean Air Act Amendments 1990, 42 USC 7401 et seq. 40 CFR 82 E.O. 12843 4. Are there any aspects of these necessary standard(s) which do not add value? YES NO If yes, continue; otherwise skip to 6. 5. Description of non-value added aspects of necessary standard(s). 6. Is the level of risk associated with the issue(s) consistent with management performance goals assuming compliance with applicable necessary standards? If no continue; otherwise skip to 12.														9-									
If yes, continue; otherwise skip to 6. 3. Necessary standard(s) Clean Air Act Amendments 1990, 42 USC 7401 et seq. 40 CFR 82 E.O. 12843 4. Are there any aspects of these necessary standard(s) which do not add value? YES NO If yes, continue; otherwise skip to 6. 5. Description of non-value added aspects of necessary standard(s). 6. Is the level of risk associated with the issue(s) consistent with management performance goals assuming compliance with applicable necessary standards? If no continue; otherwise skip to 12.	_					• -								_									
3. Necessary standard(s) Clean Air Act Amendments 1990, 42 USC 7401 et seq. 40 CFR 82 E.O. 12843 4. Are there any aspects of these necessary standard(s) which do not add value? If yes, continue; otherwise skip to 6. 5. Description of non-value added aspects of necessary standard(s). 6. Is the level of risk associated with the issue(s) consistent with management performance goals assuming compliance with applicable necessary standards? If no continue; otherwise skip to 12. 7. Is there a non-required external standard which applies to this issue? □ YES □ NO □ YES □ NO □ YES □ NO	2.	is the	ere a ne	ece	ssary	stan	aara	wnici	n app	olies	to tn	IIS I	ssue	?							M A	ES [
Clean Air Act Amendments 1990, 42 USC 7401 et seq. 40 CFR 82 E.O. 12843 4. Are there any aspects of these necessary standard(s) which do not add value? YES NO If yes, continue; otherwise skip to 6. 5. Description of non-value added aspects of necessary standard(s). 6. Is the level of risk associated with the issue(s) consistent with management performance goals assuming compliance with applicable necessary standards? If no continue; otherwise skip to 12. 7. Is there a non-required external standard which applies to this issue?														lf	fу	yes,	cont	tinue;	; ot	herw	rise	skip	to 6.
Clean Air Act Amendments 1990, 42 USC 7401 et seq. 40 CFR 82 E.O. 12843 4. Are there any aspects of these necessary standard(s) which do not add value? YES NO If yes, continue; otherwise skip to 6. 5. Description of non-value added aspects of necessary standard(s). 6. Is the level of risk associated with the issue(s) consistent with management performance goals assuming compliance with applicable necessary standards? If no continue; otherwise skip to 12. 7. Is there a non-required external standard which applies to this issue?																							
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4. Are there any aspects of these necessary standard(s) which do not add value? YES NO If yes, continue; otherwise skip to 6. 5. Description of non-value added aspects of necessary standard(s). 6. Is the level of risk associated with the issue(s) consistent with management performance goals assuming compliance with applicable necessary standards? If no continue; otherwise skip to 12. 7. Is there a non-required external standard which applies to this issue?	Cle	an Air A	ct Amend	dme	nts 19	90. 42	USC	7401 e	t sea.						_								
4. Are there any aspects of these necessary standard(s) which do not add value? YES NO						,			•														
If yes, continue; otherwise skip to 6. 5. Description of non-value added aspects of necessary standard(s). 6. Is the level of risk associated with the issue(s) consistent with management performance goals assuming compliance with applicable necessary standards? If no continue; otherwise skip to 12.	E.C). 12843	}																				
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If yes, continue; otherwise skip to 6. 5. Description of non-value added aspects of necessary standard(s). 6. Is the level of risk associated with the issue(s) consistent with management performance goals assuming compliance with applicable necessary standards? If no continue; otherwise skip to 12.																							[
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If yes, continue; otherwise skip to 6. 5. Description of non-value added aspects of necessary standard(s). 6. Is the level of risk associated with the issue(s) consistent with management performance goals assuming compliance with applicable necessary standards? If no continue; otherwise skip to 12.																							
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If yes, continue; otherwise skip to 6. 5. Description of non-value added aspects of necessary standard(s). 6. Is the level of risk associated with the issue(s) consistent with management performance goals assuming compliance with applicable necessary standards? If no continue; otherwise skip to 12.																							l
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If yes, continue; otherwise skip to 6. 5. Description of non-value added aspects of necessary standard(s). 6. Is the level of risk associated with the issue(s) consistent with management performance goals assuming compliance with applicable necessary standards? If no continue; otherwise skip to 12.																							
If yes, continue; otherwise skip to 6. 5. Description of non-value added aspects of necessary standard(s). 6. Is the level of risk associated with the issue(s) consistent with management performance goals assuming compliance with applicable necessary standards? If no continue; otherwise skip to 12.																							
If yes, continue; otherwise skip to 6. 5. Description of non-value added aspects of necessary standard(s). 6. Is the level of risk associated with the issue(s) consistent with management performance goals assuming compliance with applicable necessary standards? If no continue; otherwise skip to 12.																							
If yes, continue; otherwise skip to 6. 5. Description of non-value added aspects of necessary standard(s). 6. Is the level of risk associated with the issue(s) consistent with management performance goals assuming compliance with applicable necessary standards? If no continue; otherwise skip to 12.	1	Are ti	here an	1V S	sneci	te of	thesi	e nec	455A1	rv eta	andar	'd(e)	whi	ch	d	lo ne	nt ac	id va	alue	2		YES	NO.
5. Description of non-value added aspects of necessary standard(s). 6. Is the level of risk associated with the issue(s) consistent with management performance goals assuming compliance with applicable necessary standards? If no continue; otherwise skip to 12. 7. Is there a non-required external standard which applies to this issue?	т.	AIC II	icic aii	٠, ٠	aopeo.	.5 0.	11100		coou.	, 0	anau.	u (0)	*****										
6. Is the level of risk associated with the issue(s) consistent with management performance goals assuming compliance with applicable necessary standards? If no continue; otherwise skip to 12. 7. Is there a non-required external standard which applies to this issue?														•	"	yes,	COI	itiiiue	5 , 0	, tile i v	W19C	2KIÞ	10 6.
6. Is the level of risk associated with the issue(s) consistent with management performance goals assuming compliance with applicable necessary standards? If no continue; otherwise skip to 12. 7. Is there a non-required external standard which applies to this issue?		_		_		_		_	_	_													
performance goals assuming compliance with applicable necessary standards? If no continue; otherwise skip to 12. 7. Is there a non-required external standard which applies to this issue?	5.	Desci	ription (of	non-v	/alue	adde	d as	pects	of	neces	ssar	y sta	and	da	rd(s)) <u>. </u>						
performance goals assuming compliance with applicable necessary standards? If no continue; otherwise skip to 12. 7. Is there a non-required external standard which applies to this issue?	Г																						
performance goals assuming compliance with applicable necessary standards? If no continue; otherwise skip to 12. 7. Is there a non-required external standard which applies to this issue?			•																				1
performance goals assuming compliance with applicable necessary standards? If no continue; otherwise skip to 12. 7. Is there a non-required external standard which applies to this issue?																							
performance goals assuming compliance with applicable necessary standards? If no continue; otherwise skip to 12. 7. Is there a non-required external standard which applies to this issue?																							
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performance goals assuming compliance with applicable necessary standards? If no continue; otherwise skip to 12. 7. Is there a non-required external standard which applies to this issue?	Ì									•													
performance goals assuming compliance with applicable necessary standards? If no continue; otherwise skip to 12. 7. Is there a non-required external standard which applies to this issue?																							
performance goals assuming compliance with applicable necessary standards? If no continue; otherwise skip to 12. 7. Is there a non-required external standard which applies to this issue?	L														_								
performance goals assuming compliance with applicable necessary standards? If no continue; otherwise skip to 12. 7. Is there a non-required external standard which applies to this issue?																							
performance goals assuming compliance with applicable necessary standards? If no continue; otherwise skip to 12. 7. Is there a non-required external standard which applies to this issue?	_	ملاحدا		- F	uic!-		ia+		.	ia	./a\ =	· '	1a1 a		2.	1b ~							
If no continue; otherwise skip to 12. 7. Is there a non-required external standard which applies to this issue?																					⊠ Y	ES [NO
7. Is there a non-required external standard which applies to this issue?	he		ice goa	413	ผอธน	mmy	COM	Pilalic	,∈ WI	irii di	ppiici	avit	1100			-							
															IŤ	no	con	τınue	; 01	inerw	/ISE	skip	to 12
	7.	is the	ere a no	on-	reguir	ed ex	xterna	al sta	ndarc	d whi	ch a	pplie	es to) th	his	s iss	sue?					/ES I	NO.
	-				•		-						-					inue:	ot	herw			

8. External sufficient standard citation		
9. Is the level of risk associated with the issue(s) consistent v		YES NO
management performance goals assuming compliance with the (non-statutory) external standard?	above If no continue; oth	nerwise skin to 12
	n no continue, ou	ierwise skip to 12
10. Is an internal standard required to attain a level of risk con	nsistent with	
management performance goals?		YES NO
11. Describe nature and status of internal sufficient standard.		
		·
12. Describe how the levels of risk and cost are consistent wi		
Continuation of the current program will provide an appropriate level of protection consistent with management performance goals because management expects		
issues. This is an industrial issue and the solution chosen is an industrial solut		
		· •
	<u> </u>	
13. Pick the basic implementing assumption from the list.	ior positive impact	Minor negative impact
Li Mir	nor positive impact 🔲	Major negative impact
No.	net impact	
14. Describe the nature and status of implementation including	ng cost-effectivenes	is.
In the opinion of the invloved subject-matter experts, this program is both successions.		
		1

-	logue/o)			Issue	origin	Hazard analys	is 🔲 ld	entification Team
1.	Issue(s)							
054	4. Env - PCBs							
							4	
		·						
	Focus group			☐ Fire Protection ☐ Management 8		☐ Occupationa ht ☐ Radiation Pr		
2.	is there a n	ecessarv stand	lard which	applies to this	issue?			X YES NO
						yes, continue;	otherw	
3.	Necessary	standard(s)						
40 40	CA, 15 USC 260 CFR 268 CFR 302 CFR 761	1 et seq.						
29	CFR 1910.1000 CFR Part B permit							
35	IAC 728 IAC 808-809							
	IAC 909-909							
								,
L		<u> </u>						<u></u>
4.	Are there ar	y aspects of	these neces	sary standard(s		do not add val		YES NO
					<i>;</i>	n yes, continue	other	wise skip to 6.
5.	Description	of non-value	added aspe	cts of necessa	ry stand	dard(s).		
6. pe						with managemen sary standards?		YES NO
•		•	-					vise skip to 12.
7.	is there a n	on-required ex	ternal stand	ard which appl	ies to ti	his issue?		YES NO
•	.5 u 11		-Jar Juliu	appi		yes, continue;	otherw	

8. External sufficient standard citation		
9. Is the level of risk associated with the issue(s) consistent with		YES NO
management performance goals assuming compliance with the abo		<u> </u>
(non-statutory) external standard?	no continue; o	therwise skip to 12
10. Is an internal standard required to attain a level of risk consist management performance goals?	stent with	YES NO
management performance goals:		
11. Describe nature and status of internal sufficient standard.		
12. Describe how the levels of risk and cost are consistent with	management pe	erformance goals.
Continuation of the current program will provide an appropriate level of protection a		
the indicated statutes and regulations, supplemented by internal implementation puris protected from legal vulnerability and dangers to personnel and the physics prog		
management performance goals because management expects to use industrial s		
industrial issue and the solution chosen is an industrial solution.	-	
		·
·		
13. Pick the basic implementing assumption from the list. Major i	oositive impact	Minor negative impact
☐ Minor ☑ No net	oositive impact	Major negative impact
No net	тираст	
14. Describe the nature and status of implementation including	cost-effectivene	ess.
Maintain current program, revise and update ES&H Manual chapters. Part of the ES	&H Manual chapt	er 8021 or a Fermilab
PCB policy should state that exempt quantities of PCBs (e.g. small ballasts, capac Waste. Lab policy should be to move toward eliminating all PCB's.	tors) will be mana	iged as Illinois Special
Treaste. Lab policy should be to move toward eliminating all POB's.		
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1.		origin	Hazard analysis	Identification Team
	56. Env - regulated chemical waste / non-hazardous			
İ				İ
1	e ·			
	Focus group		☐ Occupational S	Safety
	⊠ Environmental Protection	Oversig		
2.	. Is there a necessary standard which applies to this is			YES NO
		If	f yes, continue; o	therwise skip to 6.
3.	. Necessary standard(s)			
	0 CFR 259			
	5 IAC 807- 810			
	5 IAC 700 Subpart F .O. 12580			
	.O. 12856			
E.O.	.O. 12873			
·				
4.	. Are there any aspects of these necessary standard(s)	which	do not add value	P? ☐ YES NO
	(,			otherwise skip to 6.
5.	. Description of non-value added aspects of necessary	stan	dard(s).	
}				
Ì				
				•
6.				X YES NO
per	erformance goals assuming compliance with applicable	neces		otherwise skip to 12.
			no commue, t	And mide anip to 12.
7.	. Is there a non-required external standard which applies	s to t	his issue?	YES NO
				therwise skip to 10.

8. External sufficient standard citation		
		·
9. Is the level of risk associated with the issue(s) consistent management performance goals assuming compliance with the		☐ YES ☐ NO
(non-statutory) external standard?	If no continue;	otherwise skip to 12
10. Is an internal standard required to attain a level of risk comanagement performance goals?	onsistent with	YES NO
11. Describe nature and status of internal sufficient standard		
40. Describe how the levels of risk and seet are consistent w	ith management r	outoumonoo soolo
12. Describe how the levels of risk and cost are consistent w Continuation of the current program will provide an appropriate level of protect consistent with management performance goals because management expect issues. This is an industrial issue and the solution chosen is an industrial solu-	ion at an acceptable o	cost. The level of risk is
		1
	inor positive impact	Minor negative impact Major negative impact
⊠ No	o net impact	
14 Describe the nature and status of implementation include	ing poet affectives	2000
14. Describe the nature and status of implementation include Current program includes ES&H Manual chapter 8021, which will be revised an		
that this program is both successful and cost-effective.	•	
		1

1.	Issue(s)	Issue	origin	Hazard analysis	☐ Identification Team
	B. Env - sanitary and sewer discharges				
Jusc	5. Env - Sanitary and Sewer discharges				
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1					
				·	
	Focus group	e Protection		☐ Occupational S	Safety
	☑ Environmental Protection ☐ Ma		Oversigh		
2.	Is there a necessary standard which applies	e to this is	eeua?		YES NO
۷.	to there a hecessary standard which applies	3 10 1113 1			
			IT	yes, continue; o	therwise skip to 6.
3.	Necessary standard(s)				
	ean Water Act, 33 USC 1251 et seq.				
	CFR 116-117				
	CFR 121-125 (exc. 123) IAC Subtitle C and pre-treatment permits pursuant				Ì
	tavia Code of Regulations, City Ordinance, Section 8-3-	-10-3			
	y Code of Warrenville, IL Title 7, Chapter 4				
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		•			
1					
4	Ave there any concets of those personny	standard(a)		do not odd volu	2 FIVE MINO
4.	Are there any aspects of these necessary s	standard(s)			
			1	r yes, continue;	otherwise skip to 6.
5.	Description of non-value added aspects of	f necessar	y stand	lard(s).	
					•
	•				
6.	Is the level of risk associated with the iss	ue(s) cons	istent v	vith management	
	rformance goals assuming compliance with				☐ YES 🔀 NO
F-0.	game accompanies with	1-1		-	otherwise skip to 12.
				n no continue, c	miciwise skip to 12.
					=
7.	Is there a non-required external standard w	hich applie	es to th	nis issue?	X YES NO
			lf	yes, continue; o	therwise skip to 10.

Out to 184. Used for the Enginetic of Motor and Westernston 40th Ed. ADUA /4000	
Standard Methods for the Examination of Water and Wastewater, 18th Ed., APHA (1992)	
DOE 5400.5 (Chapter 2, Section 3)	j
O to the level of rick appointed with the inque(a) consistent with	
9. Is the level of risk associated with the issue(s) consistent with management performance goals assuming compliance with the above	X YES INO
()	
(non-statutory) external standard:	herwise skip to 12.
•	
10. Is an internal standard required to attain a level of risk consistent with	
management performance goals?	☐ YES ☐ NO
management performance gover.	
11. Describe nature and status of internal sufficient standard.	
	}
	j
	,
12. Describe how the levels of risk and cost are consistent with management pe	
Continuation of the current program of adherence to the indicated laws and regulations will be supplen	
monitoring sewer effluent constituents and flow at the site boundaries. This combination will ensure the	
the site are within all appropriate limits. The level of risk is consistent with management performance	
manaegement expects to use industrial solutions for industrial issues. This is an industrial issue and	
an industrial solution. The additional standard indicated in #8, above, is necessary as a reference for	industry-wide practice
in this area. It contains no "requirements" other than adherence to standard practices.	4
1	i i
<u> </u>	
	Minara
13. Pick the basic implementing assumption from the list. ☐ Major positive impact ☐ Minor positive impact ☐	Minor negative impact
☐ Minor positive impact ☐	Minor negative impact Major negative impact
13. Pick the basic implementing assumption from the list. ☐ Major positive impact ☐ ☐ Minor positive impact ☐ ☑ No net impact	Minor negative impact Major negative impact
☐ Minor positive impact ☐ Mo net impact	Major negative impact
☐ Minor positive impact ☐	Major negative impact
☐ Minor positive impact ☐ Mo net impact	Major negative impact
Minor positive impact ☐ No net impact 14. Describe the nature and status of implementation including cost-effectivene	Major negative impact
Minor positive impact ☐ No net impact 14. Describe the nature and status of implementation including cost-effectivene	Major negative impact
Minor positive impact ☐ No net impact 14. Describe the nature and status of implementation including cost-effectivene	Major negative impact
Minor positive impact ☐ No net impact 14. Describe the nature and status of implementation including cost-effectivene	Major negative impact

1. Issue(s)	Issu	e origin	✓ Hazard analysis	☐ Identification Team
059. Env - solid waste management (units and inactive waste sites			
-				,
				·
	anagement		☐ Occupational S	
	Protection Management	& Oversig	ht 🔲 Radiation Prote	ection
	•			
2. Is there a necessary standa	rd which applies to this	issue?		YES NO
•	• •		. vee continue o	therwise skip to 6.
		•	yes, continue, o	the wise skip to o.
3. Necessary standard(s)				
RCRA, 42 USC 6901 et seq. RCRA Part B permit				
35 IAC 620				
35 IAC 724				
35 IAC 815				
CERCLA/SARA 42 USC 6901 et seq.				
40 CFR 300				
40 CFR 302				
40 CFR 355				
40 CFR 370				
40 CFR 372				
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<u> </u>				
4. Are there any aspects of th	ese necessary standard(s) which	do not add value	? YES X NO
			If yes, continue; (otherwise skip to 6.
5. Description of non-value a	dded aspects of necess	ary stand	dard(s).	
				1
				}
6. Is the level of risk association	ted with the issue(s) co	nsistent '	with management	MVEC FINA
performance goals assuming c	ompliance with applicab	le neces	sary standards?	YES NO
			If no continue; o	therwise skip to 12.
			,	•
7. Is there a non-required exte	ernal standard which app			☐ YES ☐ NO
		lf	yes, continue; o	therwise skip to 10.

8. External sufficient standard citation		
9. Is the level of risk associated with the issue(s) consistent w management performance goals assuming compliance with the a		YES NO
(The first of the second of t	If no continue; otherw	ise skip to 12
10. Is an internal standard required to attain a level of risk conmanagement performance goals?	sistent with	YES NO
11. Describe nature and status of internal sufficient standard.		
12. Describe how the levels of risk and cost are consistent wit	h management nerform	ance doale
Continuation of the current program will ensure compliance with applicable RCRA		
requirements. The current program also ensures that existing and future SWMI		
and remediated if necessary through our program supervised by the Illinois EPA management performance goals because management expects to use industria		
industrial issue and the solution chosen is an industrial solution.		
		r
	or positive impact □ Mino or positive impact □ Majo net impact	r negative impact r negative impact
14. Describe the nature and status of implementation includin	g cost-effectiveness.	
All implementation will be completed in conjunction with Illinois EPA officials. In experts, this program is both successful and cost-effective.	the opinion of the involved	subject-matter

40 CFR 401 - 403 33 CFR 320 - 323 33 CFR 320 - 323 33 CFR 320 - 330. 35 IAC Subtitle C 92 IAC 700 and all permits pursuant 92 IAC 704 and all permits pursuant 92 IAC 708 and all permits pursuant E.O. 10988 E.O. 10980 10 CFR 1022 4. Are there any aspects of these necessary standard(s) which do not add value? YES NO If yes, continue; otherwise skip to 6. 5. Description of non-value added aspects of necessary standard(s).			,		•
Focus group	1. Issue(s)	Issue	origin	Hazard analysis	s 🔲 Identification Team
Focus group					
2. Is there a necessary standard which applies to this issue?	ood. Env bandos maio.				İ
2. Is there a necessary standard which applies to this issue?		•			
2. Is there a necessary standard which applies to this issue?					
2. Is there a necessary standard which applies to this issue?					
2. Is there a necessary standard which applies to this issue?					,
2. Is there a necessary standard which applies to this issue?			···		
2. Is there a necessary standard which applies to this issue?	Focus group	Protection		☐ Occupational	Safety
If yes, continue; otherwise skip to 6. 3. Necessary standard(s) Clean Water Act, 33 USC 1251 et seq. 40 CFR 110 -125 (exc. 123) 40 CFR 136 40 CFR 230 40 CFR 136 40 CFR 230 40 CFR 320 -323 33 CFR 329 -320 33 CFR 329 -330 35 IAC Subtitle C 92 IAC 700 and all permits pursuant 92 IAC 704 and all permits pursuant 92 IAC 704 and all permits pursuant 92 IAC 708 and all permits pursuant 92 IAC 708 and all permits pursuant 92 IAC 708 can all permits pursuant 92 IAC 708 can all permits pursuant 92 IAC 708 can all permits pursuant 92 IAC 708 can all permits pursuant 92 IAC 708 can all permits pursuant 92 IAC 708 can all permits pursuant 92 IAC 708 can all permits pursuant 93 IAC Subtitle C 94 IAC 708 can all permits pursuant 94 IAC 708 can all permits pursuant 95 IAC 908 can all permits pursuant 96 IAC 908 can all permits pursuant 97 IAC 908 can all permits pursuant 96 IAC 908 can all permits pursuant 97 IAC 908 can all permits pursuant 98 IAC 908 can all permits pursuant 99 IAC 908 can all permits pursuant 90 IAC 908 can all permi			Oversigh		
If yes, continue; otherwise skip to 6. 3. Necessary standard(s) Clean Water Act, 33 USC 1251 et seq. 40 CFR 110 -125 (exc. 123) 40 CFR 136 40 CFR 230 40 CFR 136 40 CFR 230 40 CFR 320 -323 33 CFR 329 -320 33 CFR 329 -330 35 IAC Subtitle C 92 IAC 700 and all permits pursuant 92 IAC 704 and all permits pursuant 92 IAC 704 and all permits pursuant 92 IAC 708 and all permits pursuant 92 IAC 708 and all permits pursuant 92 IAC 708 can all permits pursuant 92 IAC 708 can all permits pursuant 92 IAC 708 can all permits pursuant 92 IAC 708 can all permits pursuant 92 IAC 708 can all permits pursuant 92 IAC 708 can all permits pursuant 92 IAC 708 can all permits pursuant 93 IAC Subtitle C 94 IAC 708 can all permits pursuant 94 IAC 708 can all permits pursuant 95 IAC 908 can all permits pursuant 96 IAC 908 can all permits pursuant 97 IAC 908 can all permits pursuant 96 IAC 908 can all permits pursuant 97 IAC 908 can all permits pursuant 98 IAC 908 can all permits pursuant 99 IAC 908 can all permits pursuant 90 IAC 908 can all permi					
If yes, continue; otherwise skip to 6. 3. Necessary standard(s) Clean Water Act, 33 USC 1251 et seq. 40 CFR 110 -125 (exc. 123) 40 CFR 136 40 CFR 230 40 CFR 136 40 CFR 230 40 CFR 320 -323 33 CFR 329 -320 33 CFR 329 -330 35 IAC Subtitle C 92 IAC 700 and all permits pursuant 92 IAC 704 and all permits pursuant 92 IAC 704 and all permits pursuant 92 IAC 708 and all permits pursuant 92 IAC 708 and all permits pursuant 92 IAC 708 can all permits pursuant 92 IAC 708 can all permits pursuant 92 IAC 708 can all permits pursuant 92 IAC 708 can all permits pursuant 92 IAC 708 can all permits pursuant 92 IAC 708 can all permits pursuant 92 IAC 708 can all permits pursuant 93 IAC Subtitle C 94 IAC 708 can all permits pursuant 94 IAC 708 can all permits pursuant 95 IAC 908 can all permits pursuant 96 IAC 908 can all permits pursuant 97 IAC 908 can all permits pursuant 96 IAC 908 can all permits pursuant 97 IAC 908 can all permits pursuant 98 IAC 908 can all permits pursuant 99 IAC 908 can all permits pursuant 90 IAC 908 can all permi	2. Is there a necessary standard which applies	s to this is	ssue?		X YES I NO
3. Necessary standard(s) Clean Water Act, 33 USC 1251 et seq. 40 CFR 110 - 125 (exc. 123) 40 CFR 136 40 CFR 136 40 CFR 230 40 CFR 230 40 CFR 320 - 323 33 CFR 328 - 330. 33 CFR 328 - 330. 35 IAC Subtitle C 29 IAC 700 and all permits pursuant 29 IAC 708 and all permits pursuant 29 IAC 708 and all permits pursuant 20 IAC 708 and all permits pursuant 20 IAC 708 and all permits pursuant 50 C 10990 10 CFR 1022 4. Are there any aspects of these necessary standard(s) which do not add value? If yes, continue; otherwise skip to 6. 5. Description of non-value added aspects of necessary standard(s). 6. Is the level of risk associated with the issue(s) consistent with management performance goals assuming compliance with applicable necessary standards? If no continue; otherwise skip to 12. 7. Is there a non-required external standard which applies to this issue?				voo continuo	
Clean Water Act, 33 USC 1251 et seq. 40 CFR 110 - 125 (exc. 129) 40 CFR 136 40 CFR 136 40 CFR 136 40 CFR 230 40 CFR 230 40 CFR 320 - 323 33 CFR 320 - 323 33 CFR 320 - 323 33 CFR 320 - 323 35 CFR 320 - 323 35 IAC Subtitle C 92 IAC 700 and all permits pursuant 92 IAC 708 and all permits pursuant 92 IAC 708 and all permits pursuant 92 IAC 708 and all permits pursuant 92 IAC 708 and all permits pursuant 92 IAC 708 and all permits pursuant 95 IAC 708 and all permits pursuant 95 IAC 708 and all permits pursuant 95 IAC 708 and all permits pursuant 95 IAC 708 and all permits pursuant 95 IAC 708 and all permits pursuant 95 IAC 708 and all permits pursuant 95 IAC 708 and all permits pursuant 95 IAC 708 and all permits pursuant 95 IAC 708 and all permits pursuant 95 IAC 708 and all permits pursuant 95 IAC 708 and all permits pursuant 95 IAC 708 and all permits pursuant 96 IAC 708 and all permits pursuant 97 IAC 708 and all permits pursuant 97 IAC 708 and all permits pursuant 98 IAC 708 and all permits pursuant 99 IAC 708 and all permits pursuant 90 IAC 708 and all perm			IT	yes, continue;	otherwise skip to 6.
Clean Water Act, 33 USC 1251 et seq. 40 CFR 110 - 125 (exc. 129) 40 CFR 136 40 CFR 136 40 CFR 136 40 CFR 230 40 CFR 230 40 CFR 320 - 323 33 CFR 320 - 323 33 CFR 320 - 323 33 CFR 320 - 323 35 CFR 320 - 323 35 IAC Subtitle C 92 IAC 700 and all permits pursuant 92 IAC 708 and all permits pursuant 92 IAC 708 and all permits pursuant 92 IAC 708 and all permits pursuant 92 IAC 708 and all permits pursuant 92 IAC 708 and all permits pursuant 95 IAC 708 and all permits pursuant 95 IAC 708 and all permits pursuant 95 IAC 708 and all permits pursuant 95 IAC 708 and all permits pursuant 95 IAC 708 and all permits pursuant 95 IAC 708 and all permits pursuant 95 IAC 708 and all permits pursuant 95 IAC 708 and all permits pursuant 95 IAC 708 and all permits pursuant 95 IAC 708 and all permits pursuant 95 IAC 708 and all permits pursuant 95 IAC 708 and all permits pursuant 96 IAC 708 and all permits pursuant 97 IAC 708 and all permits pursuant 97 IAC 708 and all permits pursuant 98 IAC 708 and all permits pursuant 99 IAC 708 and all permits pursuant 90 IAC 708 and all perm	2 Nacaccary standard(s)				
40 CFR 130 -125 (exc. 123) 40 CFR 131 40 CFR 136 40 CFR 230 40 CFR 230 40 CFR 320 -323 33 CFR 320 -323 33 CFR 320 -323 33 CFR 320 -323 33 CFR 320 -323 31 LO Subtific C 92 IAC 700 and all permits pursuant 92 IAC 704 and all permits pursuant 92 IAC 708 and all permits pursuant 92 IAC 708 and all permits pursuant 92 IAC 708 and all permits pursuant 92 IAC 708 and all permits pursuant 93 IAC subtific C 95 IAC 708 and all permits pursuant 95 IAC 90 IAC 708 and all permits pursuant 96 IAC 708 and all permits pursuant 97 IAC 708 and all permits pursuant 98 IAC 708 and all permits pursuant 99 IAC 708 and all permits pursuant 99 IAC 708 and all permits pursuant 90 IAC 708 and all permits pursuant 90 IAC 708 and all permits pursuant 90 IAC 708 and all permits pursuant 90 IAC 708 and all permits pursuant 90 IAC 708 and all permits pursuant 90 IAC 708 and all permits pursuant 90 IAC 708 and all permits pursuant 90 IAC 708 and all permits pursuant 91 IAC 708 IAC 70					
40 CFR 136 40 CFR 401 - 403 33 CFR 328 - 330 33 CFR 328 - 330 33 IAC Subtitle C 22 IAC 700 and all permits pursuant 92 IAC 704 and all permits pursuant 92 IAC 704 and all permits pursuant 92 IAC 708 and all permits pursuant 92 IAC 708 and all permits pursuant 92 IAC 708 and all permits pursuant 92 IAC 708 and all permits pursuant 92 IAC 708 and all permits pursuant 92 IAC 708 and all permits pursuant 95 IAC 708 and all permits pursuant 95 IAC 708 and all permits pursuant 96 IN SERIES INO 10 CFR 1022 4. Are there any aspects of these necessary standard(s) which do not add value? YES INO 16 If yes, continue; otherwise skip to 6. 5. Description of non-value added aspects of necessary standard(s).	Clean Water Act, 33 USC 1251 et seq.				
40 CFR 320 40 CFR 320 40 CFR 320 40 CFR 320 1- 403 33 CFR 328 - 330. 33 CFR 328 - 330. 35 IAC Subtitie C 92 IAC 700 and all permits pursuant 92 IAC 704 and all permits pursuant 92 IAC 708 and all permits pursuant 92 IAC 708 and all permits pursuant 100 CFR 1022 4. Are there any aspects of these necessary standard(s) which do not add value? YES NO If yes, continue; otherwise skip to 6. 5. Description of non-value added aspects of necessary standard(s).	40 CFR 110 - 125 (exc. 125)				
40 CFR 401 - 403 33 CFR 320 - 323 33 CFR 328 - 330. 35 IAC Subtitle C 92 IAC 700 and all permits pursuant 92 IAC 704 and all permits pursuant 92 IAC 708 and all permits pursuant E.O. 10988 E.O. 10990 10 CFR 1022 4. Are there any aspects of these necessary standard(s) which do not add value? YES NO If yes, continue; otherwise skip to 6. 5. Description of non-value added aspects of necessary standard(s).					
33 CFR 320 - 323 33 CFR 328 - 330. 33 CFR 328 - 330. 35 IAC Subtitle C 92 IAC 700 and all permits pursuant 92 IAC 704 and all permits pursuant 92 IAC 704 and all permits pursuant E.O. 10988 E.O. 10990 10 CFR 1022 4. Are there any aspects of these necessary standard(s) which do not add value? ☐ YES ▼NO If yes, continue; otherwise skip to 6. 5. Description of non-value added aspects of necessary standard(s). 6. Is the level of risk associated with the issue(s) consistent with management performance goals assuming compliance with applicable necessary standards? If no continue; otherwise skip to 12. 7. Is there a non-required external standard which applies to this issue?	40 CFR 230				
33 CFR 328 - 330. 35 IAC Subtitle C 92 IAC 700 and all permits pursuant 92 IAC 704 and all permits pursuant 92 IAC 708 and all permits pu	40 CFR 401 - 403				
35 IAC Subtitle C 92 IAC 700 and all permits pursuant 92 IAC 704 and all permits pursuant 92 IAC 704 and all permits pursuant 92 IAC 708 and all permits pursuant 192 IAC 708 and all permits pursuant 192 IAC 708 and all permits pursuant 192 IAC 708 and all permits pursuant 193 IAC 708 and all permits pursuant 194 IAC 708 and all permits pursuant 195 IAC 708 and all permits pursuant 195 IAC 708 and all permits pursuant 196 IAC 708 and all permits pursuant 197 IAC 708 and all permits pursuant 198 IAC 708 and all permits pursuant 199 IAC 708 and all permits pursu					j
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E.O. 10990 10 CFR 1022 4. Are there any aspects of these necessary standard(s) which do not add value? ☐ YES ☑ NO If yes, continue; otherwise skip to 6. 5. Description of non-value added aspects of necessary standard(s). 6. Is the level of risk associated with the issue(s) consistent with management performance goals assuming compliance with applicable necessary standards? If no continue; otherwise skip to 12. 7. Is there a non-required external standard which applies to this issue?	92 IAC 708 and all permits pursuant				1
4. Are there any aspects of these necessary standard(s) which do not add value? If yes, continue; otherwise skip to 6. 5. Description of non-value added aspects of necessary standard(s). 6. Is the level of risk associated with the issue(s) consistent with management performance goals assuming compliance with applicable necessary standards? If no continue; otherwise skip to 12. 7. Is there a non-required external standard which applies to this issue?	E.O. 10988				
4. Are there any aspects of these necessary standard(s) which do not add value? ☐ YES ☑ NO If yes, continue; otherwise skip to 6. 5. Description of non-value added aspects of necessary standard(s). 6. Is the level of risk associated with the issue(s) consistent with management performance goals assuming compliance with applicable necessary standards? If no continue; otherwise skip to 12. 7. Is there a non-required external standard which applies to this issue? ☑ YES ☑ NO	i				
If yes, continue; otherwise skip to 6. 5. Description of non-value added aspects of necessary standard(s). 6. Is the level of risk associated with the issue(s) consistent with management performance goals assuming compliance with applicable necessary standards? If no continue; otherwise skip to 12. 7. Is there a non-required external standard which applies to this issue?	10 CFR 1022				
If yes, continue; otherwise skip to 6. 5. Description of non-value added aspects of necessary standard(s). 6. Is the level of risk associated with the issue(s) consistent with management performance goals assuming compliance with applicable necessary standards? If no continue; otherwise skip to 12. 7. Is there a non-required external standard which applies to this issue?				·	
If yes, continue; otherwise skip to 6. 5. Description of non-value added aspects of necessary standard(s). 6. Is the level of risk associated with the issue(s) consistent with management performance goals assuming compliance with applicable necessary standards? If no continue; otherwise skip to 12. 7. Is there a non-required external standard which applies to this issue?					
5. Description of non-value added aspects of necessary standard(s). 6. Is the level of risk associated with the issue(s) consistent with management performance goals assuming compliance with applicable necessary standards? If no continue; otherwise skip to 12. 7. Is there a non-required external standard which applies to this issue? ☑ YES ☑ NO	4. Are there any aspects of these necessary s	tandard(s)	which	do not add valu	ue? YES 🛮 NO
6. Is the level of risk associated with the issue(s) consistent with management performance goals assuming compliance with applicable necessary standards? If no continue; otherwise skip to 12. 7. Is there a non-required external standard which applies to this issue?			ŧ	f yes, continue;	otherwise skip to 6.
6. Is the level of risk associated with the issue(s) consistent with management performance goals assuming compliance with applicable necessary standards? If no continue; otherwise skip to 12. 7. Is there a non-required external standard which applies to this issue?					
6. Is the level of risk associated with the issue(s) consistent with management performance goals assuming compliance with applicable necessary standards? If no continue; otherwise skip to 12. 7. Is there a non-required external standard which applies to this issue?	5. Description of non-value added aspects of	necessary	v stand	lard(s).	
performance goals assuming compliance with applicable necessary standards? If no continue; otherwise skip to 12. 7. Is there a non-required external standard which applies to this issue?					
performance goals assuming compliance with applicable necessary standards? If no continue; otherwise skip to 12. 7. Is there a non-required external standard which applies to this issue?					
performance goals assuming compliance with applicable necessary standards? If no continue; otherwise skip to 12. 7. Is there a non-required external standard which applies to this issue?					
performance goals assuming compliance with applicable necessary standards? If no continue; otherwise skip to 12. 7. Is there a non-required external standard which applies to this issue?					· ·
performance goals assuming compliance with applicable necessary standards? If no continue; otherwise skip to 12. 7. Is there a non-required external standard which applies to this issue?					
performance goals assuming compliance with applicable necessary standards? If no continue; otherwise skip to 12. 7. Is there a non-required external standard which applies to this issue?					
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performance goals assuming compliance with applicable necessary standards? If no continue; otherwise skip to 12. 7. Is there a non-required external standard which applies to this issue?					
performance goals assuming compliance with applicable necessary standards? If no continue; otherwise skip to 12. 7. Is there a non-required external standard which applies to this issue?					
performance goals assuming compliance with applicable necessary standards? If no continue; otherwise skip to 12. 7. Is there a non-required external standard which applies to this issue?	and the state of the second state about the state	(-)			
If no continue; otherwise skip to 12. 7. Is there a non-required external standard which applies to this issue?					
7. Is there a non-required external standard which applies to this issue? ▼ YES □ NO	performance goals assuming compliance with	applicable	HECES	_	
				ii no continue;	otherwise skip to 12.
	7. Is there a non-required external standard w	hich applie	s to th	nis issue?	X YES NO
			lf	yes, continue;	otherwise skip to 10.

8. External sufficient standard citation	
Standards and Specifications for Soil Erosion and Sediment Control, 10/87, IEPA 87	7-102
DOE Order 5400.5 (Ch. 2, sec. 1;Ch. 3)	
	i
9. Is the level of risk associated with the issue(s) consistent with	☑ YES ☐ NO
management performance goals assuming compliance with the above	/e
(non-statutory) external standard?	o continue; otherwise skip to 12
10. Is an internal standard required to attain a level of risk consist	ent with
management performance goals?	☐ YES ☐ NO
management performance goaler	
11. Describe nature and status of internal sufficient standard.	
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12. Describe how the levels of risk and cost are consistent with n	
Continuation of the current program will provide an appropriate level of protection at consistent with management performance goals because management expects to	
issues. This is an industrial issue and the solution chosen is an industrial solution.	
above, is necessary as a reference for industry-wide practice in this area. It contains	
adherence to standard practices.	
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13. Pick the basic implementing assumption from the list. Major p	ositive impact Minor negative impact
Minor p	ositive impact
■ No net i	
14. Describe the nature and status of implementation including of	ost-effectiveness
Experience has demonstrated that this program is both successful and cost-effective	
approved in the N&S process, internal implementation programs will be modified to be	
Tappierou in the Process, internal implementation programs will be mounted to t	of State of the trie State of the
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		Issue ori	igin		n
1.	Issue(s)				
06	 Env - transforn 	ner oil / non-PCB			٦
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	Focus group	☐ Emergency Management ☐ Fire Protection		☐ Occupational Safety	٦
			ersigh	nt Radiation Protection	-
_	1- 4b	standard which couling to this last.	-0		_
2.	is there a ne	ecessary standard which applies to this issue	e?	YES NO	J
			lf	yes, continue; otherwise skip to 6	i.
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3.	Necessary s	standard(s)			
				•	_
		USC 1251 et seq.			
	CFR 110				.
	CFR 112				j
	CFR 300 - 302				
	CFR 1910.106			•	
35	IAC 808 - 809				1
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4.	Are there an	y aspects of these necessary standard(s) wh	nich	do not add value? ☐ YES 🔀 NO	<u>기</u>
			II.	f yes, continue; otherwise skip to	6.
_	Description	of non-value added concets of necessary of	d	lord(o)	
5.	Description	of non-value added aspects of necessary st	tand	iaru(s).	_
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6.		of risk associated with the issue(s) consiste			٦
рe	rformance goa	ils assuming compliance with applicable ne	cess	sary standards?	
				If no continue; otherwise skip to 1	2.
				,	-
7.	Is there a no	on-required external standard which applies t	to th	nis issue? YES NO	\Box
				yes, continue; otherwise skip to 1	

8. External sufficient standard citation	
9. Is the level of risk associated with the issue(s) consistent with	YES NO
management performance goals assuming compliance with the above (non-statutory) external standard? If no continue; other	rwise skin to 12
ii iio oonanae, oale	Wide only to 12.
10. Is an internal standard required to attain a level of risk consistent with	YES NO
management performance goals?	LI 123 LI 140
11. Describe nature and status of internal sufficient standard.	
	·
	·
·	
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	<u>.</u>
12. Describe how the levels of risk and cost are consistent with management perfo	rmance goals
Continued application of the appropriate regulations and laws will ensure the protection of the environme	nt from transformer
oil spills. The level of risk is consistent with management performance goals because management exp lindustrial solutions for industrial issues. This is an industrial issue and the solution chosen is an industr	
13. Pick the basic implementing assumption from the list. ☐ Major positive impact ☐ M	inor negative impact
Minor positive impact ☐ M	ajor negative impact
☐ No net impact	
14. Describe the nature and status of implementation including cost-effectiveness	
Implementation of these standards would require that a consistent policy for secondary containment stra	ategy be adopted
for all existing and new transformers. An adequate set of procedures will utilize appropriate industry and association standards as necessary (NFPA 30, Factory Mutual 5-4/14-8,ANSI/IEEE 446).	l/or other

1.	Issue(s)	Issue	origin	Hazard analysis	☐ Identification Team
	. Fire - boiler, heating systems, and (commercial) appliand	ces		·-·	
l I	Focus group		Oversigh	☐ Occupational S	
2.	Is there a necessary standard which applies to	this is	ssue?		X YES NO
3.	Necessary standard(s)		If	yes, continue; o	therwise skip to 6.
	AC - Fire Protection				-
100 120 29 0 29 0 29 0	IAC - Fire Prevention and Safety IAC - Boiler and Pressure Vessels CFR 1910 Subpart E - Means of Egress CFR 1910 Subpart L - Fire Protection CFR 1910 Subpart S - Electrical CFR 1926 Subpart F - Fire Protection and Prevention CFR 1926 Subpart K - Electrical				
4. 5.	Are there any aspects of these necessary standard Description of non-value added aspects of ne		i	f yes, continue;	e? YES NO otherwise skip to 6
-	Description of hon value added aspects of he		, Junia		
		· .			
6. peri	Is the level of risk associated with the issue(s formance goals assuming compliance with app		necess	sary standards?	YES X NO
7.	Is there a non-required external standard which	applie			✓ YES □ NO therwise skip to 10

8. External sufficient standard citation		
BOCA National Building Code BOCA Fire Prevention Code		İ
National Fire Protection Association National Fire Codes (NFPA Standards Lis	et)	
UL Listing	,., _,	
9. Is the level of risk associated with the issue(s) consistent	with	NEW TO THE
management performance goals assuming compliance with the		XYES NO
(non-statutory) external standard?	If no continue; other	wise skip to 12
10. Is an internal standard required to attain a level of risk comanagement performance goals?	onsistent with	☐ YES ☐ NO
management performance goals:		
11. Describe nature and status of internal sufficient standard	l .	
	 	
12. Describe how the levels of risk and cost are consistent w	vith management perfor	mance goals.
This is an industrial hazard, and the minimal statutory requirements have been		
insurers. To be consistent with management performance goals, the level of	risk must be further controlle	ed by application of
building code and national fire code standards as is the case in industry.		
•		
•	•	
	laior positivo impact D Mir	or positive impact
13. Pick the basic implementing assumption from the list.	linor positive impact	ior negative impact
	o net impact	joi nogativo impaot
14. Describe the nature and status of implementation includ	ing cost-effectiveness	
There are a few known noncompliances regarding heating system clearances		s these existing
older heating systems are replaced. (As noted in the title of this issue, these		
appliances.)	appropriate appropriate and the appropriat	
		İ
		t e e e e e e e e e e e e e e e e e e e

				Issue	origin	Hazard analys	sis 🔲 Ide	entification Team
<u>1.</u>	issue(s							
063	. Fire - cig	garette	smoking					
								,
	_							
	Focus g	roup		Protection	Oversie	Occupation		
			☐ Environmental Protection ☐ Mar	iagement a	Oversig	nt Li Radiation P	rotection	
2.	is there	a ne	cessary standard which applies	to this is	ssue?		,	YES NO
					lf	yes, continue;	otherw	ise skip to 6.
3.	Necess	ary s	andard(s)					
41	AC - Fire F	rotecti	on					
100	IAC - Fire	Prever	ntion and Safety					
			t H - Hazardous Materials					
			t L - Fire Protection					
			t F - Fire Protection and Prevention			* .		
EP/	A Air Quali	ty Stas	•					
]								
								į.
ľ								
							•	
Щ.								
4.	Are the	re any	aspects of these necessary s	tandard(s)	which	do not add va	lue?	YES NO
					ı	f yes, continue	; otherw	vise skip to 6.
5.	Descrin	tion o	f non-value added aspects of	necessary	v stanc	lard(s).		
<u>. </u>	Вссопр							
ŀ								
ļ								
6.			f risk associated with the issu					YES NO
per	formance	e goal	s assuming compliance with a	applicable	neces	sary standards	?	
						If no continue	; otherw	ise skip to 12.
7	la thar-		n-required external standard wh	sich annlis	se to *!	hie ieeus?		TYES NO
7.	is there	. a 110		appile		yes, continue;	otherwi	
					11	yes, conunue,	OTHE! M	es enip io io.

8. External sufficient standard citation		
Is the level of risk associated with the issue(s) consistent management performance goals assuming compliance with the		☐ YES ☐ NO
(non-statutory) external standard?		otherwise skip to 12
	,	
10. Is an internal standard required to attain a level of risk o	onsistent with	
management performance goals?		YES NO
11. Describe nature and status of internal sufficient standar	4	
The besonde nature and status of internal sufficient standard	u.	·
12. Describe how the levels of risk and cost are consistent v	with management	performance goals.
The statutory requirements provide a level of risk that is consistent with mana		
same as that encountered in commercial or industrial environments.		
		;
13. Pick the basic implementing assumption from the list. \Box	Major positive impact	☐ Minor negative impact☐ Major negative impact
	lo net impact	☐ Major negative impact
14. Describe the nature and status of implementation include	ling cost-effective	ness.
Experience has demonstrated that this program is both successful and cost	-effective.	
		·

	_	Issue origin 🛮 Hazard analysis 🔲 Identification Team
1.	Issue(s)	
064	Fire - electrica	al Control of the Con
l		
	a.	
L		
	Focus group	☐ Emergency Management ☑ Fire Protection ☐ Occupational Safety
		☐ Environmental Protection ☐ Management & Oversight ☐ Radiation Protection
		_
2.	Is there a n	ecessary standard which applies to this issue?
		If yes, continue; otherwise skip to 6.
3.	Necessary	standard(s)
41	IAC - Fire Protect	tion
		ention and Safety
		art E - Means of Egress
		art H - Hazardous Materials;
		art L - Fire Protection
	CFR 1910 Subpa	
		art F - Fire Protection and Prevention
29	CFR 1926 Subpa	Art N - Electrical
i		
1		
l		
4.	Are there ar	ny aspects of these necessary standard(s) which do not add value?
т.	Ale there ar	If yes, continue; otherwise skip to 6.
		n yes, continue, otherwise skip to 0.
_		of the state of th
<u>5.</u>	Description	of non-value added aspects of necessary standard(s).
6.	is the level	of risk associated with the issue(s) consistent with management
		als assuming compliance with applicable necessary standards?
•-		If no continue; otherwise skip to 12.
		ii no continue, ethermise skip to 12.
7.	Is there a n	on-required external standard which applies to this issue? ▼YES □ NO
		If yes, continue; otherwise skip to 10.

8. External sufficient standard citation	
BOCA National Building Code BOCA Fire Prevention Code	
National Fire Protection Association National Fire Codes (NFPA Standards List)	,
UL Listing	
9. Is the level of risk associated with the issue(s) consistent with	☐ YES 🗷 NO
management performance goals assuming compliance with the above	
(non-statutory) external standard?	o continue; otherwise skip to 1
10. Is an internal standard required to attain a level of risk consiste	ent with
management performance goals?	▼YES □ NO
11. Describe nature and status of internal sufficient standard.	
Fermilab ES&H Manual Chapters 5043, Management and use of cable tray systems,	and 5046, Low-Voltage, High-Current
Power Distribution Systems.	
These standards require proper installation of cable trays used for electrical conduct current carrying conductors in high-current, low-voltage power distribution systems.	
integrated into management and oversight practices.	mey have been fully implemented and
integrated into management and oversight practices.	
40. Describe how the levels of viels and seek are consistent with m	
12. Describe how the levels of risk and cost are consistent with m. The level of risk is consistent with management performance goals because municipal.	
selected for the standard residential/commercial/industrial electrical equipment, and	
for the unique electrical equipment not found elsewhere. Insurers and municipalities	
requirements were insufficient and that the building code and national fire code stand	•
achieve adequate protection.	•
13. Pick the basic implementing assumption from the list. Major po	ositive impact Minor negative impact
Minor po	sitive impact Major negative impact
□ No net in	
· · · · · · · · · · · · · · · · · · ·	
14. Describe the nature and status of implementation including co	ost-effectiveness.
Experience has demonstrated that this program is both successful and cost-effective	
Building Code will require changes to construction and contract documents.	

Issue origin ☑ Hazard analysis ☐ Identification Team
1. Issue(s)
065. Fire - flammable liquids and gases
Focus group ☐ Emergency Management ☑ Fire Protection ☐ Occupational Safety ☐ Environmental Protection ☐ Management & Oversight ☐ Radiation Protection
2. Is there a necessary standard which applies to this issue?
If yes, continue; otherwise skip to 6.
3. Necessary standard(s)
41 IAC - Fire Protection 100 IAC - Fire Prevention and Safety; 160 IAC - Storage, Transportation, Sale and Use of Gasoline and Volatrile Oils: Rules Relating to General Storage 170 IAC - Storage, Transportation, Sale and Use of Petroleum and Other Regulated Substances 180 IAC - Storage Transportation, Sale and Use of Volatile Oils 29 IAC - Emergency Services, Disasters, and Civil Defense, Chapter I: Emergency Services and Disaster Agency, Subchapter f: Chemical Safety IL Public Act 84-852, Illinois Chemical Safety Act 29 CFR 1910 Subpart E - Means of Egress 29 CFR 1910 Subpart H - Hazardous Materials 29 CFR 1910 Subpart L - Fire Protection 29 CFR 1910 Subpart S - Electrical 29 CFR 1926 Subpart F - Fire Protection and Prevention 29 CFR 1926 Subpart K - Electrical
4. Are there any aspects of these necessary standard(s) which do not add value? ☐ YES ☒ NO If yes, continue; otherwise skip to 6.
5. Description of non-value added aspects of necessary standard(s).
6. Is the level of risk associated with the issue(s) consistent with management performance goals assuming compliance with applicable necessary standards? If no continue; otherwise skip to 12.
7. Is there a non-required external standard which applies to this issue? If yes, continue; otherwise skip to 10.

8. External sufficient standard citation	
BOCA National Building Code	
BOCA Fire Prevention Code	
National Fire Protection Association National Fire Codes (NFPA Standards List) UL Listing	
OL LISTING	
MATERIAL CONTRACTOR CO	
9. Is the level of risk associated with the issue(s) consistent with	
management performance goals assuming compliance with the about	ove
(non-statutory) external standard?	no continue; otherwise skip to 12.
10. Is an internal standard required to attain a level of risk consi	stent with
management performance goals?	¥YES □ NO
11. Describe nature and status of internal sufficient standard.	
Fermilab ES&H Manual, Chapter 6020.3, Storage and Use of Flammable Gases at	
This standard, which governs use of flammable gases in detectors, provides a gra	
flammable gas involved. The measures and precautions called out are needed be	•
comply with the electrical guidelines from the National Electrical Code, NFPA70, A	
Division 2 installations. This standard has been fully implemented and integrated	into management and oversight practices.
•	
	1
·	1
12. Describe how the levels of risk and cost are consistent with	management performance goals.
The level of risk is consistent with management performance goals because the st	
industry, and an internal standard has been selected for those unique cases where	the building code and national fire code
standards cannot be applied. The internal standard was designed to provide an ed	uivalent or superior level of hazard
mitigation and comply with the intent of the codes.	
	•
13. Pick the basic implementing assumption from the list. Major	positive impact
13. Pick the basic implementing assumption from the list. In Major	positive impact Major negative impact
	t impact
14. Describe the nature and status of implementation including	cost-effectiveness
Experience has demonstrated that this program is both successful and cost-effect Building Code will require some changes to construction and contract documents.	ive. Adoption of the book National
Duriding Code will require some changes to construction and contract documents.	1
	j

			Issue	origin		Identification Team
1.	Issue(s)					
066	. Fire - mobile struc	ctures			•	
İ		•				
L	F	I Émarana Managament			□ Conventional Cod	
ı	Focus group	Emergency Management Environmental Protection		Oversigh	☐ Occupational Sant☐ Radiation Protect	
	L			<u></u>		
2.	Is there a neces	ssary standard which	applies to this is	ssue?		YES NO
				If	yes, continue; oth	
3.	Necessary stan					
		pecific legal requirements id w is applicable to the occup				
0, 0	·	W is applicable to the occup	and apoone a	50 OI 1110	ourdotare and contents	·
1						
<u> </u>						
_	A	of these wases		blab	da nat add valva0	TVCC PINO
4.	Are there any a	spects of these neces	sary standard(s)		f yes, continue; otl	YES NO
		•		•	, , , , , , , , , , , , , , , , , , , ,	
5.	Description of	non-value added aspe	cts of necessary	/ stand	lard(s).	
<u> </u>						
<u> </u>						
_	1 - 10 - 1 - 1 - 1			المعادة	data management	
6. per		risk associated with the assuming compliance				YES X NO
P0,		and an interesting	abbusanto		If no continue; oth	erwise skip to 12
7.	Is there a non-r	required external stand	ard which applie	s to th	nis issue?	X YES NO
					yes, continue; other	

8. External sufficient standard citation	
BOCA National Building Code	
BOCA Fire Prevention Code	
National Fire Protection Association National Fire Codes (NFPA Standards List)	
UL Listing	
9. Is the level of risk associated with the issue(s) consistent with	XYES NO
management performance goals assuming compliance with the above (non-statutory) external standard?	
(non-statutory) external standard: If no continue; o	therwise skip to 12.
10. Is an internal standard required to attain a level of risk consistent with	DVEC DIO
management performance goals?	YES NO
dd. Danaille waters and atatus of intermal pufficient standard	
11. Describe nature and status of internal sufficient standard.	
	1
12. Describe how the levels of risk and cost are consistent with management pe	erformanos goolo
The level of risk is consistent with management performance goals because management expects to	
solutions for industrial issues. This is an industrial issue and the standards chosen are industrial sta	
	Minor ponethis time d
13. Pick the basic implementing assumption from the list. Major positive impact Minor positive impact	Major negative impact
■ No net impact	I wajor negative impact
14. Describe the nature and status of implementation including cost-effectivene	ess.
An implementation guide is needed to assure appropriate application of the cited standards. The exis	
covering Mobile Structures would serve as a model.	g 5 5 5 1 2 7 0 7 0,
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1.	Issue(s)	Issue	origin	☑ Hazard analysis	☐ Identification	Team
	'. Fire - special hazardous materials					
	. The Special nazardous materials					
	Focus group		Oversig	☐ Occupational nt ☐ Radiation Pro		
2.	Is there a necessary standard which applies	s to this i		yes, continue;		NO NO
3.	Necessary standard(s)			yes, continue,	otherwise skip	10 6.
		co Chanter	l. Emara	anay Candaga and D	licostor Assass	
Sub IL F 29 (29 (29 (29 (29 (41 I	IAC - Emergency Services, Disasters, and Civil Defension of the process of the pr	s	i: ⊨merg	ency Services and D	isaster Agency,	
4.	Are there any aspects of these necessary s	standard(s)		do not add valu f yes, continue;		
5.	Description of non-value added aspects of	necessar	y stand	lard(s).		
6. per	Is the level of risk associated with the issiformance goals assuming compliance with		neces		☐ YES ∑ otherwise skip	
7.	Is there a non-required external standard w	hich applie		nis issue? 'yes, continue; c	¥YES [otherwise skip	

8. External sufficient standard citation	
BOCA National Building Code	
BOCA Fire Prevention Code National Fire Protection Association National Fire Codes (NFPA Standards List)	
,	
UL Listing	
9. Is the level of risk associated with the issue(s) consistent with management performance goals assuming compliance with the above	☐ YES 🗷 NO
and the second s	othomuico okin to 10
in no continue;	otherwise skip to 12.
10. Is an internal standard required to attain a level of risk consistent with	X YES NO
management performance goals?	Bito Dito
11. Describe nature and status of internal sufficient standard.	
11. Describe nature and status of internal sufficient standard. There is always the possibility of introduction of unique one-of-a-kind materials by a physics experir	ment in order to achieve
its research objectives. By making this entry, Fermilab acknowledges its responsibility to develop	
standards for those cases where consensus external standards are not available or not applicable.	
material usages may require specific implementation standards to provide for safe usage; this level	
acknowledgement is to verify the commitment to do so.]
12. Describe how the levels of risk and cost are consistent with management	
The level of risk is consistent with management performance goals because management expects solutions for industrial issues. This is an industrial issue and the standards chosen are industrial s	
solutions for inqustrial issues. This is an inqustrial issue and the standards chosen are inqustrial s	tanuarus.
13. Pick the basic implementing assumption from the list. Major positive impact	Minor negative impact
☐ Minor positive impact	☐ Major negative impact
☐ No net impact	
14. Describe the nature and status of implementation including cost-effectiver	ness.
Implementation for identified hazards of this class has existed since the Laboratory began. The ke	
identification and assessment of new instances. The present laboratory policies for screening and	inspecting new
initiatives or modifications to existing facilities are especially designed to capture special hazardou	ıs materials.
	•

						Issue	origin	☐ Hazard analys	is IXI Id	entification Team
1.		lssue(s)			_					
06	7B	. Fire - hydroge	en targets							
l										
L										
	F	ocus group	☐ Emergen	cy Manageme	nt Fire Pro	tection		☑ Occupationa	I Safety	
				nental Protection			Oversig	ht Radiation Pr		
2.	1	is there a ne	cessary st	andard whic	h applies to	this is	ssue?			YES NO
							If	f yes, continue;	otherw	
										•
3.		Necessary s	tandard(s)							
								<u> </u>		
ļ										
ŀ										
ŀ										
								•		
		Are there en	u acnoste d	of those non	occany ctan	dard(s)	which	do not add val	2	YES NO
4.	4	Are there any	y aspecis (n these nec	essary starr	uaiu(S)		If yes, continue		
							•	n yes, continue,	, Other	wise skip to U.
_		Description of	of non-valu	a addad as	nacte of na	ooccar	v etane	dard(e)		
5. 		Description	Ji iloli-valu	e auueu as	pects of he	Cessar	y Stant	<u> </u>		
1			•							
Щ										
6.								with managemen		YES NO
pe	rfe	ormance goal	ls assumin	g compliand	e with app	licable	neces	sary standards?		
								If no continue;	otherw	rise skip to 12.
7.	1	ls there a no	n-required	external sta	ndard which	applie	es to ti	his issue?		YES NO
			-					yes, continue;	otherw	

8. External sufficient standard citation	
	i
9. Is the level of risk associated with the issue(s) consistent with	YES NO
management performance goals assuming compliance with the above (non-statutory) external standard?	
(non-statutory) external standard? If no continue; other	wise skip to 12
10. Is an internal standard required to attain a level of risk consistent with management performance goals?	X YES NO
management performance goals:	
11. Describe nature and status of internal sufficient standard.	
Fermilab ES&H Manual Chapter 5032.2, Guidelines For the Design, Fabrication, Testing, Installation, and	Operation of LH2
Targets Fermilab has developed these guidelines to address the hazards associated with these targets. The late	set vareion of this
document has been in existence and use for over 6 years.	SIL ACISION OF HIR
12. Describe how the levels of risk and cost are consistent with management performance to the internal standard in #11 hos resulted in levels of 5001 and cost are formance that	
Past adherance to the internal standard in #11 has resulted in levels of ES&H and cost performance that management goals.	are consistent with
•	
13. Pick the basic implementing assumption from the list. Major positive impact Min	nor negative impact
☐ Minor positive impact ☐ Ma ☑ No net impact	ijor negative impact
No het impact	
14. Describe the nature and status of implementation including cost-effectiveness.	
The internal standards identified in #11 have proven to be both successful and cost-effective.	
The internal standards designed in 17 7 That's protein to be bein educated and enderve.	
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	4 · • •		
1. Issue(s)	issue origin	Hazard analysis	Identification Team
068. Fire - special occupancies / accelerator and beam line	enclosures		
	Protection	Occupational	
☐ Environmental Protection ☐ Mana	gement a Oversign	ii Li nagiation Pro	lection
2. Is there a necessary standard which applies	to this issue?		X YES □ NO
z. to there a horocourty officialist which applies		ves continues	otherwise skip to 6.
	••	,ce, commue, (omormoe skip to 6.
3. Necessary standard(s)			
41 IAC - Fire Protection			
100 IAC - Fire Prevention and Safety 29 CFR 1910 Subpart E - Means of Egress			į
29 CFR 1910 Subpart L - Reans of Egress 29 CFR 1910 Subpart L - Fire Protection			
29 CFR 1910 Subpart S - Electrical			
29 CFR 1926 Subpart F - Fire Protection and Prevention 29 CFR 1926 Subpart K - Electrical			
29 CFH 1926 Subpart K - Electrical			İ
,			
4. Are there any aspects of these necessary sta	ındard(s) which	do not add valu	e? YES NO
	• •		otherwise skip to 6.
		•	•
5. Description of non-value added aspects of r	necessary stand	lard(s).	· ·
			<u> </u>
			· [
6. Is the level of risk associated with the issue performance goals assuming compliance with a			YES NO
performance goals assuming compliance with ap	phicable neces:	-	otherwise skip to 12.
		ii no commue;	omerwise skip to 12.
7 le there e wer required externel standard with	ah annlisa ta t	nio inque?	E VES ELVS
7. Is there a non-required external standard which			YES □ NO otherwise skip to 10.
· ·	11	Jos, pontinue, t	moining any to tu.

8. External sufficient standard citation		
BOCA National Building Code		
BOCA Fire Prevention Code		
NFPA 101 & 101A current editions National Fire Protection Association National Fire Codes (NFPA Standards	a Lioth	
UL Listing	LIST	
oc daing		
9. Is the level of risk associated with the issue(s) consiste management performance goals assuming compliance with (non-statutory) external standard?	ent with the above If no continue; oth	☐ YES 🗷 NO erwise skip to 12.
10. Is an internal standard required to attain a level of risk management performance goals?	consistent with	X YES INO
11. Describe nature and status of internal sufficient stand	ard.	
Fermilab ES&H Manual Chapter 5043, Management and use of cable tray		7
This standard requires proper installation of cable trays used for electrical integrated into management and oversight practices.	conductors. It has been fully	implemented and
	•	
12. Describe how the levels of risk and cost are consisten		
The level of risk is consistent with management performance goals because		
selected instead of the outdated version referred to in the OSHA regulation		
level of risk, and the current editions provide for the alternate methods of c enclosures. The internal standard addresses cable tray applications which		
The internal standard addresses cable tray applications which	are not addressed in Atticle	310 01 NFFA 70.
		Į.
		· · · · · · · · · · · · · · · · · · ·
13. Pick the basic implementing assumption from the list.	Major positive impact \[\Bar{\cup} \]	linor negative impact
	」Minor positive impact	lajor negative impact
	No net impact	
14. Describe the nature and status of implementation inc	luding cost-effectiveness	s.
Fermilab is committed to implement the standards utilizing good engineeri	ng practices to provide a leve	el of safety consistent
with the intent, in full accordance with recognized practice throughout indusubways, highway tunnels and mines, necessitate means equivalent to the simultaneously perform their function.	stry. Accelerator and beam	line enclosures, like
		1

1.	Issue(s)	Issue origin	Hazard analysis □	Identification Team
		neous combustion	<u> </u>	
UD9.	. riie - sponiai	neous combustion		
				
ı	Focus group	☐ Emergency Management ☑ Fire Protection	☐ Occupational Safe	etv
	J	☐ Environmental Protection ☐ Management & Oversight		
				- · · · · · · · · · · · · · · · · · · ·
2.	Is there a ne	ecessary standard which applies to this issue?		X YES NO
			yes, continue; othe	
		· "	yes, continue, othe	IWISE SKIP (O O.
3.	Necessary s	standard(s)		
	AC - Fire Protect			
		ention and Safety		
		art E - Means of Egress		
		art L - Fire Protection		
		art F - Fire Protection and Prevention		
	····			
4.	Are there an	y aspects of these necessary standard(s) which (do not add value?	YES NO
••			yes, continue; othe	
			, ,	
5.	Description	of non-value added aspects of necessary standa	urd(e)	
J.	Description -	of non-value added aspects of necessary standa	iiu(s).	
6.		of risk associated with the issue(s) consistent wi		MIVES THE
peri	formance goa	als assuming compliance with applicable necess	ary standards?	XYES NO
		ı	f no continue; othe	rwise skip to 12.
				-
7	lo there	on required externel standard which could be the	o icouo?	EVEC EVE
7.	is there a no	on-required external standard which applies to thi		YES NO
		if y	yes, continue; other	rwise skip to 10.

8. External sufficient standard citation		
9. Is the level of risk associated with the issue(s) consistent management performance goals assuming compliance with the		☐ YES ☐ NO
(non-statutory) external standard?	If no continue; oth	erwise skip to 12.
	•	•
10. Is an internal standard required to attain a level of risk c	onsistent with	
management performance goals?		YES NO
11. Describe nature and status of internal sufficient standard	I.	
TI. BOODING HALAIO AND GLAVAGO OF MILESTIAN COMMISSION CHARACTER	·•	
•		
12. Describe how the levels of risk and cost are consistent w		
The level of risk is consistent with management performance goals because r solutions for industrial issues. This is an industrial issue and the standards s		
Solutions for industrial issues. This is an industrial issue and the standards s	ciccica are industrial star	idaids.
	•	
	- A1700-1-1-1-1	
13. Pick the basic implementing assumption from the list.	lajor positive impact 🔲 l	Minor negative impact
	linor positive impact 🔲 f	Major negative impact
II I N	o net impact	
<u> </u>		
	• • • • • • • • • • • • • • • • • • • •	s.
Describe the nature and status of implementation includ Existing fire prevention, housekeeping, and self assessment activities adequ	ing cost-effectivenes	
14. Describe the nature and status of implementation includ Existing fire prevention, housekeeping, and self assessment activities adequed However, there is a need for coordination to improve both the physical effect	ing cost-effectivenes ately address this and ma	any similar issues.
14. Describe the nature and status of implementation includ Existing fire prevention, housekeeping, and self assessment activities adequ	ing cost-effectivenes ately address this and ma	any similar issues.
14. Describe the nature and status of implementation includ Existing fire prevention, housekeeping, and self assessment activities adequed However, there is a need for coordination to improve both the physical effect	ing cost-effectivenes ately address this and ma	any similar issues.

					issue	origin	Hazard analysis □	Identification Team
1.	issue(s)							
070	Fire - stationary	combustion en	gines		_			
l								
	ocus group	7 Emergency	Management	Fire Prof	tection		☐ Occupational Saf	fetv
						Oversigl	ht Radiation Protect	
	_							
2.	is there a nece	essary stand	ard which a	applies to	this is	sue?		YES NO
		•					yes, continue; oth	
						••	, 00, 00, 11, 11, 12, 12, 12, 12, 12, 12, 12, 12	c. cp .c c.
3.	Necessary sta	ndard(s)						
								
1								
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_							d	FIVE PINE
4.	Are there any	aspects of	inese neces	sary stand	iara(s)		do not add value?	YES NO
						'	f yes, continue; oth	ierwise skip to 6.
_	mtustuu es			-44			Inval(a)	
5.	Description of	non-value	added aspe	cts of nec	essary	stanc	iard(s).	
l			٠.					
1								
L								
6.							with management	T VEC DING
per	formance goals	assuming	compliance	with appl	icable	neces	sary standards?	YES NO
							If no continue; oth	erwise skip to 12.
7.	Is there a non-	-required ex	ternal stand	ard which	applie	s to ti	his issue?	X YES NO
		-					yes, continue; other	

8. External sufficient standard citation	
NFPA 37: Standards for the Installation and Use of Stationary Combustion Engines and Gas Turbines.	
9. Is the level of risk associated with the issue(s) consistent with	
9. Is the level of risk associated with the issue(s) consistent with management performance goals assuming compliance with the above	YES NO
(non-statutory) external standard? If no continue; other	rwied skip to 12
ii no continue, other	iwise skip to 12
10. Is an internal standard required to attain a level of risk consistent with	☐ YES ☐ NO
management performance goals?	
11. Describe nature and status of internal sufficient standard.	
12. Describe how the levels of risk and cost are consistent with management perfo	rmance goals
The level of risk is consistent with management performance goals because management expects to us	
solutions for industrial issues. This is an industrial issue and the standards selected are industrial standards	
13. Pick the basic implementing assumption from the list. ☐ Major positive impact ☑ Minor positive impact ☐ Minor positive im	nor negative impact
☐ Millor positive impact	ajoi negative iinpact
The first input	
14. Describe the nature and status of implementation including cost-effectiveness	
There are a few known noncompliances which would be mitigated programmatically as older units are rep	
In addition, where concerns merit, a hazard analysis could dictate more rapid action for compliance.	iaced or upgraded.
This item is to be considered in parallel with item 65 - Flammable Liquids and Gases. It is given that full	compliance with the
standards cited there is the case.	
	i

4	issue o	rigin	Hazard analysis	☐ Identification Team
1. Issue(s)				
071. Fire - storage of combustibles				•
	Protection		Occupational S	
☐ Environmental Protection ☐ Man	agement & O	versign	t Radiation Prote	ection
		_		
2. Is there a necessary standard which applies	to this iss	ue?		X YES NO
		lf	yes, continue; o	therwise skip to 6.
O Nassassas atomicalità			•	
3. Necessary standard(s)				
41 IAC - Fire Protection 100 IAC - Fire Prevention and Safety				
29 IAC - Emergency Services, Disasters, and Civil Defense	e. Chapter I: E	Emerae	ncv Services and Dis	saster Agency.
Subchapter f: Chemical Safety			,	<u>-</u>
IL Public Act 84-852, Illinois Chemical Safety Act				
29 CFR 1910 Subpart E - Means of Egress				
29 CFR 1910 Subpart H - Hazardous Materials				
29 CFR 1910 Subpart L - Fire Protection 29 CFR 1910 Subpart S - Electrical				•
29 CFR 1926 Subpart F - Fire Protection and Prevention				
29 CFR 1926 Subpart Z - Toxic and Hazardous Substances				
•				
-				
			•	
				
4. Are there any aspects of these necessary st	iandard(s) w			
		IT	yes, continue; c	otherwise skip to 6
5. Description of non-value added aspects of	necessary	stand	ard(s).	
·		,		
		<u> </u>		
A to the level of state annual state are a	-/-\! •	\		
6. Is the level of risk associated with the issu				YES X NO
performance goals assuming compliance with a	shhiicanie II		-	
			ii no continue; o	therwise skip to 12
7. Is there a non-required external standard wh	ich applies	to th	is issue?	X YES NO
		If	yes, continue; ot	herwise skip to 10

8. External sufficient standard citation		
BOCA National Building Code BOCA Fire Prevention Code		
National Fire Protection Association National Fire Codes (NFPA Standards Li	et)	
UL Listing	ot)	
9. Is the level of risk associated with the issue(s) consistent	with	
management performance goals assuming compliance with the		YES NO
(non-statutory) external standard?	If no continue; other	wiee ekin to 12
`	ii iio continue, other	wise skip to 12
10. Is an internal standard required to attain a level of risk o	consistent with	YES NO
management performance goals?		<u> </u>
11. Describe nature and status of internal sufficient standard	d.	
The Bookins Hataro and States of Missian Series of Canada		
12. Describe how the levels of risk and cost are consistent v	with management nerfer	manco goale
The level of risk is consistent with management performance goals because		
solutions for industrial issues. This is an industrial issue and the standards		
13. Pick the basic implementing assumption from the list $\Box N$	Major positive impact 🔲 Mir	or negative impact
1	Minor positive impact Ma	jor negative impact
<u>'I 📶</u>	lo net impact	
14. Describe the nature and status of implementation include		
The overall program exists and has been implemented. Regular inspections	which include housekeeping/	combustibles are
ncluded in mandatory self assessment activities.		
		j

If yes, continue; otherwise skip to 10.

1. Issue(s)		issue o	rigin 🗵	Hazard analysis	■ Identification Team
072. Fire - transport	ation / rail, vehicle, and fueling ort - fire/explostion / onsite				
Focus group	☐ Emergency Management			☐ Occupational 3	
2. Is there a nec	essary standard which applie	es to this iss		es, continue; c	▼ YES NO NO Notherwise skip to 6.
3. Necessary sta					
170 IAC - Storage, Tra 180 IAC - Storage Tra 49 CFR 383.23 Comm 49 CFR 393.95 Emerg 49 CFR 397.11 Fires 49 CFR 397.13 Smokil 49 CFR 397.15 Fueling	tion and Safety ansportation, Sale and Use of Gasol ansportation, Sale and Use of Petro ansportation, Sale and Use of Volati and Use of Volati and Drivers License gency Equipment on Vehicles	oleum and Other ile Oils			eneral Storage
4. Are there any	aspects of these necessary	standard(s) w			e? YES NO NO Notherwise skip to 6.
5. Description of	non-value added aspects o	of necessary	standar	d(s).	
	· .				
	f risk associated with the iss assuming compliance with		ecessar	y standards?	☐ YES ⊠ NO otherwise skip to 12.
7. Is there a non	n-required external standard v	which applies	to this	issue?	¥YES □ NO

8. External sufficient standard citation	
BOCA National Building Code	
BOCA Fire Prevention Code	
National Fire Protection Association National Fire Codes (NFPA Standards Li	ist)
UL Listing	
9. Is the level of risk associated with the issue(s) consistent	with XYES NO
management performance goals assuming compliance with the	e above
(non-statutory) external standard?	If no continue; otherwise skip to 1
	•
10. Is an internal standard required to attain a level of risk c	Onsistent with
management performance goals?	
11. Describe nature and status of internal sufficient standard	d
11. Describe flature and status of internal sufficient standard	u.
12. Describe how the levels of risk and cost are consistent v	
The level of risk is consistent with management performance goals because	
supplemented with building code and national fire code standards. This is the	e same solution that has been selected by
industry and municipalities.	
	Major positivo impost Miner posetive impost
13. Pick the basic implementing assumption from the list. \Box	Major positive impact
	Minor positive impact
	TO HEL HIPACL
14. Describe the nature and status of implementation include	
The standards have been implemented. Experience has demonstrated that t	
cost-effective. Regulation and inspection functions are performed by the Sta	ate of Illinois authorities having jurisdiction.
	•

1.	Issue(s)		Issue	origin		☐ Identification Team
			· · · · · · · · · · · · · · · · · · ·	· · · · · ·		
	Fire - welding near con Fire - spark producing t					
F	ocus group Eme	rgency Management	Fire Protection		☐ Occupational	Safety
•		ronmental Protection		Oversigl		
2.	Is there a necessary	standard which app	lies to this is	ssue?		YES NO
				If	yes, continue; o	otherwise skip to 6.
						•
3.	Necessary standard	i(s)				
41 IA	AC - Fire Protection					
	IAC - Fire Prevention and					
	FR 1910 Subpart L - Fire					
		Iding, Cutting and Brazing	_			
29 C	FH 1926 Subpart F - Fire	Protection and Prevention	1			
		•				
						<u> </u>
4.	Are there any aspec	ts of these necessar	y standard(s)	which	do not add value	e? 🔲 YES 🔀 NO
				ł	f yes, continue;	otherwise skip to 6
5.	Description of non-	value added aspects	of necessar	y stand	lard(s).	
						
		associated with the i				YES X NO
perf	formance goals assu	ıming compliance wit	in applicable	neces		
					If no continue; o	otherwise skip to 12
7.	Is there a non-requi	red external standard	which applie	es to ti	his issue?	YES NO
	, •		• •			therwise skip to 10

BOCA Fire Prevention Code	
NFPA 1: Fire Prevention Code	
NFPA 51: Standard for the Design and Installation of Oxygen-Fuel Gas Syste	
NFPA 51B: Standard for Fire Protection in Use of Cutting and Welding Proces	sses.
9. Is the level of risk associated with the issue(s) consistent	with YES NO
management performance goals assuming compliance with the	above
(non-statutory) external standard?	If no continue; otherwise skip to 12.
	,
40 It is believed about an automatic attains a level of white	and the second sould
10. Is an internal standard required to attain a level of risk c	Sonsistent with YES NO
management performance goals?	
11. Describe nature and status of internal sufficient standard	4
Fermilab ES&H Manual Chapter 6020.3, Storage and Use of Flammable Gase	
This standard calls for a minimum separation between welding, burning, brazi	
experiment apparatus using flammable gases. If the minimum separation is r	
first be removed from the apparatus before operations are permitted. This rec	
burning and brazing permit control process.	,
12. Describe how the levels of risk and cost are consistent v	
The level of risk is consistent with management performance goals because the decided as internal standard has been salested for these unique saccess.	
industry, and an internal standard has been selected for those unique cases we physics experiment apparatus. The internal standard was designed to provide	
Imitigation and comply with the intent of the codes.	e an equivalent of superior level of nazard
initioation and comply with the intent of the codes.	·
13. Pick the basic implementing assumption from the list. □ N	Major positive impact □ Minor negative impact
13. Pick the basic implementing assumption from the list. □ N	/linor positive impact 🔲 Major negative impact
13. Pick the basic implementing assumption from the list. □ N	Major positive impact ☐ Minor negative impact Minor positive impact ☐ Major negative impact No net impact
13. Pick the basic implementing assumption from the list. □ N	/linor positive impact 🔲 Major negative impact
13. Pick the basic implementing assumption from the list. □ N	linor positive impact ☐ Major negative impact lo net impact
13. Pick the basic implementing assumption from the list. □ N □ N	Iling cost-effectiveness.
 13. Pick the basic implementing assumption from the list. □ N □ N 14. Describe the nature and status of implementation includ Implementation has long been in place using the standard industrial practice considerably more efficient than a fire watch approach. The permit process a 	In major negative impact Major negative impact negative impact net impact Major negative impact net
13. Pick the basic implementing assumption from the list. □ N □ N 14. Describe the nature and status of implementation includ Implementation has long been in place using the standard industrial practice of th	In positive impact Major negative impact lo net impact In pact Major negative impact In pac
 13. Pick the basic implementing assumption from the list. □ N □ N 14. Describe the nature and status of implementation includ Implementation has long been in place using the standard industrial practice considerably more efficient than a fire watch approach. The permit process a 	In major negative impact Major negative impact negative impact net impact Major negative impact net
13. Pick the basic implementing assumption from the list. ☐ N ☐ N ☐ N ☐ N ☐ N ☐ N ☐ N ☐ N ☐ N ☐	In positive impact Major negative impact negative impact net impact Major negative impact net impac

			Issue	origin	Hazard analysis	Identification Team
1.	Issue(s)	and had and shoulthoun	/ officials			
07	ba. Hazmat trans	port - bad road conditions	/ onsite			
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_		□ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □	ant D Fire Dretestion		M Occupational 6	Defeat.
	Focus group	☐ Emergency Manageme				
	•		<u> </u>			
2.	Is there a ne	cessary standard whice	h applies to this i	ssue?		▼ YES □ NO
	*		••		ves continue o	otherwise skip to 6.
					you, commuo, c	and moe only to o.
3.	Necessary s	tandard(s)				
49	CFR 392.14 (Haz	ardous conditions; extreme	caution)			
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						ĺ
İ						
<u> </u>						
4	Are there an	y aspects of these ne	naceary etandard(e)	which	do not add value	2 FIVES MINO
4.	Ale there an	y aspects of these her	cessary standard(s)			e? YES X NO otherwise skip to 6.
					,, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	omormoo omp to o.
5.	Description	of non-value added as	spects of necessar	v stanc	dard(s).	
						İ
		<u> </u>	· · · · · · · · · · · · · · · · · · ·			
6.	Is the level	of risk associated with	the issue(s) cons	istent v	with management	MIVEO PINO
pe		ls assuming complian			sary standards?	YES NO
					If no continue; o	therwise skip to 12.
7.	is there a no	on-required external sta	andard which appli	es to ti	his issue?	YES NO
				lf	yes, continue; o	therwise skip to 10.

8. External sufficient standard citation	
9. Is the level of risk associated with the issue(s) consistent with	YES NO
management performance goals assuming compliance with the above (non-statutory) external standard?	therwise skip to 12
ii no continue, o	therwise skip to 12
10. Is an internal standard required to attain a level of risk consistent with	EVEC ENG
management performance goals?	YES NO
11. Describe nature and status of internal sufficient standard.	
	·
12. Describe how the levels of risk and cost are consistent with management per Past adherance to the statutory requirement in #3 has resulted in levels of ES&H and cost performant	
with management goals inlouding the use of industrial standards for industrial issues.	ice that are consistent
<u> </u>	
13. Pick the basic implementing assumption from the list. Major positive impact	Minor negative impact
☐ Minor positive impact ☐ ☑ No net impact] Major negative impact
lear 1	
14. Describe the nature and status of implementation including cost-effectivene	ess.
Experience has demonstrated that this program is both successful and cost-effective.	

If yes, continue; otherwise skip to 10.

	leave(s)		Iss	ue origin	🛚 Hazard analysis 🔻	Identification Team
1.	issue(s)	nort bod road condition	n / anaita			
י/טן	ob. Haziviat trans	port - bad road conditions	s / Unsite			1
l						
	Focus group	☐ Emergency Manager			☑ Occupational Saf	
		☐ Environmental Prote	ction Managemer	nt & Oversig	ht Radiation Protect	ion
2.	is there a ne	cessary standard wh	ich applies to thi	s issue?		YES X NO
				ŀ	f yes, continue; oth	erwise skip to 6.
						-
3.	Necessary s	tandard(s)				
•						
Ì						
4.	Are there an	y aspects of these n	ecessary standard			☐ YES ☐ NO
					If yes, continue; oth	erwise skip to 6.
5.	Description (of non-value added	aspects of neces	sary stan	dard(s).	
ł						
l						
					•	
	·					
_	La Ales B	A what comments to the	Alla Alla Innes ()			
6.		of risk associated wi Is assuming complia				YES NO
ьe	normance goa	is assuming complia	ше мин арриса	nic lieces	• -	
					If no continue; other	eiwise skip to 12.
						_
7	is there a no	n-required external s	tandard which an	nlies to t	his issue?	M VES INO

8. External sufficient standard citation	
49 CFR 392.14 (Hazardous conditions; extreme caution - not required onsite)	
9. Is the level of risk associated with the issue(s) consistent with	1 NO
management performance goals assuming compliance with the above	
(non-statutory) external standard? If no continue; otherwise skip	to 12.
10. Is an internal standard required to attain a level of risk consistent with	INO
management performance goals?	INO
11. Describe nature and status of internal sufficient standard.	
11. Describe nature and status of internal sufficient standard.	
	1
12. Describe how the levels of risk and cost are consistent with management performance goa	ls.
Past adherance to the external standard in #8 has resulted in levels of ES&H and cost performance that are consister	t with
management goals inlouding the use of industrial standards for industrial issues.	- 1
	1
	:
	1
	ļ
13. Pick the basic implementing assumption from the list. Major positive impact Minor negative i	mpact
☐ Minor positive impact ☐ Major negative i	mpact
No net impact ■ No net impact ■ No net impact ■ No net impact ■ No net impact ■ No net impact ■ No net impact No	
14. Describe the nature and status of implementation including cost-effectiveness.	· · · · · ·
For "onsite" transportation issues, it is assumed that access is restricted in a way which removes site roads from being considered "in commerce" per DOT. If not, the standards for the analogous "offsite" issue should be applied. Fermilab	
lits own Roads & Grounds Department. They perform road maintenance as needed, and will continue to do so. Experie	
has demonstrated that this program is both successful and cost-effective.	
	I

1.	Issue(s)	Issue	origin	★ Hazard analysis	Identification Team
076	6A. HazMat transport - emergency response and spill	l clean up / offs	ite		
	A. HazMat transport - spills and chemical releases /				
	· · · · · · · · · · · · · · · · · · ·				
		ire Protection		○ Occupational	
		ianagement &	Oversign	nt Radiation Pro	tection
2.	Is there a necessary standard which applic	es to this is	sue?		YES NO
	•		If	vec continue:	otherwise skip to 6.
				yes, continue,	otherwise skip to 6.
	Naccess standard(s)				
3.	Necessary standard(s)	·			
	CFR 172.600G (Emergency response information)				
	CFR 171.15 (Immediate notice of certain hazardous n	naterial inciden	ts)		i
	CFR 112 (Oil pollution prevention)				
	CFR 761 (PCB spill cleanup policy)				
	CFR 302 (Designation, reportable quantities & notification and the control of the	ation)	•		
40 (CFR 355 (Emergency planning & notification)				
ŀ					·
<u> </u>					
4.	Are there any aspects of these necessary	standard(s)	which	do not add valu	ue? ☐ YES 🗷 NO
7.	Are there any appears or those houseary	otanaara(o)			otherwise skip to 6.
			•	i yes, continue,	otherwise skip to 6.
5.	Description of non-value added aspects of	of necessary	stand	lard(s).	
					\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \
					•
L					
_	to the level of rick conscioted with the in	euo(e) .como!	etent :	uith managament	
6.					YES NO
per	formance goals assuming compliance with	applicable	neces	_	
				If no continue;	otherwise skip to 12
	•				i
_	In these a man manuful automat attended .	blak		da lagua?	
7.	Is there a non-required external standard	wnich applie			☐ YES ☐ NO
			lf	yes, continue;	otherwise skip to 10.

8. External sufficient standard citation	
9. Is the level of risk associated with the issue(s) consistent with	YES NO
management performance goals assuming compliance with the above	<u> </u>
(non-statutory) external standard?	otherwise skip to 12
10. Is an internal standard required to attain a level of risk consistent with management performance goals?	YES NO
11. Describe nature and status of internal sufficient standard.	
12. Describe how the levels of risk and cost are consistent with management p	
Past adherance to the statutory requirements in #3 has resulted in levels of ES&H and cost perforr with management goals inlcuding the use of industrial standards for industrial issues.	nance that are consistent
······································	
	—
13. Pick the basic implementing assumption from the list. ☐ Major positive impact ☐ Minor positive impact	☐ Minor negative impact ☐ Major negative impact
No net impact	
14. Describe the nature and status of implementation including cost-effective	ness.
Experience has demonstrated that this program is both successful and cost-effective.	:

1.	Issue(s)	Issue origin 🛮 Hazard ana	ulysis 🛮 Identification Team
076		insport - emergency response and spill cleanup / onsite	
		Insport - spills and chemical Releases / onsite	
i	Focus group	☐ Emergency Management ☐ Fire Protection ☐ Occupation ☐ Environmental Protection ☐ Management & Oversight ☐ Radiation	
2.	Is there a n	necessary standard which applies to this issue?	X YES INO
			ue; otherwise skip to 6.
		,	,,,,,,,
3.	Necessary :	standard(s)	
		(Hazardous waste operations & emergency response)	
		pollution prevention) spill cleanup policy)	
		gnation, reportable quantities & notification)	
40 C	CFR 355 (Emerg	rgency planning & notification)	
4.	Are there an	any aspects of these necessary standard(s) which do not add	
		If yes, contin	ue; otherwise skip to 6.
5.	Description	of non-value added aspects of necessary standard(s).	
:			
			
6.		of risk associated with the issue(s) consistent with managem	
per	formance goa	oals assuming compliance with applicable necessary standard	15:
		If no continu	ue; otherwise skip to 12.
7.	Is there a ne	non-required external standard which applies to this issue?	☐ YES ☐ NO
		If yes, continu	e; otherwise skip to 10.

8. External sufficient standard citation			
9. Is the level of risk associated with the issue(s) consistent with		☐ YES ☐ N	ō
management performance goals assuming compliance with the abov (non-statutory) external standard?			
(non-statutery) external estimates	o continue;	otherwise skip to	12.
10. Is an internal standard required to attain a level of risk consist	ent with		
management performance goals?		☐ YES ☐ N	<u>o</u>
11. Describe nature and status of internal sufficient standard.			
	. 7: - 1-7:		
			- 1
		· · · · · · · · · · · · · · · · · · ·	
12. Describe how the levels of risk and cost are consistent with m	anagement	performance goals.	
Past adherance to the requirement in #3 above has resulted in levels of ES&H and c	ost performan		\neg
with management goals inlouding the use of industrial standards for industrial issues	3.		-
13. Pick the basic implementing assumption from the list. Major po	ositive impact	☐ Minor negative impa☐ Major negative impa	act act
⊠ No net i			
14. Describe the nature and status of implementation including c For "onsite" transportation issues, it is assumed that access is restricted in a way with the control of t			
considered "in commerce" per DOT requirements. If not, the standards for the analog	gous "offsite" i		ı.
Experience has demonstrated that this program is both successful and cost-effective	ve.		
			- (

1.	Issue(s)						Issue	origin	X H	azard an	alysis	Ide	ntification	on Team
	7A. HazMat tran	nsport - f	re and ex	plostion	/ offsite									
		•		•										
														j
l														ļ
	Focus group	ПЕп	ergency I	Managen	nent 🗆	Fire Pr	otection		<u> </u>	Occupat	ional S	afety		
	rocus group		vironment					Oversig						
		<u> </u>												
2.	ls there a n	necessa	rv stand	ard wh	ich apı	olies to	this is	ssue?				ſ	X YES	□ NO □
			,						f vae	, contin	110· Of	L		
								•	. yes,	, contin	ue, o	iiici wi	ac aki	p 10 0.
3.	Necessary	standa	rd(s)											
	CFR 171.15 (Im			n of cert	ain haza	rdous m	aterials i	incidents	s)		······································			
	CFR 172.600G (,					
														}
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														ļ
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_							al = = al (= \			41-1	1	_		E NO
4.	Are there ar	пу аѕр	ects of t	inese n	ecessa	ry stan	idard(S)							ip to 6.
								'	ii yes	s, conti	nue, c	MISH	1156 2K	ир ю в.
_	Description	a f non	. volue						aloval/a	-1				
5. —	Description	OI HOI	i-value	added a	aspects	oi ne	cessar	y Stant	uaru(s	s).				
									•					
														l
														ļ
1														
L														
6.	is the level											i i	VEQ	□ NO
pe	rformance go	oals ass	uming	complia	nce w	ith app	olicable	neces				-		
									if no	contin	ue; o	therwi	ise ski	p to 12.
7.	Is there a n	non-requ	ired ex	ternal s	tandar	d whic	h applie	es to t	his is	sue?		ı	☐ YES	□ NO
		_					-				ue; ot	herwi		p to 10.

8. External sufficient standard citation	
	-
9. Is the level of risk associated with the issue(s) consistent with	YES N
management performance goals assuming compliance with the above (non-statutory) external standard?	e
(non-statutory) external standard:	o continue; otherwise skip to
10. In an internal otendord required to ottoin a level of rick consists	and with
10. Is an internal standard required to attain a level of risk consistemanagement performance goals?	YES N
11. Describe nature and status of internal sufficient standard.	
	•
12. Describe how the levels of risk and cost are consistent with m Past adherance to the statutory requirements in #3 has resulted in levels of ES&H a	
with management goals inlouding the use of industrial standards for industrial issues	
13. Pick the basic implementing assumption from the list. Major po	sitive impact Minor negative impa
Li Minor po	sitive impact L. Major negative impa
No net in	npact
14. Describe the nature and status of implementation including co	ost-effectiveness.
Experience has demonstrated that this program is both successful and cost-effective	

		1	Issue	origin	Hazard analysis	entification Team
1.	lssue(s)			.	Z razar ariarjoro Z rac	Transcator Tour
078	A. HazMat trans	sport - loading and unloading / offsite				
					,	
	Focus group	☐ Emergency Management ☐ Fire Prote			Occupational Safety	
		☐ Environmental Protection ☐ Managen	ment &	Oversigi	nt Radiation Protection	
				_		
2.	is there a no	ecessary standard which applies to	tnis is			YES NO
				if	yes, continue; otherw	ise skip to 6.
3.	Necessary s	etandard(s)				
		oading & unloading)				
		landling materials - general)		,		
29 (CFR 1910.178 (F	Powered industrial trucks)				
						1
						1
						,
4.	Are there an	y aspects of these necessary standa	lard(s)	which	do not add value?	YES X NO
				J	f yes, continue; otherv	vise skip to 6.
5.	Description	of non-value added aspects of nec	essary	y stanc	lard(s).	
1						
						1
1						
						
6.		of risk associated with the issue(s)				X YES NO
per	formance goa	als assuming compliance with appli	icable	neces	sary standards:	
					If no continue; otherw	rise skip to 12.
						*
7.	is there a ne	on-required external standard which	applie			YES NO
				lf	ves. continue: otherwi	ise skip to 10.

8. External sufficient standard citation		
9. Is the level of risk associated with the issue(s) consis		YES NO
management performance goals assuming compliance with (non-statutory) external standard?		
(non statutery) external standard.	If no continue; oth	ierwise skip to 12.
10. Is an internal standard required to attain a level of ris	k consistent with	
management performance goals?		YES NO
11. Describe nature and status of internal sufficient stan	dard.	
The population interest and stated of investment states	44.4	
12. Describe how the levels of risk and cost are consiste		
Past adherance to the statutory requirements in #3 has resulted in levels with management goals inlouding the use of industrial standards for industrial		ce that are consistent
with management goals inicuding the use of industrial standards for indu-	stilal issues.	ł
13. Pick the basic implementing assumption from the list.	☐ Minor positive impact ☐ I	winor negative impact Major negative impact
	No net impact	
14. Describe the nature and status of implementation in	cluding cost-offootivenes	e
14. Describe the nature and status of implementation in Experience has demonstrated that this program is both successful and		3.
•		

If yes, continue; otherwise skip to 10.

1. Is	ssue(s)	Issue	origin	🛮 Hazard analysis	Identification Team
	HazMat transport - loading and unloading / onsit	10			
	Material handling - transportation / onsite	le			
USSD.	Material Hariding - transportation 7 onsite				
	¥*				
		······································			
Fo		Fire Protection		☑ Occupational Safe	
	☐ Environmental Protection ☐	Management &	Oversigi	nt Radiation Protection	on
2. Is	there a necessary standard which app	lies to this is	sue?		X YES NO
0	more a meessary cumana miner app				
	•		IT	yes, continue; othe	erwise skip to 6.
3. N	ecessary standard(s)				
29 CFF	R 1910.176 (Handling materials - general)	•			
	R 1910.178 (Powered industrial trucks)				
					\
					,
·					
4. Aı	re there any aspects of these necessary	v standard(s)	which	do not add value?	YES NO
7	o more any aspects of most most most and	, •		f yes, continue; oth	
			•	, yes, somme, our	crimise only to o.
5. D	escription of non-value added aspects	of necessary	stand	lard(s).	
				_	
				•	
				•	
			,		
					<u> </u>
6. Is	the level of risk associated with the i	issue(s) consi	stent v	vith management	
	mance goals assuming compliance wit				☐ YES 🔀 NO
	- J J			If no continue; other	rwise skin to 12
				n no continue, othe	amoe saip to 12.
7. Is	there a non-required external standard	which applie	s to th	nis issue?	¥ YES □ NO

8. External sufficient standard citation	
49 CFR 177.848C (Segregation table for hazardous materials - not required onsite)	
	· · · · · · · · · · · · · · · · · · ·
9. Is the level of risk associated with the issue(s) consistent with	X YES NO
management performance goals assuming compliance with the above	· · · · · · · · · · · · · · · · · · ·
(non-statutory) external standard? If no continue; other	rwise skip to 12
·	
10. Is an internal standard required to attain a level of risk consistent with	
management performance goals?	YES NO
11. Describe nature and status of internal sufficient standard.	
	•
· ·	
12. Describe how the levels of risk and cost are consistent with management perfo	rmance goals.
The requirements cited in #3 above adequately address the mechanical aspects of handling materials.	
of the standard cited in #8 above is necessary to control chemical incompatibilities. Past adherance to	
#3 and the internal standard in #8 has resulted in levels of ES&H and cost performance that are consiste	ent with
management goals inlouding the use of industrial standards for industrial issues.	
	•
13. Pick the basic implementing assumption from the list. Major positive impact M	inor negative impact
☐ Minor positive impact ☐ M	ajor negative impact
No net impact	
14. Describe the nature and status of implementation including cost-effectiveness	
For "onsite" transportation issues, it is assumed that access is restricted in a way which removes site ro	
considered "in commerce" per DOT requirements. If not, the standards for the analogous "offsite" issue	should be applied.
Experience has demonstrated that this program is both successful and cost-effective.	
	e .

1.	Issue(s)				Issue	origin	Hazard analys	is 🔀 Ide	ntification Team
		nort poeks	ing hozarda	n motoriale / =:	ffoito				
0/8	A. HazMat trans	sport - раска <u>с</u>	ng nazardou	s materiais / o	risite				
									*
	Focus group	Emergen	cy Managome	nt ☐ Fire Pr	otection		☑ Occupationa	l Cofoty	
	rocus group					Oversial	nt 🔲 Radiation Pi		
				on	omoni a	o roloigi		0.000.011	
	l- 16			h ammlian ta	- 461- 1	0			
2.	Is there a ne	ecessary sta	indard whic	n applies to	o unis i				YES NO
						lf	yes, continue;	otherw	ise skip to 6.
3.	Necessary s	tandard(s)							
49 (CFR 178.500L St	ubchapter C (Specifications	for packaging	s)		-		
									1
1									
4.	Are there any	v aspects o	of these ne	essarv stan	ndard(s)	which	do not add va	ue?	YES NO
7.	Are there and	, aspects t		Joseph Glair	.aa.a(o)		f yes, continue		
						•	. ,00, 00	, στιιστι	noe omp to o.
_	Description	of non-valu	a added as	mosts of n			lord(a)		
5.	Description o	oi iloli-valu	e audeu as	pecis of in	ecessary	Stallu	<u> </u>		
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	le Abe Jessey	af alal		. 460 500-5	-\ <u>-</u>				
6.							vith managemer sary standards?		XYES NO
hei	.cimance you	ussullill	a combinan	oo wiiii ap	JIIVADIE		-	•	
							If no continue;	otnerw	ise skip to 12.
7.	Is there a no	n-required	external sta	indard which	h applie	s to th	nis issue?		YES NO
	•					lf.	yes, continue;	otherwi	se skip to 10.

8. External sufficient standard citation		
9. Is the level of risk associated with the issue(s) consist	ent with	YES NO
management performance goals assuming compliance with		
(non-statutory) external standard?	If no continue;	otherwise skip to 12
10. Is an internal standard required to attain a level of ris management performance goals?	k consistent with	YES NO
11. Describe nature and status of internal sufficient stan	dard.	
·		
12. Describe how the levels of risk and cost are consiste	nt with management	performance goals.
Past adherance to the statutory requirements in #3 has resulted in levels		mance that are consistent
with management goals inlouding the use of industrial standards for indu	STRAI ISSUES.	
	4	<u>.</u>
13. Pick the basic implementing assumption from the list.	☐ Major positive impact	☐ Minor negative impact
	☐ Minor positive impact☒ No net impact	☐ Major negative impact
	No net impact	
14. Describe the nature and status of implementation in	cluding cost-effective	ness.
Experience has demonstrated that this program is both successful and		
		,

			Issue	origin	🛮 Hazard analysis 🔻 l	dentification Team
1.	Issue(s)		meteriale / engite		· · · · · · · · · · · · · · · · · · ·	
1078	B. Hazmat tran	sport - packaging hazardous	materials / onsite			
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1						
L						
	Focus group	☐ Emergency Managemer		Oversied	Occupational Safet	
		Environmental Protection	n 🔲 Management &	Oversigi	ht Radiation Protection	1
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2.	is there a n	ecessary standard whicl	a applies to this is			YES NO
				lf	yes, continue; other	wise skip to 6.
2	Necessary	otandard(c)				
3. —		stanuaru(s)				
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	A 16			uda la b	do not odd volvo?	DVEC DVO
4.	Are there an	y aspects of these nec	essary standard(s)		f yes, continue; othe	YES NO
				•	ir yes, continue, othe	wise skip to u.
5.	Description	of non-value added as	nacte of nacassari	v etano	lard(e)	
5.	Description	or non-value added as	pecis of fiecessary	y Stairt		
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6.		of risk associated with				YES NO
рe	riormance go	als assuming compliand	e with applicable	neces	=	
					If no continue; other	wise skip to 12.
7.	is there a n	on-required external sta	ndard which applie			X YES NO
				lf	yes, continue; other	wise skip to 10.

8. External sufficient standard citation	
49 CFR 173.24(e)(1-2) (Chemical compatibility for single packagings - onsite)	
49 CFR 173.24(e)(4)(i-111) (Chemical compatibility for multiple packagings - onsite)	
49 CFR 173.24a (a)(1) (Positioning of inner receptacles - onsite)	
49 CFR 173.24a (a)(3-4) (Packing for inner receptacles - onsite) 49 CFR 177.848C (Segregation table for hazardous materials - onsite)	
49 CFR 177.646C (Segregation table for hazardous materials - onsite)	
10 0111 1701000	
9. Is the level of risk associated with the issue(s) consistent with	X YES NO
management performance goals assuming compliance with the above	
(non-statutory) external standard?	otherwise skip to 12.
10. Is an internal standard required to attain a level of risk consistent with	ELVEO ELVO
management performance goals?	YES NO
11. Describe nature and status of internal sufficient standard.	
12. Describe how the levels of risk and cost are consistent with management p	
Past adherance to the external standards in #8 has resulted in levels of ES&H and cost performance	e that are consistent
with management goals inlouding the use of industrial standards for industrial issues.	
	j
13. Pick the basic implementing assumption from the list. Major positive impact	☐ Minor negative impact
☐ Minor positive impact	☐ Major negative impact
No net impact No	
14. Describe the nature and status of implementation including cost-effective	iess.
For "onsite" transportation issues, it is assumed that access is restricted in a way which removes si	te roads from being
considered "in commerce" per DOT requirements. If not, the standards for the analogous "offsite" is	
I Construction of the Association to Additional Additional Construction of the Association of the Additional Construction of the Association of th	
Experience has demonstrated that this program is both successful and cost-effective.	
Experience has demonstrated that this program is both successful and cost-effective.	
Experience has demonstrated that this program is both successful and cost-effective.	

	1(-)			ı	ssue	origin	Hazard analysi	s 🔀 Identification Team
1.	Issue(s)			-41 4-1-1				
079	C. HazMat trans	sport - transpo	rtation of radioa	ctive materials	S			
l								
L								
	Focus group	□ Emergeno	y Management	☐ Fire Prote	ection		☐ Occupationa	Safety
	. couc, group					Oversigl	ht 🛛 Radiation Pro	
				<u> </u>				
2.	Is there a ne	acessary sta	ndard which	annlies to	thie i	eeua?		X YES NO
۷.	is there a ne	cocoodiy old	ndara winon	applies to	tillo k			
						IT	yes, continue;	otherwise skip to 6.
3.	Necessary s	tandard(e)						
49	CFR 100-199 and	reterences						
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4.	Are there any	y aspects o	f these neces	ssary standa	ard(s)		do not add val	
						I	f yes, continue;	otherwise skip to 6.
5.	Description	of non-value	e added aspe	ects of nec	essary	y stand	lard(s).	
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l								
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Щ								
6.	is the level	of risk asso	ciated with t	he issue(s)	consi	istent v	vith managemen	t <u></u>
							sary standards?	
-	•		-	• •			-	otherwise skip to 12.
							·	
_	1a 14			المعادد المعمل			.l. !	
7.	is there a no	on-required (external stand	ard which	appiie		is issue?	YES NO

8. External sufficient standard citation	
	· · · · · · · · · · · · · · · · · · ·
9. Is the level of risk associated with the issue(s) consistent with	YES NO
management performance goals assuming compliance with the above (non-statutory) external standard?	
(non-statutory) external standard:	otherwise skip to 12.
10. Is an internal standard required to attain a level of risk consistent with	
management performance goals?	YES NO
11. Describe nature and status of internal sufficient standard.	
12. Describe how the levels of risk and cost are consistent with management	
Due to the requirements of 49 CFR 100-199, Fermilab plans on having restricted access to the site need to certify and document onsite shipment of radioactive materials and eliminate a major training	
of risk is consistent with management performance goals because management expects to use in	
industrial issues. This is an industrial issue and the solution chosen is an industrial solution.	
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Malay was Milas in a sale	[] A#:
13. Pick the basic implementing assumption from the list. Major positive impact Minor positive impact	☐ Major negative impact
No net impact No	
14. Describe the nature and status of implementation including cost-effective	nace
14. Describe the nature and status of implementation including cost-effective. The Fermilab Low Level Waste Certification Plan already exists and serves as implementation of	
concerning the specifics of the transport of radioactive materials. The program as implemented co	oupled with the restriction
of site access will be cost-effective and meet management performance goals and regulatory rec	juirements.

			Issue o	rigin	★ Hazard analysis	✓ Identification Team
1.	Issue(s)					
080	A. HazMat trans	port - prolonged periods of driving / offsite	е		-	
l						
<u> </u>					· · ·	
ı	Focus group	☐ Emergency Management ☐ Fire Pr	rotection		☑ Occupational :	Safety
		☐ Environmental Protection ☐ Manag		versigh	t Radiation Prot	ection
2.	Is there a ne	cessary standard which applies to	o this iss	ue?		YES NO
				If	yes, continue; o	therwise skip to 6.
					•	•
3.	Necessary s	tandard(s)				
49 C	FR 395 (Maximu	ım driving and on-duty time)			· · · · · · · · · · · · · · · · · · ·	
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	Are there en	y aspects of these necessary star	adard(e) u	which	do not add value	2 [] VEC [] NO
4.	Are there an	y aspects of these hecessary stat	iuaiu(s) W			e? ☐ YES ☑ NO ☐ otherwise skip to 6.
				•	yes, sontinue,	omerwise only to o.
5.	Description	of non-value added aspects of no	oceerv	etand	ard(e)	
<u>5.</u>	Description	or non-value added aspects or ne	ecessary	Stanta	aru(s).	·
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Щ-		<u> </u>				
6.		of risk associated with the issue(YES NO
per	formance goa	ls assuming compliance with ap _l	plicable n			
					If no continue; o	otherwise skip to 12.
7.	Is there a no	on-required external standard whic	h applies	to th	is issue?	YES NO
		-	- -			therwise skip to 10.

3. External sufficient standard citation		
. Is the level of risk associated with the issue(s) con		YES NO
nanagement performance goals assuming compliance w non-statutory) external standard?		therwise skip to 1
		, and this skip to 1
0. Is an internal standard required to attain a level of	risk consistent with	TVES TINO
nanagement performance goals?		YES NO
1. Describe nature and status of internal sufficient s	tandard.	
		
2. Describe how the levels of risk and cost are consi		
ast adherance to the statutory requirements in #3 has resulted in le vith management goals inlcuding the use of industrial standards for i		ance that are consister
in management goals intodaing the doc of madethal standards for t	iddolita; iddddo.	
		_
		, ,
3. Pick the basic implementing assumption from the l	st. ☐ Major positive impact ☐ Minor positive impact ☐	☐ Minor negative impact ☐ Major negative impact
	No net impact	
4. Describe the nature and status of implementation		ess.
Experience has demonstrated that this program is both successful a	nd cost-effective.	

			Issue	origin	🛮 Hazard analysis 🔻 Id	entification Team
1.	Issue(s)	ned wastened and day	ing / analta			
losc	B. Hazmat trans	port - prolonged periods of driv	ing/onsite			
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<u> </u>	Facus graves	☐ Emergency Management	□ Eiro Protection		☑ Occupational Safety	
	Focus group	☐ Environmental Protection		Oversial		
2.	is there a ne	cessary standard which a	applies to this is	ssue?		YES NO
		•			yes, continue; otherv	
					, ,	
3.	Necessary s	tandard(s)				
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:			•			
4.	Are there an	aspects of these neces	sarv standard(s)	which	do not add value?	YES NO
	7	,,	,		f yes, continue; other	
						-
5.	Description	of non-value added aspec	cts of necessary	y stand	lard(s).	
			•			
<u> </u>			· · · · · · · · · · · · · · · · · · ·			
					•	
6.		of risk associated with th				YES NO
pei	tormance goa	ls assuming compliance	with applicable		=	
					If no continue; others	vise skip to 12.
		_				
7.	Is there a no	n-required external stand	ard which applie			YES NO
				lf	yes, continue; otherw	rise skip to 10.

8. External sufficient standard citation	
49 CFR 395.3 (Maximum driving & on-duty time - not required onsite)	
9. Is the level of risk associated with the issue(s) consistent with	X YES NO
management performance goals assuming compliance with the above	<u> </u>
(non-statutory) external standard?	nue; otherwise skip to 12.
10. Is an internal standard required to attain a level of risk consistent with	
management performance goals?	YES NO
11. Describe nature and status of internal sufficient standard.	
	•
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12. Describe how the levels of risk and cost are consistent with managem	ent performance goals.
Past adherance to the internal standard in #11 has resulted in levels of ES&H and cost perfo	
with management goals inlouding the use of industrial standards for industrial issues.	
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13. Pick the basic implementing assumption from the list. Major positive implementation	pact
☐ Minor positive im	oact
No net impact No	
44 Describe the nature and status of involvementation includes and office	*****
14. Describe the nature and status of implementation including cost-effect	ctiveness.
For foreign temporary temporary temporary to the second of	una alta nagela ferana la electrica
For "onsite" transportation issues, it is assumed that access is restricted in a way which remo	
For "onsite" transportation issues, it is assumed that access is restricted in a way which remo considered "in commerce" per DOT requirements. If not, the standards for the analogous "off	

	Issue origin	★ Hazard analysis	Identification Team
1. Issue(s)			
081C. Hazardous material transport - spills and chemical rele	eases		
Focus group ☐ Emergency Management ☐ Fire Pr ☑ Environmental Protection ☐ Management		☐ Occupational Sant ☐ Badiation Protect	
E Entrollier (totalier E manag	jonijent a o voloigi	Tradiction rotoe	Alon .
2. Is there a necessary standard which applies to	o this issue?		X YES NO
		yes, continue; oth	
		yes, continue, ou	rerwise skip to o.
3. Necessary standard(s)			
CERCLA/SARA 42 USC 6901 et seq.			
40 CFR 116 - 117			
40 CFR 300 40 CFR 302			
40 CFR 311			
40 CFR 355			
49 CFR 172 Subpart G 35 IAC Subchapter H, Subpart D			•
35 IAC 808- 809			
			ļ
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			•
4. Are there any aspects of these necessary star	• •		
		i yes, continue, oi	therwise skip to 6.
5. Description of non-value added aspects of no	ecessarv stand	ard(s)	
o. Description of non-value added appeals of no	cococary ctarre	<u> </u>	
	<u> </u>		
6. Is the level of risk associated with the issue(s) consistent v	vith management	
performance goals assuming compliance with app			YES NO
•		If no continue; otl	herwise skip to 12.
			-
7. Is there a non-required external standard which	h applies to th	is issue?	YES NO
			nerwise skip to 10.

8. External sufficient standard citation	
9. Is the level of risk associated with the issue(s) consistent with	YES NO
management performance goals assuming compliance with the above (non-statutory) external standard? If no continue; other in the continue is t	nerwise skin to 12
ii iio oonanae, oa	ici wise skip to 12
10. Is an internal standard required to attain a level of risk consistent with	□ VEC □ NO
management performance goals?	YES NO
11. Describe nature and status of internal sufficient standard.	
	4
·	
12. Describe how the levels of risk and cost are consistent with management per Continuation of the current program will provide an appropriate level of protection at an acceptable cos	
above laws and regulations through the current program will ensure high level of protection of the enviro	onment. The level of
risk is consistent with management performance goals because manaegement expects to use industri industrial issues. This is an industrial issue and the solution chosen is an industrial solution.	ial solutions for
industrial bodos. This is an industrial losses and the coldinal closes in to an industrial coldinal.	
	•
13. Pick the basic implementing assumption from the list. Major positive impact	Minor negative impact
☐ Minor positive impact ☐ ☑ No net impact	Major negative impact
14. Describe the nature and status of implementation including cost-effectivenes	ss
The requirements identified in #3 have proven to be both successful and cost-effective.	

		Issue origin 🛛 Hazard analysis 🔲 Ider	ntification Team
1.	lssue(s)		
		s - bioelectric implants	
	. Magnetic fields		
084	. Magnetic fields	s - high magnetic fields	
1			
l	Focus group	☐ Emergency Management ☐ Fire Protection ☐ Occupational Safety	
		☐ Environmental Protection ☐ Management & Oversight ☐ Radiation Protection	
2.	is there a ne	cessary standard which applies to this issue?	YES 🛮 NO
		If yes, continue; otherwis	
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3.	Necessary s	tandard(s)	
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		_	
4.	Are there any	y aspects of these necessary standard(s) which do not add value?	YES NO
		If yes, continue; otherwi	ise skip to 6.
5.	Description o	of non-value added aspects of necessary standard(s).	
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c	le the level o	of risk associated with the issue(s) consistent with management	
6. per		Is assuming compliance with applicable necessary standards?	YES 🛮 NO
hen	goal	If no continue; otherwise	ee ekin to 12
		is no continue; otherwis	se skip (0 12.
7.	Is there a no	n-required external standard which applies to this issue?	YES NO
		If yes, continue; otherwis	e skip to 10.

8. External sufficient standard citation	
ACGIH TLV for static magnetic fields	
9. Is the level of risk associated with the issue(s) consistent with	X YES NO
management performance goals assuming compliance with the above	
(non-statutory) external standard? If no continue; oth	erwise skip to 12.
10. Is an internal standard required to attain a level of risk consistent with	YES NO
management performance goals?	□ 1E9 □ NO
11. Describe nature and status of internal sufficient standard.	
71. Describe nature and status of internal sufficient standard.	
12. Describe how the levels of risk and cost are consistent with management per	ormance goals.
Past adherance to the standard in #8 has resulted in levels of ES&H and cost performance that are con	
management goals inlouding the use of industrial standards for industrial issues. The limit regarding ca	•
appropriate. By coincidence, it appears that the whole body exposure limit is useful to control rotational ferromagnetic tools. Although the limits for direct biological action are clearly overly-conservative, Ferromagnetic tools.	
potential for some of the highest personnel exposures of any industry and #8 represents the only gene	
consensus standard for static magnetic magnetic fields.	
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<u> </u>	
13. Pick the basic implementing assumption from the list. Major positive impact	Minor negative impact
Minor positive impact	Major negative impact
No net impact	
14. Describe the nature and status of implementation including cost-effectivenes	
Fermilab currently complies with #8 above as implemented by ES&H Manual Chapter 5062.2. Given the	
regarding direct biological effects, it is assumed that the associated exposure limits can be used as gu absolute limits. In fact, the cited standard indicates that the values should be used as guides and not	
line between safe and dangerous levels. Experience has demonstrated that this program is both succe	
cost-effective.	
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1.	Issue(s)	Issue origin 🛮 Hazard analysis 🗀 Ider	tification Team
		dling - chemical spills	
	. Material Harian	ding one mode opino	
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l			
<u> </u>	· · · · · · · · · · · · · · · · · · ·		
	Focus group	☐ Emergency Management ☐ Fire Protection ☑ Occupational Safety	
		☐ Environmental Protection ☐ Management & Oversight ☐ Radiation Protection	
2.	is there a no	necessary standard which applies to this issue?	YES NO
		If yes, continue; otherwis	
		n yes, conditue; otherwis	se skip to 6.
3.	Necessary s	standard(s)	
	CFR 1910.120 CFR 1910.1200		
	OFR 1910.1200 OFR 1910.176	·	!
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4.	Are there an		YEŞ 🛛 NO
		If yes, continue; otherw	ise skip to 6.
5.	Description	of non-value added aspects of necessary standard(s).	
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	•		
6.	Is the level	of risk associated with the issue(s) consistent with management	AVEC ELIO
per		pals assuming compliance with applicable necessary standards?	YES NO
		If no continue; otherwis	se skip to 12.
			-
7	le thoro o	non-required external standard which applies to this issue?	TVEC TINO
7.	is uitle a fi	<u> </u>	YES NO
		If yes, continue; otherwis	e skih in in

8. External sufficient standard citation	
9. Is the level of risk associated with the issue(s) consistent with	YES NO
management performance goals assuming compliance with the above	
(non-statutory) external standard? If no contin	ue; otherwise skip to 12
10. In an internal atandard required to attain a level of rick consistent with	
10. Is an internal standard required to attain a level of risk consistent with management performance goals?	☐ YES ☐ NO
dd. Danaille nature and status of internal sufficient standard	
11. Describe nature and status of internal sufficient standard.	
12. Describe how the levels of risk and cost are consistent with management	ent performance goals
Past adherance to the statutory requirements in #3 has resulted in levels of ES&H and cost powith management goals inleuding the use of industrial standards for industrial issues.	
	•
	•
13. Pick the basic implementing assumption from the list. Major positive imp	act Minor negative impact
☐ Minor positive imp	eact Major negative impact
No net impact No	
14. Describe the nature and status of implementation including cost-effec	tivanace
Experience has demonstrated that this program is both successful and cost-effective.	
	÷

If yes, continue; otherwise skip to 10.

				leeua	origin	Hazard analysis □ I	dentification Toom
1.	issue(s)			15540	o. igiii	M Hazard analysis []	dentification realit
087	'. Material handli	ng - cranes and hoists			***		
l							
	Focus group	☐ Emergency Manage	ment	tection		☑ Occupational Safet	v
					Oversigl	nt Radiation Protection	
2.	Is there a ne	cessary standard w	hich applies to	this is	ssue?		YES NO
					If	yes, continue; other	wise skip to 6.
						• ,	
3.	Necessary s	tandard(s)					
		verhead and gantry crar				 	
29	CFR 1910.180 (C	rawler locomotive and tre	uck cranes)				
1							
	•						
	Ave there on	y aspects of these i	annonner otone	lord(o)	which	do not odd voluo?	T VEC BUILD
4.	Are there any	y aspects of these i	secessary stant	iaiu(s)		f yes, continue; othe	YES NO
					•	yes, continue, othe	iwise skip to o.
5.	Description (of non-value added	senecte of nec	raecarı	v etand	lard(e)	
".	Description	Ji non-value added	aspects of field	ocesai ;	y stant	1010/3/.	
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<u> </u>							
6.		of risk associated w					YES NO
pei	formance goa	ls assuming compli	ance with appl	licable	neces	=	
						If no continue; other	wise skip to 12.
7.	is there a no	n-required external	standard which	applie	es to th	nis issue?	X YES NO

8. External sufficient standard citation		
ANSI B30.20 - 1990 (Overhead and gantry cranes) ANSI B30.5 - 1989 (Mobile and locomotive cranes)	•	
MIGH B30.5 - 1969 (Wobile and locomotive cranes)		
		•
		<u> </u>
9. Is the level of risk associated with the issue(s) consistent w		X YES NO
management performance goals assuming compliance with the a (non-statutory) external standard?		
(non-statutory) external standard:	If no continue; o	therwise skip to 12
10. Is an internal standard required to attain a level of risk con	nsistent with	YES NO
management performance goals?		
11. Describe nature and status of internal sufficient standard.		
12. Describe how the levels of risk and cost are consistent wit		
Past adherance to the statutory requirement in #3 and the external standards in performance that are consistent with management goals inlouding the use of inc		
external standards provide guidance which is more complete and current than t		
ČFR 1910.		•
13. Pick the basic implementing assumption from the list.	or positive impact	Minor negative impact
∐ Min	or positive impact [net impact	Major negative impact
NO I	net impact	
14. Describe the nature and status of implementation includin	a cost-affectiven	266
Experience has demonstrated that this program is both successful and cost-ef		
Experience has demonstrated that the program is both successful and cost-of		
		1

If yes, continue; otherwise skip to 10.

1.	Issue(s)		Issue	origin	Hazard analysis □	Identification Team
	. Material handling - elevators u	sed for hazardous ma	aterial			
	-					
		•				
<u> </u>	- 65		D. ddi		7 0	
l		Management ☐ Fintal Protection ☐ M		Oversigh	✓ Occupational Safet t ☐ Radiation Protection	
		···				
2.	Is there a necessary star	dard which applic	es to this is	ssue?		YES NO
				if	yes, continue; othe	rwise skip to 6.
_	N					
3.	Necessary standard(s)		<u> </u>			
						ĺ
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						į
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4.	Are there any aspects of	these necessary	standard(s)	which	do not add value?	YES NO
				If	yes, continue; oth	erwise skip to 6.
5.	Description of non-value	added aspects of	of necessary	y stand	ard(s).	
						ĺ
			•			
					·	
6.	Is the level of risk assoc					ITIVES IN NO
per	formance goals assuming	compliance with	applicable		=	YES NO
			•		If no continue; othe	rwise skip to 12.
7.	is there a non-required e	xternal standard v	which applie	es to th	is issue?	YES X NO

8. External sufficient standard citation
9. Is the level of risk associated with the issue(s) consistent with ☐ YES ☒ NO
management performance goals assuming compliance with the above
(non-statutory) external standard? If no continue; otherwise skip to 12
10. Is an internal standard required to attain a level of risk consistent with ▼YES □ NO
management performance goals?
44 Describe nature and atatus of internal sufficient atandard
11. Describe nature and status of internal sufficient standard. Fermilab ES&H Manual chapter 5032.3, Transporting Gases in Building Elevators, has been written and in force for several
years. It was written to specifically address the hazards associated with transporting cryogenic dewars and room
temperature gas cylinders in Wilson Hall elevators and to minimize the potential risks.
12. Describe how the levels of risk and cost are consistent with management performance goals.
Past adherance to the internal standard in #11 has resulted in levels of ES&H and cost performance that are consistent with management goals inlouding the use of industrial standards for industrial issues.
Interruption goals into date of industrial standards for industrial isodess.
13. Pick the basic implementing assumption from the list. Major positive impact Minor negative impact
Minor positive impact Major negative impact
No net impact ■ No net impact ■ No net impact ■ No net impact ■ No net impact ■ No net impact ■ No net impact No
14. Describe the nature and status of implementation including cost-effectiveness.
The internal standards identified in #11 have proven to be both successful and cost-effective.

		Issue origin 🛛 Hazard analysis 🗖 Identification Team
1.	Issue(s)	
089	. Material handli	ng - falling objects
1		
-	Engue group	□ Emergency Management □ Eiro Protection
ļ	Focus group	☐ Emergency Management ☐ Fire Protection ☐ Occupational Safety ☐ Environmental Protection ☐ Management & Oversight ☐ Radiation Protection
2.	Is there a ne	ecessary standard which applies to this issue?
		If yes, continue; otherwise skip to 6.
3.	Necessary s	
	CFR 1910 Subpar	
29 (JER 1910 Subpar	t N (Materials Handling and Storage)
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		ł
•		
	·	
4.	Are there any	y aspects of these necessary standard(s) which do not add value?
		If yes, continue; otherwise skip to 6.
5.	Description of	of non-value added aspects of necessary standard(s).
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		l l
		
e	le the level	of rick accordant with the iscusic consistent with management
6. per		of risk associated with the issue(s) consistent with management IS assuming compliance with applicable necessary standards?
	3	If no continue; otherwise skip to 12.
7.	is there a no	on-required external standard which applies to this issue?
		If yes, continue; otherwise skip to 10.

8. External sufficient standard citation	
<u> </u>	<u></u>
9. Is the level of risk associated with the issue(s) consistent with	☐ YES ☐ NO
management performance goals assuming compliance with the above	
(non-statutory) external standard? If no continue	; otherwise skip to 12
10. Is an internal standard required to attain a level of risk consistent with	
management performance goals?	☐ YES ☐ NO
44 Passella materia and atatus of internal cufficient atondard	
11. Describe nature and status of internal sufficient standard.	
12. Describe how the levels of risk and cost are consistent with management	
Past adherance to the statutory requirements in #3 has resulted in levels of ES&H and cost performance to the statutory requirements in #3 has resulted in levels of ES&H and cost performance to the statutory requirements in #3 has resulted in levels of ES&H and cost performance to the statutory requirements in #3 has resulted in levels of ES&H and cost performance to the statutory requirements in #3 has resulted in levels of ES&H and cost performance to the statutory requirements in #3 has resulted in levels of ES&H and cost performance to the statutory requirements in #3 has resulted in levels of ES&H and cost performance to the statutory requirements in #3 has resulted in levels of ES&H and cost performance to the statutory requirements in #3 has resulted in levels of ES&H and cost performance to the statutory requirements in #3 has resulted in levels of ES&H and cost performance to the statutory requirements in #3 has resulted in levels of ES&H and cost performance to the statutory requirements in #3 has resulted in levels of ES&H and cost performance to the statutory requirements in #3 has resulted in levels of ES&H and cost performance to the statutory requirements in #3 has resulted in levels of ES&H and cost performance to the statutory requirements in #3 has resulted in levels of ES&H and cost performance to the statutory requirements in the statutory requ	rmance that are consistent
with management goals inlcuding the use of industrial standards for industrial issues.	
13. Pick the basic implementing assumption from the list. Major positive impact	☐ Minor negative impact ☐ Major negative impact
✓ No net impact	i 🔟 Major negative impaci
THE THE HOLLINDAGE	
14. Describe the nature and status of implementation including cost-effectiv	eness.
Experience has demonstrated that this program is both successful and cost-effective.	
The state of the s	
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	lssue(s)	I ssue origin 🗵 Hazard analysis 🔲 lo	dentification Team
1.		g - forklift operation	
1090	. Material Handing	g - Torkillt operation	
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ı	Focus group	☐ Emergency Management ☐ Fire Protection ☐ Occupational Safety	
	<u>U</u>	☐ Environmental Protection ☐ Management & Oversight ☐ Radiation Protection	1
2.	Is there a nec	essary standard which applies to this issue?	X YES NO
		If yes, continue; other	wise skip to 6.
3.	Necessary sta	andard(s)	
29 C	CFR 1910.178		
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4.	Are there any	aspects of these necessary standard(s) which do not add value?	YES X NO
		If yes, continue; other	rwise skip to 6.
5.	Description of	non-value added aspects of necessary standard(s).	
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l		·	
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6.		risk associated with the issue(s) consistent with management	YES NO
per	formance goals	assuming compliance with applicable necessary standards?	
		If no continue; other	wise skip to 12.
7.	Is there a non	-required external standard which applies to this issue?	☐ YES ☐ NO
		If yes, continue; other	
		,,	

8. External sufficient standard citation		
Is the level of risk associated with the issue(s) consistent management performance goals assuming compliance with the		YES NO
(non-statutory) external standard?		otherwise skip to 12
10. Is an internal standard required to attain a level of risk o	onsistent with	☐ YES ☐ NO
management performance goals?		
11. Describe nature and status of internal sufficient standar	<u>d.</u>	
12. Describe how the levels of risk and cost are consistent	with management	performance goals.
Past adherance to the statutory requirement in #3 has resulted in levels of E	S&H and cost perform	
with management goals inlouding the use of industrial standards for industria	ii issues.	
	Vaior positivo impact	Minor negative impact
	Minor positive impact	☐ Major negative impact
<u>M</u>	No net impact	
14. Describe the nature and status of implementation include	dina cost-effective	ness.
Experience has demonstrated that this program is both successful and cost		
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1.	lssue(s)	Issue origin ☐ Hazard analysis ☐ Identification Team
		ng - hazardous tools equipment and machinery
109	i. Materiai nandii	ig - nazardous tools equipment and machinery
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i		
Ь		
	Focus group	☐ Emergency Management ☐ Fire Protection ☑ Occupational Safety
		☐ Environmental Protection ☐ Management & Oversight ☐ Radiation Protection
2.	Is there a no	ecessary standard which applies to this issue?
		If yes, continue; otherwise skip to 6.
_		
3.	Necessary s	standard(s)
	CFR 1910.94	
	CFR 1910.106	
	CFR 1910.108	
	CFR 1910.215	
	CFR 1910.231	
29	CFR 1910.242-24	4
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4.	Are there an	y aspects of these necessary standard(s) which do not add value?
		If yes, continue; otherwise skip to 6.
_	Description	of non-volve added concets of necessary standard(s)
5.	Description	of non-value added aspects of necessary standard(s).
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6.	is the level	of risk associated with the issue(s) consistent with management
		Ils assuming compliance with applicable necessary standards?
•	- 3	If no continue; otherwise skip to 12.
		ii no continue, otherwise skip to 12.
7.	Is there a no	on-required external standard which applies to this issue?
		If yes, continue; otherwise skip to 10.
		,,

8. External sufficient standard citation	
9. Is the level of risk associated with the issue(s) consistent with	YES NO
management performance goals assuming compliance with the above	
(non-statutory) external standard? If no continue; o	therwise skip to 12
10. Is an internal standard required to attain a level of risk consistent with	
management performance goals?	☐ YES ☐ NO
44 Describe nature and atatus of internal sufficient atanders	
11. Describe nature and status of internal sufficient standard.	
	:
12. Describe how the levels of risk and cost are consistent with management per Past adherance to the statutory requirements in #3 has resulted in levels of ES&H and cost performance.	
with management goals inlouding the use of industrial standards for industrial issues.	ance mai are consistent
	•
13. Pick the basic implementing assumption from the list. Major positive impact Minor positive impact] Minor negative impact] Maior negative impact
No net impact ■ No net impact	
14. Describe the nature and status of implementation including cost-effectivene	
Hazards associated with hazardous tools, equipment, and machinery are known and associated risk through an on-going inspection program. Experience has demonstrated that this program is both succost-effective.	

1.	Issue(s)			Issue	origin	Hazard analysis	☐ Identification	Team
	. Material handli	na - liftina oh	iects					
032	. Waterial Hariam	ing mining oc	,,0010					
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			- 14					
	Focus group		ncy Management		Oversia			
		C CHAILOTT	Tieritas i Toteetiei	- Indinagonioni d	Oversign	Tradiation 1 Total	501011	
2.	le there e ne	coccary el	andard which	applies to this i	eeuo2		NE VEC.	I NO
۷.	is there a ne	cessary s	andard Willen	applies to this i				NO
					IT	yes, continue; o	tnerwise skip	to 6.
3.	Necessary s	tandard(s)						
	CFR 1910.184 (S							
23	JI II 1910.104 (O	iii igo <i>j</i>						
								l
 								
								j
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		•						
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	Ave there en	, concete	of those mose	ocary standard(a)	which	do not add value	2	NO.
4.	Are there any	y aspecis	or mese nece	ssary standard(s)		f yes, continue;		
					•	yes, commue,	otherwise skip	
5.	Description of	of non-valu	ue added asn	ects of necessar	v stanc	lard(s)		
".	- Description (accor dop		y otalic			
							•	
								i
				<u> </u>				
6.				the issue(s) cons			YES E	NO
per	Tormance goal	is assumii	пу сотриалс	e with applicable	neces	=		
						If no continue; o	inerwise skip	το 12.
7.	Is there a no	n-required	external stan	dard which appli			XYES [
					lf	yes, continue; o	therwise skip	to 10.

8. External sufficient standard citation		
ASME B30.20 - 1993 (Below the hook lifting devices) ANSI B30.9 - 1990 (Slings)		
ANSI B30.10 - 1993 (Hooks)		
9. Is the level of risk associated with the issue(s) consisten		XYES NO
management performance goals assuming compliance with the state of the		
(non-statutory) external standard?	If no continue; othe	rwise skip to 12
10. Is an internal standard required to attain a level of risk	consistent with	YES NO
management performance goals?		<u> </u>
11. Describe nature and status of internal sufficient standa	ard.	
Journal of the control o		
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40 Describe how the levels of with and seek and seek and		
12. Describe how the levels of risk and cost are consistent Past adherance to the statutory requirement in #3 and the standard in #8 has a standard in #8 ha		
performance that are consistent with management goals inlouding the use		
requirement in #3 makes no mention of "below the hook lifting devices" which	ch are widely constructed and	used at the Lab.
ASME B30.20 in #8 is the generally-accepted industry standard for lifting fi		
guidance provided in the other external standards is more complete and cu	irrent than the associated sta	tutory requirements
in 29 CFR 1910.		
·		
13. Pick the basic implementing assumption from the list.	Major positive impact	nor negative impact
13. Pick the basic implementing assumption from the list.	Minor positive impact M	ajor negative impact
	No net impact	
14. Describe the nature and status of implementation incl	uding cost-effectiveness	ı
Experience has demonstrated that this program is both successful and co		
		:

1.	Issue(s)			Issue	origin	Hazard analysis	☐ Identification Team
		ng - moving objects					
<u> </u>							
1	Focus group	☐ Emergency Manage			Overeiel	✓ Occupational state of the control of the cont	
		Environmental Flot	ection Li Manage	mem a	Oversigi	IL LI Hadiation Flot	ection
2.	Is there a ne	cessary standard w	hich applies to	this is	ssue?		YES NO
		,				ves. continue: a	therwise skip to 6.
						, ,	
3.	Necessary s						
29 C	CFR 1910 Subpar	t N (Materials Handling	and Storage)				
							-
٠							
						-	
A	Are there an	aspects of these	nacassary stand	lard/e\	which	do not add value	? YES NO
4.	Are there any	aspects of these	necessary stanc	iai u(s)			otherwise skip to 6.
	•					• ,	,
5.	Description of	of non-value added	aspects of nec	cessary	, stand	lard(s).	
1							
6.	is the level	of risk associated v	vith the issue/s)	Consi	stent v	vith management	
		is assuming compl					YES NO
						If no continue; o	otherwise skip to 12.
7.	is there a no	n-required external	standard which	applie	s to th	nis issue?	YES NO
					lf	yes, continue; o	therwise skip to 10.

3. External sufficient standard citation	<u> </u>	
. Is the level of risk associated with the issue(s) consiste		☐ YES ☐ NO
nanagement performance goals assuming compliance with t non-statutory) external standard?		otherwise skip to 1
		omerwise skip to 1
0. Is an internal standard required to attain a level of risk	consistent with	TIVES TINO
nanagement performance goals?		YES NO
1. Describe nature and status of internal sufficient stand	ard.	
		_
Describe how the levels of risk and cost are consistent ast adherance to the statutory requirement in #3 has resulted in levels of		
rith management goals inlouding the use of industrial standards for indus		
		· · · · · · · · · · · · · · · · · · ·
3. Pick the basic implementing assumption from the list.	Major positive impact	Minor negative impac
	No net impact	☐ Major negative impac
4. Describe the nature and status of implementation inc		ness.
experience has demonstrated that this program is both successful and continuous	ost-effective.	

		Issue	origin	Hazard analysis □ I	dentification Team
1.	Issue(s)				
094	Material handling - storage and handling of toxic materia	ls.			
					· i
<u> </u>					
	Focus group	rotection		☑ Occupational Safet	v
	☐ Environmental Protection ☐ Manag		Oversig		
					· · · · · · · · · · · · · · · · · · ·
2.	is there a necessary standard which applies to	o this is	ssue?		YES NO
			11	yes, continue; other	
				• , ,	•
3.	Necessary standard(s)				
29 (CFR 1910.176		-		
29 (CFR 1910.1200				
					1
l					
					·
			•		
А	Are there any aspects of these necessary star	ndard(e)	which	do not add value?	YES NO
4.	Are there any aspects of these necessary star	iaaia(3)		If yes, continue; othe	
			'	, 500, 0011111111110, 011110	
5.	Description of non-value added aspects of n	ecessarı	v etano	lard(s)	
<u>ی.</u>	Description of non-value added aspects of it		June		
					ľ
	,				
1					
<u> </u>					
6.					X YES NO
per	erformance goals assuming compliance with ap	plicable	neces		<u></u>
				If no continue; other	wise skip to 12.
7.	Is there a non-required external standard whic	h applie	s to t	his issue?	YES NO
	•	• •		yes, continue; other	

B. External sufficient standard citation	
. Is the level of risk associated with the issue(s) consistent with nanagement performance goals assuming compliance with the above	YES NO
non-statutory) external standard? If no continue; oth	erwise skip to ⁻
0. Is an internal standard required to attain a level of risk consistent with nanagement performance goals?	YES NO
1. Describe nature and status of internal sufficient standard.	
2. Describe how the levels of risk and cost are consistent with management perf	ormance goals.
ast adherance to the statutory requirements in #3 has resulted in levels of ES&H and cost performance and the statutory requirements in #3 has resulted in levels of ES&H and cost performance with management goals inlouding the use of industrial standards for industrial issues.	
	•
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3. Pick the basic implementing assumption from the list. ☐ Major positive impact ☐ M Minor positive impact ☐ M No net impact	Minor negative impa Major negative impa
No het impact	
4. Describe the nature and status of implementation including cost-effectivenes	s.
experience has demonstrated that this program is both successful and cost-effective.	
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4 (0000/0)	Issue origin	🛚 Hazard analysis 🔻 I	dentification Team
Issue(s) 095A. Material handling - transportation / offsite			
שפסא. ואמנפוזמו המחשוווין - נומוואףטונמנוטוו / טוואנפ 			
Footion of the Company Management of the Company	rotootics	M Occupational Cofet	
Focus group ☐ Emergency Management ☐ Fire P☐ Environmental Protection ☐ Management			
	<u> </u>		
2. Is there a necessary standard which applies t	o this issue?		¥YES □ NO
		yes, continue; other	
	rı	yos, continue, other	mise skih m 0.
3. Necessary standard(s)			
49 CFR 177.834 Subpart B			
29 CFR 1910.176			
29 CFR 1910.178			1
			ĺ
		•	
4. Are there any aspects of these necessary sta			☐ YES 🔀 NO
		f yes, continue; othe	rwise skip to 6.
B. Bassintian of management added according		daud(a)	
5. Description of non-value added aspects of n	ecessary stand	iaro(s).	
,			
	/-\		
6. Is the level of risk associated with the issue(performance goals assuming compliance with ap			¥YES □ NO
performance godie assuming compilance with ap	Privable lieces	sary standards? If no continue; other	
		n no continue; other	wise skip to 12.
7. Is there a non-required external standard which			YES NO
	lf	yes, continue; other	wise skip to 10.

8. External sufficient standard citation	
9. Is the level of risk associated with the issue(s) consistent with	YES NO
management performance goals assuming compliance with the above	<u> </u>
(non-statutory) external standard? If no continue; o	therwise skip to 12
10. Is an internal standard required to attain a level of risk consistent with management performance goals?	YES NO
management performance goals?	
11. Describe nature and status of internal sufficient standard.	
	4.
In the second of	
12. Describe how the levels of risk and cost are consistent with management per per per per per per per per per per	
with management goals inlcuding the use of industrial standards for industrial issues.	
13. Pick the basic implementing assumption from the list. ☐ Major positive impact ☐ Minor positive impact ☐	Minor negative impact
☑ No net impact	J Major negative impact
14. Describe the nature and status of implementation including cost-effectivene	ess.
Experience has demonstrated that this program is both successful and cost-effective.	
	!

	Issue origin 🗷 Hazard analysis 🗖 Identificatio	n Team
1. Issue(s)		
096. NIR - intense ligh	nt sources	
		1
Focus group	☐ Emergency Management ☐ Fire Protection ☐ Occupational Safety	
1 ocuş, group	☐ Environmental Protection ☐ Management & Oversight ☐ Radiation Protection	
2. Is there a nece	essary standard which applies to this issue?	
Z. 15 there a nece		
	łf yes, continue; otherwise ski	p to 6.
O Necessary stee	andord(a)	
3. Necessary sta	angarg(s)	
29 CFR 1910.133	a and food mustantian)	
29 CFR 1926.102 (Eye	e and race protection)	
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4. Are there any	aspects of these necessary standard(s) which do not add value?	NO 🗵
-	If yes, continue; otherwise sk	
		-
5. Description of	non-value added aspects of necessary standard(s).	
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C la the lavel of	rick accompand with the iccurs(c) consistent with management	
	risk associated with the issue(s) consistent with management assuming compliance with applicable necessary standards?	□ NO
periormance yours		n to 10
	lf no continue; otherwise ski	p to 12.
7. Is there a non-	-required external standard which applies to this issue?	□ NO
	If yes, continue; otherwise skip	to 10.

8. External sufficient standard citation	
9. Is the level of risk associated with the issue(s) consistent with	☐ YES ☐ NO
management performance goals assuming compliance with the above (non-statutory) external standard? If no continue; other	
in the continue, canel	wice only to 12.
10. Is an internal standard required to attain a level of risk consistent with management performance goals?	YES NO
11. Describe nature and status of internal sufficient standard.	
]
12. Describe how the levels of risk and cost are consistent with management performance.	rmance noale
It is assumed that incoherent (i.e., non-laser) sources are to be considered here. The primary source of	intense light at
Fermilab is sunlight and the major associated concern is glare. This is well addressed by the two OSHA e protection standards noted in #3 above. Fermilab has had a compliant and effective eye protection programmer.	am in place for
many years which includes provision of occupationally-required lens tinting. Incidents associated with ir sources have been virtually non-existent except, perhaps, from glare associated with motor vehicle oper	
have not been frequent or costly). Therefore, the ongoing level of risk associated with this issue is judge management performance goals inlouding the use of industrial standards for industrial issues.	ed to fall within
13. Pick the basic implementing assumption from the list. Major positive impact Mineral Major positive impact Mineral Major positive impact Major positive	nor negative impact
☐ Minor positive impact ☐ Ma ☑ No net impact	ijor negative impact
14. Describe the nature and status of implementation including cost-effectiveness. As noted above, Fermilab has a long-standing eye protection program which includes provision of occup	
lens tinting. This program is described in Fermilab ES&H Manual Chapter 5102. Eye protection competiti is provided only when occupationally-indicated. Experience has demonstrated that this program is both cost-effective.	vely procured and

1. Issue(s)	Issue origin [Hazard analysis ■	☐ Identification Team
097. NIR - lasers			
037. Milt - 123613			
Focus, group ☐ Emergency Management ☐ Fire Pr☐ Environmental Protection ☐ Manag		Occupational S Radiation Prote	
2. Is there a necessary standard which applies to	this issue?		X YES NO
	If	yes, continue; of	therwise skip to 6.
3. Necessary standard(s)			
29 CFR 1926.54 (Nonionizing radiation)			
29 CFR 1910.269(w)(8) (Electric power)			1
4. Are there any aspects of these necessary stan	idard(s) which d	do not add value	? XYES NO
			therwise skip to 6.
5. Description of non-value added aspects of ne	acassary standa	ard(e)	
29CFR1926.54 (Nonionizing radiation) was apparently written harmless intensities at longer wanvelengths. For example, di microwatt per cm2 and incidental viewing is prohibited above 1 wavelengths exceeding 0.55 micrometers for the former and 1 capable of causing eye injury within 3E4 seconds (8 hours) of 0 interpretations acknowledge this shortcoming, the Agency has minimis violation. 29CFR1910.269(w)(8) invokes the use of 29	n for visible waveler frect staring is proh milliwatt per cm2. .18 micrometers fo CONTINUOUS EXF is noted they will co	ngth lasers. As such ibited where intensiti This includes hazard or the latter. Hazard POSURE. Although (es may exceed 1 d class 1 lasers for class 1 lasers are not OSHA standard
Is the level of risk associated with the issue(s performance goals assuming compliance with app	olicable necessa	ary standards?	☐ YES ☑ NO therwise skip to 12.
			·
7. Is there a non-required external standard which			MYES □ NO herwise skip to 10.

8. External sufficient standard citation		
ANSI Z136.1-1993 (Lasers)		
9. Is the level of risk associated with the issue(s) consistent		YES NO
management performance goals assuming compliance with the (non-statutory) external standard?		
(non-statutory) external standard:	If no continue;	otherwise skip to 12
10. Is an internal standard required to attain a level of risk co	nsistent with	☐ YES ☐ NO
management performance goals?		
11. Describe nature and status of internal sufficient standard.		
		·
12. Describe how the levels of risk and cost are consistent will The requirement cited in #3 above applies only to construction industries and a		
wavelengths or repetively-pulsed exposures. The standard cited in #8 provide		
nearly all workers can be repeatly exposed without adverse effect. This stand		
and repetitively-pulsed exposures. Past adherance to this standard has result		
that are consistent with management goals including the use of industrial stan	dards for industrial i	ssues.
13. Pick the basic implementing assumption from the list.	ajor positive impact	☐ Minor negative impact
	nor positive impact o net impact	☐ Major negative impact
14. Describe the nature and status of implementation includi	ng cost-effective	ness.
The current Fermilab laser safety policy is contained in ES&H Manual Chapter		
standard in #8. Experience has demonstrated that this program is both succe		
		·

If yes, continue; otherwise skip to 10.

	1		Issue	origin [🛚 Hazard analysis 🔲	Identification Team
1.	Issue(s) . NIR - radiofreq	uonov radiation				
030	. Nin - ladioneq	ucitcy radiation				
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L				_		
ı	Focus group	☐ Emergency Management	☐ Fire Protection		☑ Occupational Safe	ety
		☐ Environmental Protection	☐ Management & 6	Oversight	☐ Radiation Protection	on
2.	Is there a ne	ecessary standard which	applies to this is			YES NO
				lf y	yes, continue; othe	rwise skip to 6.
3.	Necessary s	tandard(e)				
		nionizing radiation)			· · · · · · · · · · · · · · · · · · ·	
		nionizing radiation)			4	
		(Telecommunications)				
29 (JFR 1910.269(s)	(Electric power)				
•						
L						
	Aug About on	of these mass.		biob d	le met edd velved	TVC BNO
4.	Are there any	y aspects of these neces	ssary standard(s)		yes, continue; other	YES NO
				•	yee, commue, em	orwide okip to o.
5.	Description (of non-value added aspe	ects of necessary	standa	rd(s).	
			· · ·			
			3			
L			, , , , , , , , , , , , , , , , , , , ,			
			-			
6.		of risk associated with t				YES X NO
per	tormance goa	ls assuming compliance	with applicable		-	····
				17	no continue; othe	rwise skip to 12.
-	la dhara a	on required external stane	lard which applic	o to thi	s iceuc?	MYEC THO

8. External sufficient standard citation	
ACGIH TLV for radiofrequency/microwave radiation	
9. Is the level of risk associated with the issue(s) consistent with	X YES NO
management performance goals assuming compliance with the above	
(non-statutory) external standard?	ıe; otherwise skip to 12.
10. Is an internal standard required to attain a level of risk consistent with	
management performance goals?	YES NO
11. Describe nature and status of internal sufficient standard.	
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	į
12. Describe how the levels of risk and cost are consistent with manageme	
The requirements cited in #3 above are based on ANSI C95.1-1966. Dependencies on wavelet	
presence of ground planes, and electrical shock potential were poorly understood and not acco	
been following the standard in #8 and this has resulted in levels of ES&H and cost performance management goals including the use of industrial standards for industrial issues. They are suff	
shocks and provide a safety factor of at least ten for reasonably well understood minor transien	
effects.	in Livi radiation (Bonavionar)
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	at Filating and the second
13. Pick the basic implementing assumption from the list. Major positive impa	act I Major negative impact
☑ No net impact	act
No net impact	
	•
14. Describe the nature and status of implementation including cost-effect	
We believe we are currently in compliance with the standard cited in #8 above. Experience has	demonstrated that this
program is both successful and cost-effective.	

If yes, continue; otherwise skip to 10.

1.	Issue(s)	·	Issue	origin	☑ Hazard analysis ☐ Id	entification Team
	. NIR - ultraviole	at light				
		violet radiation / sun exposure				
'~	. Themal-dida	violet idulation / dun exposure	•			
}						
<u> </u>						
	Focus group	☐ Emergency Management			Occupational Safety	
		☐ Environmental Protection	□ Management &	Oversig	ht Radiation Protection	
2.	le there a ne	ecessary standard which	annline to this is	20102		NE VEC HAG
۷.	is there a ne	cessary standard willen	applies to this is			YES NO
				lf	yes, continue; otherv	vise skip to 6.
3.	Necessary s	tandard(s)				
29 (CFR 1910.133(a)	(5) (Eye and face protection)				
		rt I Appendix B (PPE)				
		(Welding, cutting, brazing)				
		(1) (Eye and face protection)				
		(Ventilation and protection in	welding, cutting, braz	rina)		
	31 11 1020:000(u)	(vondador and protoculor in		9)		
Ī						-
4.	Are there an	y aspects of these nece	ssary standard(s)	which	do not add value?	YES NO
		•			f yes, continue; other	
				_	, , , , , , , , , , , , , , , , , , , ,	
				_		
5.	Description	of non-value added aspe	ects of necessary	stanc	lard(s).	
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L						
e	la tha lavat	of rick accordated with t	ha iceus(s) sere	etent .	with management	
6.		of risk associated with t				☐ YES 🔀 NO
per	iormance goa	ils assuming compliance	with applicable	neces	-	
					If no continue; otherv	vise skip to 12.
_			alamata and the second	_	-i- i	
7.	is there a no	on-required external stand	dard which applie	s to ti	nis issue?	¥YES □ NO

B. External sufficient standard citation ACGIH TLV for ultraviolet radiation	
9. Is the level of risk associated with the issue(s) consistent with management performance goals assuming compliance with the above (non-statutory) external standard?	YES NO
10. Is an internal standard required to attain a level of risk consistent with management performance goals?	YES NO
11. Describe nature and status of internal sufficient standard.	
12. Describe how the levels of risk and cost are consistent with management perf	ormanco goale
The requirements cited in #3 above provide adequate protection against ultraviolet radiation encountered oining and cutting operations. Compliant welding safety practices have been in place at Fermilab and, obeyed, have acceptably prevented the occurrence of harmful ultraviolet exposure effects. Since expultraviolet radiation also infrequently occurs in association with other types of operations (UV lamps for electronic applications), the requirements are not sufficient to preclude possible adverse effects. These activities are addressed by the standard cited in #8 above. Past adherance to the these standard has ES&H and cost performance that are consistent with management goals including the use of industrial industrial issues.	ed in electric metal except when not osure to incoherent r sterilization or se remaining resulted in levels of
I3. Pick the basic implementing assumption from the list. ☐ Major positive impact ☐ Minor positive impact ☐ Minor positive impact ☐ Minor positive impact	Ainor negative impac Aajor negative impac
4. Describe the nature and status of implementation including cost-effectivenes	s.
Given that even moderate exposures to sunlight exceed the standard cited in #8 above (~30 minutes at and the hazards are well-known and generally-accepted by most people, it is assumed that the exposuconsidered as guides, rather than absolute limits for typical sunlight exposures. In fact, the cited standered should be used as guides and not regarded as a fine line between safe and dangerous levels	re limits can be dard indicates that

caveat, Fermilab is currently in compliance with the standards cited in #3 and #8. Experience has demonstrated that this

program is both successful and cost-effective.

☐ YES 🔀 NO

If yes, continue; otherwise skip to 10.

		Issue	origin	☑ Hazard analysis ☐ Ide	ntification Team
1.	Issue(s)				
	ODH - cryogenic gas or liquid leaks				
	. ODH - cryogenic spills . ODH - gaseous argon or other detector gas				1
	ODH - leak of supplied gas				
	. Magnetic fields - quench effects				
	Focus group Emergency Management Fire	Protection		☑ Occupational Safety	
	☐ Environmental Protection ☐ Man	agement &	Oversigl	nt Radiation Protection	
2.	Is there a necessary standard which applies	to this is	ssue?	į	YES NO
			lf	yes, continue; otherwi	
				•	
3.	Necessary standard(s)				
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	And the second of these processes of			da mak add	
4.	Are there any aspects of these necessary st	andard(s)			YES NO
				f yes, continue; otherw	ise skip to 6.
_	Description of non-value added aspects of			laud(a)	
5.	Description of non-value added aspects of	necessary	stand	iaro(s).	
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6.	Is the level of risk associated with the issue	e(s) consi	stent v	vith management =	
	formance goals assuming compliance with a				YES X NO
-		-		If no continue; otherwi	se skip to 12.
				,	•
7.	Is there a non-required external standard wh	ich applie	s to th	nis issue?	YES NO

8. External sufficient standard citation	
9. Is the level of risk associated with the issue(s) consistent with	YES NO
management performance goals assuming compliance with the above (non-statutory) external standard?	; otherwise skip to 12
ii no continue	, otherwise skip to 12
10. Is an internal standard required to attain a level of risk consistent with	
management performance goals?	YES NO
11. Describe nature and status of internal sufficient standard.	
Fermilab ES&H Manual chapter 5064, Oxygen Deficiency Hazard, has been in force for over 15 years.	ears. It was developed to
specifically address the ODH hazards at Fermilab and to minimize the potential risks.	
12. Describe how the levels of risk and cost are consistent with management	
Past adherance to the internal standard in #11 has resulted in levels of ES&H and cost performar management goals. There have been very few, if any, injuries or illnesses stemming from activities	
of Fermilab's ODH program since its initiation.	and
·	
13. Pick the basic implementing assumption from the list. Major positive impact	☐ Minor negative impact
☐ Minor positive impact	☐ Major negative impact
☑ No net impact	
14. Describe the nature and status of implementation including cost-effective	eness.
This program is fully implemented, works well, and is a cost effective program. It is assumed that	ODH is the only significant
ES&H issue associated with "magnetic fields - quench effects." Experience has demonstrated the successful and cost-effective.	at this program is both
Sassosiai and oddi onodivo.	
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				ı	Issue	origin	☐ Hazard ana	lysis 🔀	Identification	Team
1.	Issue(s)									
10	5B. ODH - mech	anical refrigeration	i systems							
										1
<u> </u>		[Fig. 1]	Innarament	Cl Cina Duat	ootlon.		M Ossumation	anal Cafe		
	Focus group	☐ Emergency N☐ Environment				Oversigl				
2.	is there a no	ecessary stand	ard which	applies to	this is	ssue?			☐ YES	⊠ NO
	io more a m	Journal of the second		pp			yes, continu	e otho		
						14	yes, continu	ie, Othe	iwise skih	10 6.
3.	Necessary s	standard(s)								
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4.	Are there an	y aspects of t	hese neces	sary stand	ard(s)	which	do not add	value?	YES	□ NO
						ı	f yes, contin	ue; othe	erwise skip	to 6.
5.	Description	of non-value a	dded aspe	cts of nec	essary	/ stand	lard(s).			
				•						
	•									
1										
<u> </u>										
		of risk associa Ils assuming o							☐ YES	⊠ NO
he	goe	accanning t	mpilatioe	арри			If no continu		rwise ekin	to 12
								, Juic	oc anip	to IZ.
_				lawal sis			Lin in C			
7.	is there a no	on-required ext	ernal stand	ara which	applie			a4 <u>+</u> -	YES	
						if	yes, continu	e; othei	wise skip	to 10.

8. External sufficient standard citation
ASHRAE - 15 - 1989 or later version
9. Is the level of risk associated with the issue(s) consistent with ✓ YES □ NO
management performance goals assuming compliance with the above
(non-statutory) external standard? If no continue; otherwise skip to 12
10. Is an internal standard required to attain a level of risk consistent with
management performance goals?
11. Describe nature and status of internal sufficient standard.
Fermilab ES&H Manual Chapter 5035, Mechanical Refrigeration Systems, incorporates the above mentioned standard. This
chapter effectively references the ASHRAE standard.
12. Describe how the levels of risk and cost are consistent with management performance goals.
12. Describe how the levels of risk and cost are consistent with management performance goals. Past adherance to the internal standard in #11 (based on the external standard in #8) has resulted in levels of ES&H and
cost performance that are consistent with management goals including the use of industrial standards for industrial issues.
portermande that are deficient with management goale installing the add of installing to standard for installing the
13. Pick the basic implementing assumption from the list. Major positive impact Minor negative impact
☐ Minor positive impact ☐ Major negative impact
■ No net impact
14. Describe the nature and status of implementation including cost-effectiveness.
Adoption of the national standard in #11 (based on the external standard in #8) has made it easier to design and evaluate
mechanical refrigeration rooms. Experience has demonstrated that this program is both successful and cost-effective.
i e e e e e e e e e e e e e e e e e e e

1. Issue(s)		issue	origin	Hazard analysis □	Identification Team
	nical hazards - general environmental c	control	-		 _
100. Other meena	moar nazardo gonerar onvironmentar e	30111101			
					1
·					
Focus group					
	☐ Environmental Protection ☐ Ma	anagement &	Oversigh	nt Radiation Protection	on
2. Is there a	ecessary standard which applie	s to this is	ssue?		YES NO
			if	yes, continue; othe	rwise skip to 6.
				,,,	
3. Necessary	standard(s)				
29 CFR 1910.94					,
29 CFR 1910.95					
29 CFR 1910.96					
29 CFR 1910.97					,
29 CFR 1926.50					
29 CFR 1926.51 29 CFR 1910.52					
29 CFR 1910.55					
29 CFR 1926.56					
29 CFR 1926.57					
29 CFR 1926.59					
29 CFR 1910 Subp	art J				
					
4. Are there a	ny aspects of these necessary :	standard(s)			YES NO
			1	f yes, continue; oth	erwise skip to 6.
5. Description	of non-value added aspects of	f necessary	y stand	lard(s).	
				•	j
	······································				
		•			
6. Is the level	of risk associated with the iss	ue(s) consi	istent v	vith management	E VEO E VO
	als assuming compliance with				YES NO
				If no continue; other	erwise skip to 12.
7. Is there a	ion-required external standard w	nich applie			☐ YES ☐ NO
			İf	yes, continue; othe	rwise skip to 10.

8. External sufficient standard citation		
. Is the level of risk associated with the issue(s) consi	stent with	YES NO
nanagement performance goals assuming compliance wit		<u> </u>
non-statutory) external standard?	If no continue; oth	erwise skip to 1
0. Is an internal standard required to attain a level of r nanagement performance goals?	risk consistent with	YES NO
nanagement performance goals:		
1. Describe nature and status of internal sufficient sta	ındard.	
2. Describe how the levels of risk and cost are consist	tent with management perf	ormance goals.
Past adherance to the statutory requirements in #3 has resulted in leve	els of ES&H and cost performan	
vith management goals including the use of industrial standards for inc	dustrial issues.	
3. Pick the basic implementing assumption from the list	■ Major positive impact □ M	/linor negative impac
or the time the time to the time time the time the time t	☐ Minor positive impact ☐ N	/lajor negative impac
	No net impact No	
4. Describe the nature and status of implementation i	ncluding cost-effectivenes	s.
experience has demonstrated that this program is both successful and		J.

	toowo(o)	Iss	sue (origin	Hazard analysis	☐ Identification Team
1.	Issue(s)	a valina				
1107	Other mechanical hazards - machine gu	arumg				
<u> </u>					·	
		ment			Occupational S	
	☐ Environmental Prote	ection	nt & C	Oversigh	nt ☐ Radiation Prote	ection
2.	Is there a necessary standard wi	nich applies to thi	is is:	sue?		YES NO
	•			lf	yes, continue; o	therwise skip to 6.
						-
3.	Necessary standard(s)					
29 (CFR 1910 Subpart O					
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1						
						}
<u> </u>					,	
4.	Are there any aspects of these i	necessary standard	d(s)			
				ľ	r yes, continue; (otherwise skip to 6.
5.	Description of non-value added	aspects of neces	sary	stand	ard(s).	
						
6.	Is the level of risk associated w	ith the issue(e) c	oneis	itent v	vith management	
	rformance goals assuming compli	ance with applica	ible	necess	sary standards?	YES NO
		• •				otherwise skip to 12.
_	In these a man version of end-		a m 11	. do 11	in incur?	E VEO
7.	Is there a non-required external	standard which ap	ppnes			YES NO
				ΙŢ	yes, continue; of	therwise skip to 10.

8. External sufficient standard citation		
ANSI B15.1 (Power transmission apparatus)		
ANSI O1.1 (Woodworking machinery)		
ANSI B11 series (Metalworking - applicable sections)		
9. Is the level of risk associated with the issue(s) consistent		XYES NO
management performance goals assuming compliance with the (non-statutory) external standard?		
(non-statutory) external standard:	ir no continue; ot	herwise skip to 12.
10. Is an internal standard required to attain a level of risk co	onsistent with	YES NO
management performance goals?		[] 159 [] NO
44 Parally making and about of internal sufficient about and		
11. Describe nature and status of internal sufficient standard	-	
		}
		<u> </u>
		·
·		
12. Describe how the levels of risk and cost are consistent w	ith management ne	formance goals
Past adherance to the statutory requirement in #3 and the external standards		
performance that are consistent with management goals including the use of		
associated program includes annual inventories of machines and an on-going		
		·
	,	
and the state of t	laior pocitivo impact	Minor pogetive impact
13. Pick the basic implementing assumption from the list.	linor positive impact	Major negative impact
	o net impact	majo: nogativo impaol
<u> </u>		
14. Describe the nature and status of implementation includ	ina cost-effectivene	ss.
Adherence to machine guarding requirements has been well addressed at the		
verification all machines have been inspected, and inventoried. Machines bui		
		J 1
requirements had guards designed and affixed. Experience has demonstrate	d that this program is bo	th successful and
requirements had guards designed and affixed. Experience has demonstrate cost-effective.	d that this program is bo	th successful and
1 '	d that this program is bo	th successful and

	1(-)	Issue origin 🔀 Hazard analysis 🔲 Identification Team
1.	Issue(s)	
108	. Other mechani	cal hazards - machinery and rotating parts
L		DE Destriction Des
	Focus group	☐ Emergency Management ☐ Fire Protection
		Environmental Protection Management & Oversight Hadiation Protection
2.	Is there a no	ecessary standard which applies to this issue?
		If yes, continue; otherwise skip to 6.
3.	Necessary s	standard(s)
29 (CFR 1910 Subpa	rt F
29 (CFR 1910 Subpa	rt N
	CFR 1910 Subpa	
29 (CFR 1910 Subpa	rt P
<u> </u>		
4.	Are there an	y aspects of these necessary standard(s) which do not add value?
		If yes, continue; otherwise skip to 6
5.	Description	of non-value added aspects of necessary standard(s).
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}		
<u> </u>		
	la tha lacat	of wick appealated with the inequals) appealatent with management
6.		of risk associated with the issue(s) consistent with management IS SE NO IS ASSUMING COMPILERS IN NO.
hei	Tormance you	is assuming comphanice with applicable necessary standards:
		If no continue; otherwise skip to 12
7.	Is there a no	on-required external standard which applies to this issue? ▼YES □ NO
		If yes, continue; otherwise skip to 10

8. External sufficient standard citation		
ANSI B11 series (Metalworking - applicable portions)		
ANSI B15.1 (Power transmission apparatus)		
ANSI O1.1 (Woodworking machinery)		
9. Is the level of risk associated with the issue(s) consistent		XYES NO
management performance goals assuming compliance with the	above	
(non-statutory) external standard?	If no continue; c	otherwise skip to 12.
10. Is an internal standard required to attain a level of risk co	nnsistent with	
management performance goals?	ondiction with	☐ YES ☐ NO
11. Describe nature and status of internal sufficient standard	l.	
·		
		·
12. Describe how the levels of risk and cost are consistent w		
Past adherance to the statutory requirements in #3 and the external standards		
performance that are consistent with management goals including the use of i associated program includes an on-going inspection program to verify complic		industrial issues. The
lassociated program includes an orrgoing inspection program to verify complic	ance.	
13. Pick the basic implementing assumption from the list.	aior positive impact	7 Minor negative impost
13. Pick the basic implementing assumption from the list.□ M	linor positive impact	Major negative impact
	o net impact	_ major negative impact
I Company		
14. Describe the nature and status of implementation includ	ing cost-effectives	966
Machinery and rotating parts have been well addressed on an continuous bas demonstrated that this program is both successful and cost-effective.	is where deliciencies a	inse. Experience has
nomonarated that this program is both successful and cost-enective.		ļ
		ļ
		[

	•	Issue	origin	
1.	lssue(s)			
	9A. Other mechanical hazards - medical and first a ood borne pathogens, lead, noise, asbestos, and		tion	
	bomo pamogono, idaa, noloo, addeelee, ana	roophatory protoc		

	Focus group	☐ Fire Protection		
	☐ Environmental Protection		Oversig	
			_	
2.	is there a necessary standard which a	pplies to this is		☑ YES □ NO
			lf	yes, continue; otherwise skip to 6.
3.	Necessary standard(s)			
29	CFR 1910.151 (medical services and first aid)			
	CFR 1910.1030 (Blood borne pathogens)			
	CFR 1910. 1025(j) (Lead) CFR 1910.95(g) and (h) (Noise)			
	CFR 1910.1001(Asbestos)			
29	CFR 1910.134 (b)(10) (Respiratory protection)			
ĺ				
Ì				
<u> </u>				
4.	Are there any aspects of these necess	ary standard(s)		
			l	If yes, continue; otherwise skip to 6.
5.	Description of non-value added aspec	ts of necessari	v stanc	dard(e)
J.	Description of non-value added aspec	to or frecessary	y Stairt	141 (49).
		•		
ļ				
	e			
6.	Is the level of risk associated with the rformance goals assuming compliance v			
hei	Troimance yours assuming compliance	min applicable	116663	If no continue; otherwise skip to 12.
				Johnnes, emerales skip to 12.
7.	Is there a non-required external standa	rd which annlie	es to ti	his issue?
••	a nen reganea external standa	upplic		yes, continue; otherwise skip to 10.

8. External sufficient standard citation	
9. Is the level of risk associated with the issue(s) consistent with	YES NO
management performance goals assuming compliance with the above (non-statutory) external standard?	continue; otherwise skip to 12
	continue, otherwise skip to 12
10. Is an internal standard required to attain a level of risk consister	nt with
management performance goals?	☐ YES ☐ NO
11. Describe nature and status of internal sufficient standard.	
	,
12. Describe how the levels of risk and cost are consistent with ma Past adherance to the statutory requirements in #3 has resulted in levels of ES&H and	
with management goals including the use of industrial standards for industrial standar	
y	
13. Pick the basic implementing assumption from the list. Adjoin pos	itive impact
☐ Minor pos	itive impact 🔲 Major negative impact
No net imp	pact
14. Describe the nature and status of implementation including cos	st-effectiveness.
Implementation is on-going and effective. Personnel are Illinois licensed professionals	with experience in occupational
health. Experience has demonstrated that this program is both successful and cost-	effective.

		Issue origin 🔀 Hazard analysis 🔀 Ide	entification Team
1.	Issue(s)	10040 Origin	Filmication realit
10	9B. Surveillance -	tuberculosis	
			į
L			
	Focus group	☐ Emergency Management ☐ Fire Protection ☑ Occupational Safety	
		☐ Environmental Protection ☐ Management & Oversight ☐ Radiation Protection	
2.	is there a ne	cessary standard which applies to this issue?	YES NO
		If yes, continue; otherw	
		,,	
3.	Necessary s	tandard(s)	
Г			
4.	Are there any	y aspects of these necessary standard(s) which do not add value?	YES NO
₹.	Are there un	If yes, continue; otherw	
		, , ,	
5.	Description of	of non-value added aspects of necessary standard(s).	
<u> </u>			
ĺ			-
•			
_			
6.		of risk associated with the issue(s) consistent with management	YES NO
þе	niormance goa	Is assuming compliance with applicable necessary standards?	
		If no continue; otherw	ise skip to 12.
7.	is there a no	n-required external standard which applies to this issue?	YES NO
		lf yes, continue; otherwi	ise skip to 10.

II. Department of Public Health, DuPage County Dept. Public Health. CDC D		
	ecember 7,1990	
9. Is the level of risk associated with the issue(s) consisten	+ with	
management performance goals assuming compliance with the		YES NO
(non-statutory) external standard?		
(non-ordinary) oxionian ordinara	it no continue;	otherwise skip to 12
10. Is an internal standard required to attain a level of risk	consistent with	<u></u>
management performance goals?		☐ YES ☐ NO
11. Describe nature and status of internal sufficient standa	rd.	
		•
12. Describe how the levels of risk and cost are consistent		
Past adherance to the standard in #8 has resulted in levels of ES&H and co		
management goals including the use of industrial standards for industrial sta	andards. Medical surve	
a martine and a second a second and a second and a second and a second and a second and a second and a second and a second and a second and a second a second and a second and a second and a second and a second and		
	enter. These individuals	
risk of TB exposure due to international nature of children with whom they w	enter. These individuals	s are at a slightly higher
risk of TB exposure due to international nature of children with whom they we have a sumption from the list.	enter. These individuals ork. Major positive impact	s are at a slightly higher Minor negative impact
risk of TB exposure due to international nature of children with whom they w	enter. These individuals ork. Major positive impact Minor positive impact	s are at a slightly higher Minor negative impact
risk of TB exposure due to international nature of children with whom they we have a second to the second the list.	enter. These individuals ork. Major positive impact	s are at a slightly higher Minor negative impact
risk of TB exposure due to international nature of children with whom they we see that the second s	enter. These individuals ork. Major positive impact Minor positive impact No net impact	□ Minor negative impact □ Major negative impact
risk of TB exposure due to international nature of children with whom they we note that the second	enter. These individuals ork. Major positive impact Minor positive impact No net impact	□ Minor negative impact □ Major negative impact
risk of TB exposure due to international nature of children with whom they we see that the second s	enter. These individuals ork. Major positive impact Minor positive impact No net impact	□ Minor negative impact □ Major negative impact
☐ ☑ ☑ ☑ ☑ ☑ ☑ ☑ ☑ ☑ ☑ ☑ ☑ ☑ ☑ ☑ ☑ ☑ ☑ ☑	Major positive impact Minor positive impact No net impact ding cost-effectiver	☐ Minor negative impact☐ Major negative impact☐ Major negative impact☐ DuPage County Public
13. Pick the basic implementing assumption from the list. 14. Describe the nature and status of implementation inclu LSS/Medical Department Work Processes include medical surveillance for	Major positive impact Minor positive impact No net impact ding cost-effectiver	☐ Minor negative impact☐ Major negative impact☐ Major negative impact☐ DuPage County Public
13. Pick the basic implementing assumption from the list. 14. Describe the nature and status of implementation inclu LSS/Medical Department Work Processes include medical surveillance for	Major positive impact Minor positive impact No net impact ding cost-effectiver	☐ Minor negative impact☐ Major negative impact☐ Major negative impact☐ DuPage County Public
13. Pick the basic implementing assumption from the list. 14. Describe the nature and status of implementation inclu LSS/Medical Department Work Processes include medical surveillance for	Major positive impact Minor positive impact No net impact ding cost-effectiver	☐ Minor negative impact☐ Major negative impact☐ Major negative impact☐ DuPage County Public

	Issue origin A Hazard analysis I Identification Team
1. Issue(s)	
110. Other mechanical hazards - powered platforms	
	·
Focus group	e Protection
	anagement & Oversight
2. Is there a necessary standard which applie	s to this issue?
,	If yes, continue; otherwise skip to 6.
	n yes, commue, emerales sup to c.
3. Necessary standard(s)	
29 CFR 1910 Subpart F (Powered Platforms, Manlifts, and	Vehicle Mounted Work Platforms)
20 of the following and the second of the se	, romo mountos rrom randimo,
	·
4. Are there any aspects of these necessary	standard(s) which do not add value?
, , , , , , , , , , , , , , , , , , , ,	If yes, continue; otherwise skip to 6.
	• / /
5. Description of non-value added aspects of	f necessary standard(s)
C. Bookinghion of home rained adaptive of	
	, .
6. Is the level of risk associated with the iss	eue(s) consistent with management
performance goals assuming compliance with	
	If no continue; otherwise skip to 12.
	•
7. Is there a non-required external standard w	which applies to this issue?
7. Is there a non-required external standard w	which applies to this issue?
	ii yes, continue; otherwise skip to 10.

8. External sufficient standard citation
9. Is the level of risk associated with the issue(s) consistent with management performance goals assuming compliance with the above
(non-statutory) external standard? If no continue; otherwise skip to 12.
10. Is an internal standard required to attain a level of risk consistent with ☐ YES ☐ NO
management performance goals?
11. Describe nature and status of internal sufficient standard.
12. Describe how the levels of risk and cost are consistent with management performance goals.
Past adherance to the statutory requirement in #3 has resulted in levels of ES&H and cost performance that are consistent with management goals including the use of industrial standards for industrial hazards.
·
13. Pick the basic implementing assumption from the list. ☐ Major positive impact ☐ Minor negative impact ☐ Major negative impact ☐ Major negative impact
☑ No net impact ☑ Major negative impact
14. Describe the nature and status of implementation including cost-effectiveness. Experience has demonstrated that this program is both successful and cost-effective.

1.	Issue(s)					Issue	origin	🛚 Hazard ana	alysis	Identification Team
	A. Other mecha	nical hazaı	ds - pressuri	zed tanks	s and con	ainers				
										·
1										
L										
	Focus group		ency Manage				Oversia	☑ Occupati ht ☐ Radiation		
		LI LIVIIO	internal Fron	COHOIT E	_ manage	MOIN O	Ovoloig	TREAD TRACTOR	71 1010	00011
2.	Is there a ne	ecessary	standard w	hich ap	plies to	this is	ssue?			X YES NO
		_		•	-			yes, contin	ue; ot	herwise skip to 6.
										•
3.	Necessary s								. <u> </u>	
29	CFR1910.169 (Ai	ir receivers								
İ										
										ĺ
ŀ										
ŀ										
4.	Are there any	y aspects	of these	necessa	ary stand	dard(s)	which	do not add	value'	? YES NO
							I	f yes, contin	ue; o	therwise skip to 6.
5.	Description (of non-va	lue added	aspect	s of ne	cessary	/ stanc	lard(s).	****	
				•						
					ŧ					
	Is the level									YES NO
pe	formance goa	ıls assum	ing compl	iance w	vith app	licable	neces			
								ir no contin	ue; ot	herwise skip to 12.
_	I. Alexa		al assistance - 1	ا ماد مرسوس	الماري المرا	a 19 -		hia laawan		E VEG E VE
7.	is there a no	on-require	u external	standar	u wnich	аррие			ıe; oti	YES NO NO Nerwise skip to 10.

8. External sufficient standard citation	
ASME Pressure Vessel Code - Section VIII	
	·
9. Is the level of risk associated with the issue(s) consistent with management performance goals assuming compliance with the above	YES NO
total and automat standards	nue; otherwise skip to 12
in the continue of the continu	,
10. Is an internal standard required to attain a level of risk consistent with	
management performance goals?	YES NO
11. Describe nature and status of internal sufficient standard. Fermilab ES&H Manual Chapter 5031, Pressure Vessels, has been written and in use for over	r 15 years It has effectively
minimized personnel exposure and equipment downtime from vessel failures.	13 years. It has enectively
12. Describe how the levels of risk and cost are consistent with managem	
Past adherance to the internal standard in #11 has resulted in levels of ES&H and cost perfor management goals. There is a provision in 5031 that allows an exemption by the Director if ce	
requirements are not able to be met. This provision is important in our research environment a	
order for our mission to be met. The statutory requirement in #3 is limited to air compressors a	and is based on the 1968
edition of the standard in #8. Since Fermilab has a wider variety of vessels and gases to come a much better and up to date "fit."	tend with, the standard in #8 is
a much better and up to date in.	
Their positive im	nost Minor posstive impost
13. Pick the basic implementing assumption from the list. ☐ Major positive im	pact
No net impact ■	_ , _ ,
•	
14. Describe the nature and status of implementation including cost-effective control of the control of the cost-effective control of the cost-effective cos	
The internal standards identified in #11 (based on the external standard in #8) have proven to cost-effective.	be both successful and
COST-BIIGGLIVE.	

If yes, continue; otherwise skip to 10.

1.	Issue(s)			Is	sue ori	gin	Hazard analysis	▼ Identification Team
	1B. Other mecha	nical hazards -	pressurized lin	es and piping s	systems		,	
	Focus group	□ Emergency	Management	☐ Fire Protect	tion			Safety
	. ooder group					ersigh	t 🔲 Radiation Prot	
2.	is there a ne	ecessary star	dard which	applies to th	is issu			YES NO
						lf	yes, continue; o	therwise skip to 6.
3.	Necessary s	tandard(s)						
29	CFR1910.169 (Ai	ir receivers)						
								•
4.	Are there any	y aspects of	these neces	sary standar	d(s) wh		do not add value	
						H	yes, continue;	otherwise skip to 6.
5.	Description of	of non-value	added aspe	cts of neces	sarv si	tand	ard(s).	
J.			aopo		,			
							4	
6.	is the level of	of risk assoc	iated with th	ne issue(s) c	onsiste	nt w	ith management	T VEC PANOL
pe						cess	ary standards?	YES NO
							If no continue; c	otherwise skip to 12.
_						~ -		
7.	ls there a no	on-required e	xternal stand	ard which a	pplies t	o th	is issue?	YES NO

8. External sufficient standard citation		_
ASME/ANSI B31.1		
ASME/ANSI B31.3		Ì
ASME/ANSI B31.5 IASME/ANSI B31.8		
ASME/ANSI BS1.0		
9. Is the level of risk associated with the issue(s) consistent		/ES NO
management performance goals assuming compliance with the (non-statutory) external standard?		
(non-statutory) external standard:	If no continue; otherwise	skip to 12.
10. Is an internal standard required to attain a level of risk co	onsistent with	/ES □ NO
management performance goals?		123 1110 I
44 Describe nature and status of internal sufficient standard		
11. Describe nature and status of internal sufficient standard Fermilab ES&H Manual Chapter 5031.1, Pressure Piping Systems, has been v		o It boo
effectively minimized personnel exposure and equipment downtime from pipin		s. It iids
pinosition in minimized personnel expession and equipment destruction in the pipment	g 14.10.001	
		1
12. Describe how the levels of risk and cost are consistent w	ith management performanc	e anale
Past adherance to the internal standard in #11 has resulted in levels of ES&H		
management goals. There is a provision in 5031.1 that allows an exemption in		
requirements are not able to be met. This provision is important in our research	h environment and must be mainta	ained in
order for our mission to be met. The statutory requirement in #3 is limited to pi		b has a
wider variety of piping applications, the standards in #8 are a much better and	up to date "fit."	1
•		ľ
	•	1
		ľ
40 Biolo Marchaela incolorantina annuali de la compansión	aior positivo impost. 🎵 Minos pos	rativo imposil
13. Pick the basic implementing assumption from the list. ☐ M	inor positive impact	gative impact
	o net impact	ganvo impaoi
14. Describe the nature and status of implementation includi	ng cost-effectiveness.	
The internal standards identified in #11 (based on the external standards in #8		ful and
cost-effective.	, proton to bo both oucoess	und

YES NO

If yes, continue; otherwise skip to 10.

FERMILAB IDENTIFICATION TEAM DOCUMENTATION

1. Issue(s) Issue origin ☑ Hazard analysis ☐ Identification Team
112. Other mechanical hazards - material grinding, cutting, and drilling
Tree of the fire o
Focus group ☐ Emergency Management ☐ Fire Protection ☐ Occupational Safety ☐ Environmental Protection ☐ Management & Oversight ☐ Radiation Protection
2. Is there a necessary standard which applies to this issue?
If yes, continue; otherwise skip to 6.
3. Necessary standard(s)
29 CFR 1910.94
29 CFR 1910.212-213
29 CFR 1910.215
29 CFR 1910.243
4. Are there any aspects of these necessary standard(s) which do not add value? ☐ YES ☒ NO
If yes, continue; otherwise skip to 6
5. Description of non-value added aspects of necessary standard(s).
6. Is the level of risk associated with the issue(s) consistent with management
performance goals assuming compliance with applicable necessary standards?
If no continue; otherwise skip to 12
·

7. Is there a non-required external standard which applies to this issue?

8. External sufficient standard citation		
ANSI O1.1 (Woodworking machinery) ANSI B11.8 (Drilling, milling; and boring machines) ANSI B11.9 (Grinding machines)		
ANOTOTICS (Cilliang machines)		
9. Is the level of risk associated with the issue(s) consistent we management performance goals assuming compliance with the		YES NO
(non-statutory) external standard?		otherwise skip to 12.
10. Is an internal standard required to attain a level of risk commanagement performance goals?	nsistent with	YES NO
11. Describe nature and status of internal sufficient standard.	- 10 y y 10 y 10 y 10 y 10 y 10 y 10 y 1	
40. Describe how the levels of risk and seet are consistent with	lb	
12. Describe how the levels of risk and cost are consistent with Past adherance to the statutory requirements in #3 and the external standards	in #8 has resulted in	levels of ES&H and cost
performance that are consistent with management goals including the use of in The associated program includes provision of training and personal protective e		r industrial hazards.
into according program motorers provide a samining and possession of	4	
L		
13. Pick the basic implementing assumption from the list.	jor positive impact	☐ Minor negative impact
□ Mir	nor positive impact [net impact	☐ Major negative impact
14. Describe the nature and status of implementation includin Grinding, cutting, and drilling is performed frequently, through supervision, thro		
equipment made available to all employees, and training by supervision safe we Experience has demonstrated that this program is both successful and cost-ef	ork practicies have b	
		į

1. Issue(s)	Issue origin	☐ Hazard analysis ☐ Identification Tea	am
113. Other mechanical hazards (also fire) - means of egress	·	·.	
Focus group ☐ Emergency Management ☑ Fire Pro	tection	☐ Occupational Safety	
Focus group ☐ Emergency Management ☒ Fire Pro ☐ Environmental Protection ☐ Manage			
2. Is there a necessary standard which applies to		YES No ves, continue; otherwise skip to	6.
3. Necessary standard(s)			
41 IAC - Fire Protection 100 IAC - Fire Prevention and Safety 71 IAC - Illinois Accessibility Code Subparts C-F 29 CFR 1910 Subpart E - Means of Egress 29 CFR 1910 Subpart L - Fire Protection 29 CFR 1926 Subpart F - Fire Protection and Prevention Uniform Federal Accessibility Standards, Chapter 4, Accessible	e Elements and	Spaces: Scope and Technical Requiremen	nts
4. Are there any aspects of these necessary stand		do not add value? YES If yes, continue; otherwise skip to	VO 6.
5. Description of non-value added aspects of ne			
Neither 29 CFR 1910 nor Title 41 of the IL Administrative Code 101A which regulate egress provisions. These inflexible, pressuperior measures to achieve the ES&H goals in addressing the accelerator tunnels where the prescription is not applicable.	criptive versions	do not allow alternative, equivalent or	
6. Is the level of risk associated with the issue(s performance goals assuming compliance with app		sary standards?	
		If no continue; otherwise skip to	12.

7. Is there a non-required external standard which applies to this issue?

If yes, continue; otherwise skip to 10.

8. External sufficient standard citation	-	
BOCA National Building Code		
BOCA Fire Prevention Code	and Church]
NFPA 101 & 101A current editions: Code for Safety to Life from Fire in Building	js and Structures	
		·
9. Is the level of risk associated with the issue(s) consistent	with	M VEC TINO
management performance goals assuming compliance with the		X YES NO
(non-statutory) external standard?		otherwise skip to 12.
	ii iio continue,	otherwise skip to 12.
10. Is an internal standard required to attain a level of risk co	nsistent with	
management performance goals?		☐ YES ☐ NO
11. Describe nature and status of internal sufficient standard		
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	· · · · · · · · · · · · · · · · · · ·	
40 Barrilla ham the levels of dala and seek an equalities of	!AL	
12. Describe how the levels of risk and cost are consistent w		
The level of risk is consistent with management performance goals because the	ne standards selected	d are those applicable to
all public and commercial structures.		İ
		i
		4
		. 1
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13. Pick the basic implementing assumption from the list.	ajor positive impact	☐ Minor negative impact
□ M	inor positive impact	☐ Major negative impact
🗖 No	o net impact	
1/ Describe the nature and status of implementation include	na cost-offootivo	nace
14. Describe the nature and status of implementation includi		
Compliance with the statutory prescription of providing a full exit every n-hund		
accelerator enclosures would incur a very large cost for no discernible ES&H t		
designed for human occupancy and do not contain significant fire hazards, the		
measures which provide levels of safety equivalent or superior to those presci	ribed by the dated re	quirement citations.
, in the second of the second		
1		į.

If yes, continue; otherwise skip to 10.

1. Issue(s)	Issue	origin	Hazard analysis	☐ Identification Team
114. Other mechanical hazards - moving vehicles,	carte and forklifte			
114. Other mechanical hazards - moving venicles,	carts, and forkints			
				Ì
	☐ Fire Protection	_	□ Occupational	
☐ Environmental Protection	☐ Management &	Oversigh	t Radiation Pro	tection
2. Is there a necessary standard which a	pplies to this is	sue?		YES NO
		· If	yes, continue;	otherwise skip to 6.
3. Necessary standard(s)				
29 CFR 1910 Subpart N				
29 CFR 1910 Subpart F				i
				ł
•				
4. Are there any aspects of these necess	ary standard(s)	which	do not add valu	e? YES NO
				otherwise skip to 6.
				•
5. Description of non-value added aspec	ts of necessary	stand	ard(s).	
· · · · · · · · · · · · · · · · · · ·				
·				
4				
6. Is the level of risk associated with the	e issue(s) consi	stent w	rith management	
performance goals assuming compliance				YES NO
			*	otherwise skip to 12.
7 to thore a non-required systematic stands	val uvhiah amedia	a	la lagua?	
7. Is there a non-required external standa	iu wnich applie	s to th	is issue?	☐ YES ☐ NO

8. External sufficient standard citation		
9. Is the level of risk associated with the issue(s) consist	ont with	
9. Is the level of risk associated with the issue(s) consist management performance goals assuming compliance with		☐ YES ☐ NO
(non-statutory) external standard?		herwise skip to 12.
10. Is an internal standard required to attain a level of ris	k consistent with	YES NO
management performance goals?		LI 1E3 LINO
11. Describe nature and status of internal sufficient stand	lard.	
		Į.
L		
12. Describe how the levels of risk and cost are consister	nt with management per	formance goals.
Past adherance to the statutory requirements in #3 has resulted in levels		nce that are consistent
with management goals including the use of industrial standards for indus	strial hazards.	
•		
·	Majar acatatus turnas at 🖂	Minanagasta
13. Pick the basic implementing assumption from the list.	☐ Major positive impact ☐ ☐ Minor positive impact ☐	Major negative impact
	No net impact	major mogativo impaot
14. Describe the nature and status of implementation inc		ss.
Experience has demonstrated that this program is both successful and of	cost-effective.	
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1.	Issue(s)	Issue	origin	☑ Hazard analysis ☐ Ide	ntification Team
	Other mechanical hazards - special hand tools and power	r driven r	nail guns	. etc.	
			J	,	
				·	
F	ocus group Emergency Management Fire Pro	otection		☑ Occupational Safety	
	☐ Environmental Protection ☐ Manage	ement &	Oversigh		
2.	Is there a necessary standard which applies to	this is	ssue?		YES NO
			If	yes, continue; otherwi	se skip to 6.
3.	Necessary standard(s)				
	FR 1910.243 FR 1926.302				1
29 0	·FN 1920.302				
1					
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l					
4.	Are there any aspects of these necessary stan-	dard(s)	which	do not add value?	YES NO
7.	The there any appeals of these houseary stand			f yes, continue; otherw	
				, ,	
5.	Description of non-value added aspects of ne	cessary	y stand	ard(s).	
ŀ					
l					
1					
6.	Is the level of risk associated with the issue(s) consi	istent v	vith management	MVCC FINAT
	formance goals assuming compliance with app		necess	sary standards?	YES NO
	•			If no continue; otherwi	se skip to 12.
7.	is there a non-required external standard which	applie	s to th	is issue?	YES NO
		,		yes, continue; otherwis	

8. External sufficient standard citation	
9. Is the level of risk associated with the issue(s) consistent with	YES NO
management performance goals assuming compliance with the above (non-statutory) external standard? If no continue otherwise	
(non-statutory) external standard?	e skip to 12.
10. Is an internal standard required to attain a level of risk consistent with	
management performance goals?	YES NO
11. Describe nature and status of internal sufficient standard.	
The Decorate Indiana and Oranda of Internal Surface Countries	
	ļ
12. Describe how the levels of risk and cost are consistent with management performa	ınce goals.
Past adherance to the statutory requirements in #3 has resulted in levels of ES&H and cost performance that	at are consistent
with management goals including the use of industrial standards for industrial hazards. The associated prog provision of training, and eye, head, and face protetion.	ram includes
13. Pick the basic implementing assumption from the list. ☐ Major positive impact ☐ Minor ☐ Minor positive impact ☐ Major	negative impact
■ No net impact	
14. Describe the nature and status of implementation including cost-effectiveness. The use of power driven nail guns does not occur on a frequent basis. This type of equipment is usually kept	in secure
locations under the control of supervisors and or competent subcontractors. Implementation of safe work p	ractices is
enforced through internal oversight for Laboratory employees, and contractual agreements with subcontractexperience has demonstrated that this program is both successful and cost-effective.	iors.
Expension has demonstrated that the program is both successful and cost-effective.	

1.	Issue(s)	Issue	origin	Hazard analysis ■	☐ Identification Team
	Other mechanical hazards - work with roads and grounds	equipme	ent		
' ''	J. Canor modification natural ways and grounds				
	Faculty of Emergency Management	tootion		☑ Occupational S	Pofoty 7
	Focus group ☐ Emergency Management ☐ Fire Pro ☐ Environmental Protection ☐ Manage		Oversiał		
2.	Is there a necessary standard which applies to	this is	sue?		YES NO
	to more a necessary changes in the appropriate			ves continues of	therwise skip to 6.
			10	yes, continue, o	merwise skip to b.
3.	Necessary standard(s)				
	CFR 1910.132-133			· · · · · · · · · · · · · · · · · · ·	
	CFR 1910.136				
	CFR 1910.212				
	CFR 1910.215				
	CFR 1910.241 CFR 1910.243-244				
	CFR 1928 Subpart C (Roll-over protective structures)				
	CFR 1928 Subpart D (Safety for agricultural equipment)				
	,				<u> </u>
4.	Are there any aspects of these necessary stand	dard(s)	which	do not add value	? YES 🛛 NO
			ľ	f yes, continue; o	otherwise skip to 6.
5.	Description of non-value added aspects of ne	cessary	stand	lard(s).	
		*			
L					
_					
6.	Is the level of risk associated with the issue(s				YES NO
hė	rformance goals assuming compliance with app	iiicabie	110005	*	
				n no continue; o	therwise skip to 12.
7.	is there a non-required external standard which	n applie	s to th	nis issue?	☐ YES ☐ NO
			If	yes, continue; of	herwise skip to 10.

8. External sufficient standard citation	
9. Is the level of risk associated with the issue(s) consistent with	
9. Is the level of risk associated with the issue(s) consistent with management performance goals assuming compliance with the above	YES NO
(non-statutory) external standard? If no continue; other	wise skip to 12.
	•
10. Is an internal standard required to attain a level of risk consistent with	DVEC DNO
management performance goals?	YES NO
11. Describe nature and status of internal sufficient standard.	
	ľ
12. Describe how the levels of risk and cost are consistent with management performance Past adherance to the statutory requirements in #3 has resulted in levels of ES&H and cost performance	
with management goals including the use of industrial standards for industrial hazards. These requirement	
equivalent level of safety as analogous requirements in 29 CFR 1928.	·
13. Pick the basic implementing assumption from the list. ☐ Major positive impact ☐ Mir ☐ Minor positive impact ☐ Major posit	nor negative impact
■ No net impact	jor negative impact
	· · · · · · · · · · · · · · · · · · ·
14. Describe the nature and status of implementation including cost-effectiveness.	
It is assumed that compliance with the requirements given in #3 above are equivalent to those given in 29 Experience has demonstrated that this program is both successful and cost-effective.	CFR1928.
purponence has demonstrated that this program is both successful and cost-effective.	ľ

1.	Issue(s)	Issue	origin	Hazard analysis ☐ Identification Team
	Other personal hazards - confined space			
'''	. Other personal hazards - commed space			
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l				
L				
1	Focus group			☑ Occupational Safety
	☐ Environmental Protection ☐ Manage	ment &	Oversigh	ht Radiation Protection
2.	Is there a necessary standard which applies to	this is	ssue?	X YES NO
			lf	yes, continue; otherwise skip to 6.
				•
3.	Necessary standard(s)			
29 (CFR 1910.146-147			
				i
				ļ
L				
4.	Are there any aspects of these necessary stand	lard(s)	which	do not add value?
			j:	f yes, continue; otherwise skip to 6.
5.	Description of non-value added aspects of ned	cessary	/ stand	lard(s).
			".	
L				
6.	Is the level of risk associated with the issue(s)			
per	formance goals assuming compliance with appl	icable		sary standards:
				If no continue; otherwise skip to 12.
7.	Is there a non-required external standard which	applie	s to th	nis issue?
	•	• • • • •		yes, continue; otherwise skip to 10.

8. External sufficient standard citation	
S. In the level of rick appointed with the inque(s) consistent with	
9. Is the level of risk associated with the issue(s) consistent with management performance goals assuming compliance with the above	YES NO
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	otherwise skip to 12
10. Is an internal standard required to attain a level of risk consistent with	YES NO
management performance goals?	[] 1E9 [] NO
11. Describe nature and status of internal sufficient standard.	
	1
12. Describe how the levels of risk and cost are consistent with management	
Past adherance to the statutory requirements in #3 has resulted in levels of ES&H and cost performance to the statutory requirements in #3 has resulted in levels of ES&H and cost performance to the statutory requirements in #3 has resulted in levels of ES&H and cost performance to the statutory requirements in #3 has resulted in levels of ES&H and cost performance to the statutory requirements in #3 has resulted in levels of ES&H and cost performance to the statutory requirements in #3 has resulted in levels of ES&H and cost performance to the statutory requirements in #3 has resulted in levels of ES&H and cost performance to the statutory requirements in #3 has resulted in levels of ES&H and cost performance to the statutory requirements in #3 has resulted in levels of ES&H and cost performance to the statutory requirements in #3 has resulted in levels of ES&H and cost performance to the statutory requirements in #3 has resulted in levels of ES&H and cost performance to the statutory requirements in #3 has resulted in levels of ES&H and cost performance to the statutory requirements in #3 has resulted in levels of ES&H and cost performance to the statutory requirements in #3 has resulted in levels of ES&H and cost performance to the statutory requirements in #3 has resulted in levels of ES&H and cost performance to the statutory requirements in #3 has requ	mance that are consistent
with management goals including the use of industrial standards for industrial hazards.	
<u>.</u>	
	•
T Major positive impost	Minor positive imposi
13. Pick the basic implementing assumption from the list. Major positive impact Minor positive impact	☐ Major negative impact
☑ No net impact	
14. Describe the nature and status of implementation including cost-effective	ness.
Experience has demonstrated that this program is both successful and cost-effective.	
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1.	Issue(s)				issue	origin	🔀 Haza	ard analys	is 🔲 ld	entification Team
		hozorda hozordar	oguiring DE) <u> </u>						
		hazards - hazards r		_						1
126.	Other personal	hazards - sharp edo	jes							
	-			□ Eine De	_44!				1.0-6-1	
•	Focus group	☐ Emergency Man				O		cupationa		
		☐ Environmental F	rotection	<u>ы</u> мападе	ement &	Oversigi	nt LI Ha	adiation Pr	otection	
2.	is there a ne	cessary standard	which a	pplies to	this is	ssue?				X YES NO
		occounty changement						_		
						lf	yes, c	ontinue;	otherv	ise skip to 6.
3.	Necessary s	tandard(s)								
20.0	ED 1010 Subpar	4 I								
	FR 1910 Subpai FR 1926 Subpai									
		ਾ ⊏ ents picked up in sp	oofio OPLIA	otondor-i-						•
Otne	er PPE requirem	ents bicked up in sp	BCIIC OSMA	Standards	>					
			•							
										•
		•								
4.	Are there any	y aspects of the	se necess	ary stan	dard(s)	which	do not	add val	ue?	YES X NO
				-		ı	f ves.	continue:	other	wise skip to 6.
						•	, , , , ,	· · · · · · · · · · · · · · · · · · ·	, сс.	p 10 01
5.	Description of	of non-value add	ed aspec	ts of ne	ecessary	/ stand	lard(s).			
			, alconolida							
										, .
6.	Is the level	of risk associated	d with the	e issue/s	s) consi	stent v	vith ma	nagemen	it	
		is assuming con								¥ YES □ NO
ااتم	gou	accuming our	٠,٠.٠٠٠	edala						
							IT NO C	ontinue;	otnerv	vise skip to 12.
-,	In Abav	احد ادمواررممورس		املماني است			ala tas:	-2		ELVEO ELIA
7.	is there a no	n-required exterr	iai standa	ara which	applie					YES NO
						lf	yes, c	ontinue;	otherw	ise skip to 10.

8. External sufficient standard citation		
. Is the level of risk associated with the issue(s) consistent v		YES NO
nanagement performance goals assuming compliance with the a mon-statutory) external standard?		-41
John Statutory, Oxformar Standard	ii no continue;	otherwise skip to 1
0. Is an internal standard required to attain a level of risk col	nsistent with	
anagement performance goals?		YES NO
1. Describe nature and status of internal sufficient standard.		
		•
2. Describe how the levels of risk and cost are consistent wi	th management :	performance goals
ast adherance to the statutory requirements in #3 has resulted in levels of ES	&H and cost perforr	
ith management goals including the use of industrial standards for industrial h	nazards.	
3. Pick the basic implementing assumption from the list. \square Ma	jor positive impact	☐ Minor negative impac
	nor positive impact net impact	☐ Major negative impa
Main de la company de la comp	Het Impact	
4. Describe the nature and status of implementation includir	ng cost-effective	ness.
xperience has demonstrated that this program is both successful and cost-e		

1.	Issue(s)	ie ·	origin		🔀 Hazard analysis 🔲 l	dentification Team
	Other personal hazards - high noise levels					
	•					
İ						
<u> </u>						
F	Focus group		<u> </u>		☑ Occupational Safet	
	☐ Environmental Protection ☐ Management	& (Oversig	ght	☐ Radiation Protection	n
2.	Is there a necessary standard which applies to this	is	sue?			YES NO
			H	f	yes, continue; other	wise skip to 6.
_	N					
3.	Necessary standard(s)		**	_		
29 C	CFR 1910.95					
						İ
						ĺ
					•	
					······································	
4.	Are there any aspects of these necessary standard((s)				YES 🔀 NO
				lf	yes, continue; othe	rwise skip to 6.
			_	_		
<u>5.</u>	Description of non-value added aspects of necess	ary	stand	da	ırd(s).	
					,	
6	Is the level of risk associated with the issue(s) co	nei	stant :	wi	ith management	·
6. peri	erformance goals assuming compliance with applicab					YES NO
•					f no continue; other	wise skip to 12.
					•	•
7.	Is there a non-required external standard which app	olie	s to t	thi	s issue?	YES NO
	•				yes, continue; other	

8. External sufficient standard citation	
O to the level of viet connected with the level(s) consistent with	
9. Is the level of risk associated with the Issue(s) consistent with management performance goals assuming compliance with the above	YES NO
(non-statutory) external standard?	otherwise skip to 12
10. Is an internal standard required to attain a level of risk consistent with management performance goals?	YES NO
11. Describe nature and status of internal sufficient standard.	
The Describe nature and statue of mornal camerant standard	
	
12. Describe how the levels of risk and cost are consistent with management	performance goals.
Past adherance to the statutory requirement in #3 has resulted in levels of ES&H and cost perform	
with management goals including the use of industrial standards for industrial hazards.	
13. Pick the basic implementing assumption from the list. Major positive impact	☐ Minor negative impact
☐ Minor positive impact ☑ No net impact	☐ Major negative impact
14. Describe the nature and status of implementation including cost-effective Experience has demonstrated that this program is both successful and cost-effective.	ness.
Emperience has define total and program to both outbooking and book oncome.	

		Issue origin 🛮 Hazard analysis 🔲 Ider	ntification Team
1.	Issue(s)		
121	 Other personne 	el hazards - housekeeping	ĺ
			1
	Focus group	☐ Emergency Management ☐ Fire Protection ☐ Occupational Safety	
		☐ Environmental Protection ☐ Management & Oversight ☐ Radiation Protection	
2.	is there a ne	ecessary standard which applies to this issue?	YES NO
	is there a no		
		If yes, continue; otherwis	se skip to 6.
_		· · · · · · · · · · · · · · · · · · ·	
3.	Necessary s	standard(s)	
	CFR 1926.25		
	CFR 1910.22		
	CFR 1910.106		
	CFR 1910.176		
29	CFR 1910.141		
			l
4.	Are there any	y aspects of these necessary standard(s) which do not add value?	TYES NO
		If yes, continue; otherwi	se skip to 6.
			•
5.	Description of	of non-value added aspects of necessary standard(s).	
ı			
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6	is the level	of risk associated with the issue(s) consistent with management	
		ils assuming compliance with applicable necessary standards?	YES NO
,			oo ekin ta 10
		If no continue; otherwis	se skip to 12.
7.	is there a no	on-required external standard which applies to this issue?	YES NO
		If yes, continue; otherwis	

3. External sufficient standard citation		
. Is the level of risk associated with the issue(s) con-		YES NO
nanagement performance goals assuming compliance w non-statutory) external standard?	ith the above If no continue; oth	erwise skin to 1
•	n no continue, on	ieiwise skip to 12
0. Is an internal standard required to attain a level of	risk consistent with	
nanagement performance goals?		YES NO
1. Describe nature and status of internal sufficient s	tandard.	
		•
	7	
2. Describe how the levels of risk and cost are considerated to the statutory requirements in #3 has resulted in levels.		
vith management goals including the use of industrial standards for i		ce that are consisten
3. Pick the basic implementing assumption from the li	st. Major positive impact	Minor negative impac
	☐ Minor positive impact☐ I☑ No net impact	Major negative impac
	Mo net impact	
4. Describe the nature and status of implementation		s.
xperience has demonstrated that this program is both successful a	nd cost-effective.	

If yes, continue; otherwise skip to 10.

1.	Issue(s)				ζ.	Issue	origin	1	☑ Hazard analysis	□ld	dentification Team
122 127	Other personn Other personn	el hazard	s - slips, trip	s & falls			<u></u>				
	Focus group		gency Mana onmental Pi				Oversig	ght	☑ Occupational ☐ Radiation Prot		
2.	Is there a ne	ecessary	standard	which a	applies to	this i		fу	es, continue; c	otherv	☑ YES □ NO Nowise skip to 6.
3.	Necessary s	standard	(s)								
29 (29 (DFR 1910.22 DFR 1926.25 DFR 1910.21 DFR 1910.23-30										
4.	Are there an	y aspect	s of these	e neces	sary stan	dard(s)			o not add valu yes, continue;		YES NO No Swise skip to 6.
5.	Description	of non-v	alue adde	ed aspe	cts of ne	cessar	y stanc	daı	rd(s).		
	,										
6. per								sa	th management ry standards? no continue; c	otherv	☑ YES ☐ NO wise skip to 12.
7.	Is there a no	on-requir	ed externa	al stand	ard whicl	n applie	es to ti	his	s issue?	-	YES NO

8. External sufficient standard citation	
9. Is the level of risk associated with the issue(s) consistent with	YES NO
management performance goals assuming compliance with the above	LI 1E3 LINO
(non-statutory) external standard? If no continue; oth	nerwise skip to 12
	·
10. Is an internal standard required to attain a level of risk consistent with management performance goals?	YES NO
11. Describe nature and status of internal sufficient standard.	
12. Describe how the levels of risk and cost are consistent with management per Past adherance to the statutory requirements in #3 has resulted in levels of ES&H and cost performant	
with management goals including the use of industrial standards for industrial hazards.	ice mai are consistent
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	Minor negative image
13. Pick the basic implementing assumption from the list. Major positive impact Minor positive impact	Minor negative impaci Major negative impaci
No net impact No	
de Desaille de selve end dadou de l'entermentalier l'enterme de l'enterme	_
14. Describe the nature and status of implementation including cost-effectivenes Experience has demonstrated that this program is both successful and cost-effective.	· · · · · · · · · · · · · · · · · · ·
Expendice has demonstrated that this program is both successful and cost-ellective.	

1.	Issue(s)	Issue	origi	n	🔀 Hazard analysi	s 🔲 ld	entification Team
	Other personal hazards - lifting and carrying heavy object	ts			··· <u></u>		
l							
F	ocus group Emergency Management Fire Pro	tection		_	☑ Occupationa	Safety	·
	☐ Environmental Protection ☐ Manage		Overs	igh			
2.	Is there a necessary standard which applies to	this is	ssue?	•			YES NO
				lf	yes, continue;	otherv	vise skip to 6.
3	Necessary standard(s)						
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							ļ.
· · · · · ·					<u>-</u>		
4.	Are there any aspects of these necessary stand	lard(s)	whic	h	do not add val	ue?	YES NO
7.	Ale there any aspects of most housearly stant						wise skip to 6.
					• .		•
5.	Description of non-value added aspects of nec	cessary	/ stai	nda	ard(s).		
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L							
6.	Is the level of risk associated with the issue(s)	consi	stent	w	ith managemen	t	KN VEC TING
	ormance goals assuming compliance with appl			288	ary standards?		YES NO
				ı	If no continue;	otherv	vise skip to 12.
7.	Is there a non-required external standard which	applie	s to	th	is issue?		YES NO
					,	otherw	rise skip to 10.

9. Is the level of risk associated with the issue(s) consistent with management performance goals assuming compliance with the above
(non-statutory) external standard?
10. Is an internal standard required to attain a level of risk consistent with
management performance goals?
11. Describe nature and status of internal sufficient standard.
Fermilab ES&H Manual Chapter 5084, Ergonomic Protection, was prepared as a consequence of the N&S standards
process. It formalizes the ongoing program of medical reviews, training, and work practice evaluations associated with the
lissue.
12. Describe how the levels of risk and cost are consistent with management performance goals.
Past adherance to the internal standard in #11 has resulted in levels of ES&H and cost performance that are consistent wi
Past adherance to the internal standard in #11 has resulted in levels of ES&H and cost performance that are consistent wi
Past adherance to the internal standard in #11 has resulted in levels of ES&H and cost performance that are consistent wi
Past adherance to the internal standard in #11 has resulted in levels of ES&H and cost performance that are consistent wi
Past adherance to the internal standard in #11 has resulted in levels of ES&H and cost performance that are consistent wi
Past adherance to the internal standard in #11 has resulted in levels of ES&H and cost performance that are consistent wi
Past adherance to the internal standard in #11 has resulted in levels of ES&H and cost performance that are consistent wi
Past adherance to the internal standard in #11 has resulted in levels of ES&H and cost performance that are consistent wi
Past adherance to the internal standard in #11 has resulted in levels of ES&H and cost performance that are consistent wi
Past adherance to the internal standard in #11 has resulted in levels of ES&H and cost performance that are consistent wi management goals.
Past adherance to the internal standard in #11 has resulted in levels of ES&H and cost performance that are consistent with management goals. 13. Pick the basic implementing assumption from the list. Major positive impact Minor negative impact
Past adherance to the internal standard in #11 has resulted in levels of ES&H and cost performance that are consistent with management goals. 13. Pick the basic implementing assumption from the list. Major positive impact Minor negative impact Major negative im
Past adherance to the internal standard in #11 has resulted in levels of ES&H and cost performance that are consistent with management goals. 13. Pick the basic implementing assumption from the list. Major positive impact Minor negative impact
Past adherance to the internal standard in #11 has resulted in levels of ES&H and cost performance that are consistent with management goals. 13. Pick the basic implementing assumption from the list. Major positive impact Minor negative impact Major negative im
Past adherance to the internal standard in #11 has resulted in levels of ES&H and cost performance that are consistent with management goals. 13. Pick the basic implementing assumption from the list. ☐ Major positive impact ☐ Minor negative impact ☐ Minor positive impact ☐ Major negative impact ☐ Mosor negative imp
Past adherance to the internal standard in #11 has resulted in levels of ES&H and cost performance that are consistent with management goals. 13. Pick the basic implementing assumption from the list. Major positive impact Minor negative impact Minor positive impact Major negative impact Major negative impact 14. Describe the nature and status of implementation including cost-effectiveness. The internal standards identified in #11 have proven to be both successful and cost-effective. When it is approved in the
Past adherance to the internal standard in #11 has resulted in levels of ES&H and cost performance that are consistent with management goals. 13. Pick the basic implementing assumption from the list. ☐ Major positive impact ☐ Minor negative impact ☐ Minor positive impact ☐ Major negative impact ☐ Moreous impa
Past adherance to the internal standard in #11 has resulted in levels of ES&H and cost performance that are consistent with management goals. 13. Pick the basic implementing assumption from the list. Major positive impact Minor negative impact Minor positive impact Major negative impact Major negative impact 14. Describe the nature and status of implementation including cost-effectiveness. The internal standards identified in #11 have proven to be both successful and cost-effective. When it is approved in the
Past adherance to the internal standard in #11 has resulted in levels of ES&H and cost performance that are consistent with management goals. 13. Pick the basic implementing assumption from the list. Major positive impact Minor negative impact Minor positive impact Major negative impact Major negative impact 14. Describe the nature and status of implementation including cost-effectiveness. The internal standards identified in #11 have proven to be both successful and cost-effective. When it is approved in the

1.	Issue(s)	Is	sue o	rigin	☐ Hazard analys	is 🔀 lo	lentification Team
	<u> </u>	al hazards - pinch points					
124	. Other mechanic	a nazarus - pinon points					
							·
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	Focus, group	☐ Emergency Management ☐ Fire Protect			☑ Occupationa		
		☐ Environmental Protection ☐ Manageme	ent & O	versigh	t □ Radiation Pr	otection	
2.	Is there a nee	cessary standard which applies to th	his iss	ue?			YES NO
				lf	yes, continue;	otherv	wise skip to 6.
							-
3.	Necessary st	andard(s)					
29 (CFR 1910 Subpart	0	,		·		
29 (CFR 1910 Subpart	P					
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<u> </u>							
4.	Are there any	aspects of these necessary standar	rd(s) v	vhich	do not add val	ue?	TYES NO
				lf	yes, continue	; other	wise skip to 6.
5.	Description o	f non-value added aspects of neces	ssary	stand	ard(s).		
							į
١,		•					
Ь							
6.		f risk associated with the issue(s) o					¥YES □ NO
per	formance goal	s assuming compliance with applic	able r		-		
					If no continue;	other	wise skip to 12.
7.	Is there a no	n-required external standard which a	pplies	to th	is issue?		YES NO
		-				otherv	vise skip to 10.
					•		-

8. External sufficient standard citation	
9. Is the level of risk associated with the issue(s) consistent with management performance goals assuming compliance with the above	YES NO
(tatitami) automal atandand0	otherwise skip to 12.
	·
10. Is an internal standard required to attain a level of risk consistent with	YES NO
management performance goals?	
11. Describe nature and status of internal sufficient standard.	
<u> </u>	
12. Describe how the levels of risk and cost are consistent with management	
Past adherance to the statutory requirements in #3 has resulted in levels of ES&H and cost performent management goals including the use of industrial standards for industrial hazards. The assoc	
proper guarding and clearences.	J
	·
13. Pick the basic implementing assumption from the list. Major positive impact	☐ Minor negative impact
☐ Minor positive impact ☑ No net impact	☐ Major negative impact
14. Describe the nature and status of implementation including cost-effective Adherence to machine guarding requirements has been well addressed at the Laboratory. Through	
verification all machines have been inspected, and guarded. Machines built and purchased prior to	the current legal
requirements had guards designed and affixed. Experience has demonstrated that this program is cost-effective.	s both successful and

If yes, continue; otherwise skip to 10.

				Issue	origin	Hazard analysis	☐ Identification Team
1.	Issue(s)						
125.	. Other persona	l hazards - re	petitive motion				
							j
<u></u>							
ı	Focus agroup			☐ Fire Protection			
		LI Environn	ental Protection	☐ Management	& Oversig	ht Radiation Prot	tection
2.	Is there a ne	ecessary st	andard which	applies to this			YES NO
					H	yes, continue; o	otherwise skip to 6.
_	N						
3.	Necessary s	standard(s)					
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<u> </u>							
4.	Are there any	y aspects o	of these neces	ssary standard(s	-	do not add valu	
					1	If yes, continue;	otherwise skip to 6.
5.	Description o	of non-valu	e added aspe	ects of necessa	ry stanc	dard(s).	
						r	
<u> </u>					•		
6.	is the level	of risk ass	ociated with t	he issue(s) con	sistent v	with management	F V(50 F) V(5
						sary standards?	X YES NO
						If no continue;	otherwise skip to 12.
7.	Is there a no	on-required	external stand	dard which appl	ies to t	his issue?	YES NO

8. External sufficient standard citation	
ANSI Z365 (draft)	
O to the level of risk proposited with the icous(s) consistent with	
9. Is the level of risk associated with the issue(s) consistent with management performance goals assuming compliance with the above	X YES INO
4 Late taxabase and administration of the state of the st	ontinue; otherwise skip to 12.
ii no c	ontinue, otherwise skip to 12.
10. Is an internal standard required to attain a level of risk consistent	with XYES NO
management performance goals?	
11. Describe nature and status of internal sufficient standard.	
Fermilab ES&H Manual Chapter 5084, Ergonomic Protection, was prepared as a consequence	uence of the N&S standards
process. This standard is based on successful and cost-effective internal past practice	
standard cited in #8).	
	·
	·
·	
12. Describe how the levels of risk and cost are consistent with mana	gement performance goals.
Past adherance to the practices in #11 has resulted in levels of ES&H and cost performa	ance that are consistent with
management goals.	
·	
13. Pick the basic implementing assumption from the list. Major positiv	ve impact
☐ Minor positiv	e impact 🔲 Major negative impact
No net impa	ct
14. Describe the nature and status of implementation including cost-	effectiveness.
Experience has demonstrated that this program is both successful and cost-effective. V	
approved in the N&S process, internal implementation programs may be modified to be c	ompatible with this standard.
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1.		ori	gin	Hazard analysis □ Ide	entification Team
	29. Other personnel hazards - vacuum tanks				
	Focus group ☐ Emergency Management ☐ Fire Protection			☑ Occupational Safety	
	☐ Environmental Protection ☐ Management &		rsiah		
2.	. Is there a necessary standard which applies to this i	ssue	?		☐ YES MO
	при и пососом, станали и при при пососом пососо			yes, continue; otherw	
				yes, continue, otherw	ise skip to 6.
3.	. Necessary standard(s)			•	
				 	
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					İ
4.	. Are there any aspects of these necessary standard(s)	wh	ich	do not add value?	YES NO
4.	. Are there any aspects of these necessary standard(s)	4411		f yes, continue; otherv	
			•	yes, somanas, sancri	rice skip to v.
5.	. Description of non-value added aspects of necessar	v st	and	ard(e)	
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L	<u> </u>				
6.	· · · · · · · · · · · · · · · · · · ·				YES NO
per	erformance goals assuming compliance with applicable	ne		·	<u> </u>
				If no continue; otherw	use skip to 12.
7.	. Is there a non-required external standard which appli	es t	o th	nis issue?	☐ YES X NO
			if	yes, continue; otherwi	

8. External sufficient standard citation	
9. Is the level of risk associated with the issue(s) consistent with	YES NO
management performance goals assuming compliance with the above (non-statutory) external standard?	
(non-statutory) external standard?	e skip to 12
10. Is an internal standard required to attain a level of risk consistent with	
management performance goals?	YES NO
11. Describe nature and status of internal sufficient standard.	
Fermilab ES&H Manual chapter 5033, Vacuum Vessel Safety, and a number of Fermilab Technical Memos have	
and in force for several years. These were written to specifically address the vacuum hazards at Fermilab and the potential risks.	d to minimize
12. Describe how the levels of risk and cost are consistent with management performa	
Past adherance to the internal standard in #11 has resulted in levels of ES&H and cost performance that are management goals.	consistent with
management geate.	
	:
13. Pick the basic implementing assumption from the list. ☐ Major positive impact ☐ Minor n	egative impact
☐ Minor positive impact ☐ Major n	egative impact
■ No net impact	
14. Describe the nature and status of implementation including cost-effectiveness.	
The internal standards identified in #11 have proven to be both successful and cost-effective.	,

			Issue	origin	Hazard analysis	☐ Identification Team
1.	Issue(s)					
130	. Other persona	hazards - vibration				
						į
	Focus group	☐ Emergency Management	☐ Fire Protection			Safety
	3	☐ Environmental Protection		Oversigh		
2.	is there a ne	ecessary standard which	applies to this is	ssue?		¥ YES □ NO
					vas continuos o	therwise skip to 6.
					yes, continue, o	therwise skip to 6.
3.	Necessary s	standard(s)				
-	1100000001,					
					•	
						,
,						
					•	
4	Are there on	y aspects of these nece	neary standard(a)	which	do not add value	? YES NO
4.	Are there an	y aspects of these nece	ssary stanuaru(s)			otherwise skip to 6.
				•	i yes, continue, t	otherwise skip to o.
_	Danadatian				lawal(a)	
5.	Description	of non-value added aspo	ects of necessary	Stand		
			•			
	lo the level	of risk apposited with t	ha iceua/a) acrai	etent	with management	
6. ner		of risk associated with t Is assuming compliance				X YES NO
PGI	.0111106 g0a	io accaming combinance	apprount			otherwise skip to 12.
					n no continue; o	miciwise skip to 12.
7.	Is there a no	on-required external stan	dard which applie			☐ YES ☐ NO
				lf	yes, continue; of	therwise skip to 10.

8. External sufficient standard citation	
ACGIH TLV for hand-arm segmental vibration	
9. Is the level of risk associated with the issue(s) consistent with management performance goals assuming compliance with the above	☐ YES ☐ NO
A STATE AND A STATE OF THE STAT	athamuina akin ta 40
in no continue;	otherwise skip to 12.
10. Is an internal standard required to attain a level of risk consistent with	☐ YES ☐ NO
management performance goals?	<u> </u>
11. Describe nature and status of internal sufficient standard.	
11. Describe nature and status of internal sufficient standard.	
	j
12. Describe how the levels of risk and cost are consistent with management	performance goals.
Although there have been no recognized cases of vibration-related illness at Fermilab, exposures	
fairly commonplace. The ACGIH TLV was selected because it serves as the generally-recognized	consensus standard for
industrial hygiene hazards which do not have a statutory requirement. This meets the management	nt performance goal to use
industrial standards for industrial hazards.	
	İ
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Major positive impost	Minor possible impact
13. Pick the basic implementing assumption from the list. Major positive impact	☐ Major negative impact
☑ No net impact	_ major nogativo impaot
14. Describe the nature and status of implementation including cost-effective	eness.
In the opinion of the Fermilab subject-matter experts, compliance with the ACGIH TLV for vibration	
successful and cost-effective. The limits will be applied as guides in accordance with the cited sta	
standard is approved in the N&S process, appropriate internal programs will be developed and imp	
	i i

		Issue origin 🗷 Hazard analysis 🔲 Identification Team
1.	Issue(s)	
132	. Other personn	el hazards - working at heights
	Focus group	☐ Emergency Management ☐ Fire Protection ☑ Occupational Safety
	rocus group	☐ Environmental Protection ☐ Management & Oversight ☐ Radiation Protection
2.	le thore a ne	ecessary standard which applies to this issue?
۷.	is there a ne	
		If yes, continue; otherwise skip to 6.
3.	Necessary s	standard(s)
		nandaru(ə)
	OFR 1926.104 OFR 1926.500-50	ng .
	CFR 1910 Subpa	
	CFR 1910.252(b)	
	,	
1		
ŀ		
4.	Are there an	y aspects of these necessary standard(s) which do not add value?
		If yes, continue; otherwise skip to 6.
5.	Description	of non-value added aspects of necessary standard(s).
Г	•	
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l	`	
L		
6.	is the level	of risk associated with the issue(s) consistent with management
		Is assuming compliance with applicable necessary standards?
		If no continue; otherwise skip to 12.
		its seminas, emerando onip to 12.
7.	Is there a no	on-required external standard which applies to this issue?
		If yes, continue; otherwise skip to 10.

. External sufficient standard citation	,	
	·	
. Is the level of risk associated with the issue(s) cons	istent with	YES NO
nanagement performance goals assuming compliance with	th the above	
non-statutory) external standard?	If no continue; o	otherwise skip to 1
0. Is an internal standard required to attain a level of nanagement performance goals?	risk consistent with	☐ YES ☐ NO
•		
1. Describe nature and status of internal sufficient st	andard.	
2. Describe how the levels of risk and cost are consis	tent with management p	erformance goals.
ast adherance to the statutory requirements in #3 has resulted in lever rith management goals including the use of industrial standards for in	els of ES&H and cost perform	
	•	
		· · · · · · · · · · · · · · · · · · ·
3. Pick the basic implementing assumption from the lis	Major positive impact [Minor positive impact [☑ Minor negative impac ☑ Maior negative impac
	No net impact ■ No net impact ■ No net impact ■ No net impact No	
4. Describe the nature and status of implementation		ess.
xperience has demonstrated that this program is both successful ar	nd cost-effective.	

1. issue(s)	Issue origin	Hazard analysis □	dentification Team
133. Radiation - radioactive contamination			
133. Radiation - radioactive contamination			
1141A. Radiation - residual contamination			
141A. hadiation - residual contamination			
			İ
		· .	
Focus group	otection	☐ Occupational Safet	lv
J . – J , J –		ht 🛮 Radiation Protectio	
2. Is there a necessary standard which applies to	this issue?		YES NO
	1	f yes, continue; other	wise skip to 6
		,,	o on p to or
3. Necessary standard(s)			
			·
10 CFR 835.603			
10 CFR 835.404			
10 CFR 835.1101			
10 CFR 835 Appendix D			
<u> </u>			
4. Are there any aspects of these necessary stan	dard(s) which	do not add value?	YES NO
		If yes, continue; othe	rwise skip to 6.
			•
C. Description of non-volve added connects of no		doud(o)	
5. Description of non-value added aspects of ne		·	
The documentation requirements of 10 CFR 835.1101.(d) do r			
of individual items released from Contamination Areas with co			
addition they result in the collection of the documentation in ar			
site-specific flexibility, can achieve a sufficient level of control	in a more cost-	effective manner. A reque	est for an
exemption from Subpart 10 CFR 835.1101(d) should be subm	itted to allow for	a more reasonable, cost-e	ffective
documentation procedure.			
·			
		•••	
6. Is the level of risk associated with the issue(s			YES NO
performance goals assuming compliance with app	olicable neces	sary standards?	
		If no continue; other	wise skip to 12.
		,	•
7. Is there a non-required external standard which	h applies to t	his issue?	YES NO
	If	yes, continue; other	wise skip to 10.

8. External sufficient standard citation	
9. Is the level of risk associated with the issue(s) consistent with management performance goals assuming compliance with the above	☐YES ☐NO
(non-statutory) external standard? If no continue; other	erwise skip to 12
10. Is an internal standard required to attain a level of risk consistent with management performance goals?	YES NO
11. Describe nature and status of internal sufficient standard.	
12. Describe how the levels of risk and cost are consistent with management performance of the regulatory requirements provides a new level of control of radioactive contamination in a manner consistent with general industry practice. The consistent with management performance goals because management expects to use industrial solution issues. This is an industrial issue and the solution chosen is an industrial solution.	essary and sufficient level of risk is
	<u></u>
13. Pick the basic implementing assumption from the list. ☐ Major positive impact ☐ M Minor positive impact ☐ M ☐ No net impact	linor negative impact lajor negative impact
14. Describe the nature and status of implementation including cost-effectiveness	
Program implementation is in progress by means of the policies of the Fermilab Radiological Control Mar cost-effectiveness would be improved if the exemption request described concerning 10 CFR 835.1101 the above standard is approved in the N&S process, internal implementation programs may be modified with this standard.	nual. The is approved. When

1. lssue(s)		Issue origin	🛮 Hazard analysis 🗗	Identification Team
	nuclear materials (SNM) and nuc	lear materials		
134 / 142. Hadiation - special i	dicteal materials (SNM) and nuc	ieai matenais		
				·
				
Focus group Emerg	gency Management 🔲 Fire Pro	otection	Occupational Saf	ety
☐ Enviro	onmental Protection	ement & Oversigh	t 🛛 Radiation Protect	ion
2. Is there a necessary	standard which applies to	this issue?		X YES NO
_	7	If	yes, continue; oth	· · · · · · · · · · · · · · · · · · ·
		••	yoo, oonanac, oan	citilise skip to o.
3. Necessary standard(s)			
Atomic Energy Act	-,			
Atomic Energy Act				
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•				·
	•			
		·		
4. Are there any aspect	s of these necessary stan			YES X NO
		If	yes, continue; oth	nerwise skip to 6.
5. Description of non-v	alue added aspects of ne	ecessary stand	ard(s).	
-				
_				
6. Is the level of risk a	ssociated with the issue(s	s) consistent w	ith management	FIVE BUO
	ning compliance with app			YES NO
			lf no continue; oth	erwise skip to 12.
			`	-
7 la though a man un un un	ad aviernal attendand which	h annlies to th	ia iagua?	
7. Is there a non-require	ed external standard which			YES NO
		IT	yes, continue; other	erwise skip to 10.

8. External sufficient standard citation	
9. Is the level of risk associated with the issue(s) consistent with	
9. Is the level of risk associated with the issue(s) consistent with management performance goals assuming compliance with the above	YES X NO
/ Littury contained about and 0	otherwise skip to 12.
	•
10. Is an internal standard required to attain a level of risk consistent with	Marca Elva
management performance goals?	X YES NO
11. Describe nature and status of internal sufficient standard.	
Fermilab ES&H Section Specific Quality Implementation Plan (SQIP) RPS.8 constitutes an internal	standard on nuclear
material and special nuclear material based on DOE Orders 5633.3B, 5634.1B, 5632.1C, and 5660.	
12. Describe how the levels of risk and cost are consistent with management p	
SQIP RPS.8 provides requirements mostly equivalent to those required by the NRC as applied to ge	
level of risk is consistent with management performance goals because mananagement expects to for industrial issues and the level of cost and risk in this internal standard is consistent with that of in	
NRC.	nodotnoo andor trio
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	. '
13. Pick the basic implementing assumption from the list. Major positive impact	☐ Minor negative impact
☐ Minor positive impact [☐ Major negative impact
☑ No net impact	
14. Describe the nature and status of implementation including cost-effectiven	1926
Fermilab has implemented successful and cost-effective programs to assure acceptable performan	
and special nuclear materials.	
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	I (a)	Issue origin A Hazard analysis I Identification Team
1.	Issue(s)	
	. Radiation - mix	
140	. Radiation - radi	oactive waste
l		·
l		
	Focus group	☐ Emergency Management ☐ Fire Protection ☐ Occupational Safety
•		☐ Environmental Protection ☐ Management & Oversight ☒ Radiation Protection
_		
2.	is there a ne	cessary standard which applies to this issue?
		If yes, continue; otherwise skip to 6.
3.	Necessary s	tandard(s)
WH	C-EP-0063 Rev (or equivalent that might receive FNAL wastes)
	CFR 260-270	
		see hazardous waste regs.)
	•	
ŀ		
l		
4.	Are there any	aspects of these necessary standard(s) which do not add value?
	,	If yes, continue; otherwise skip to 6.
		in yes, continue, otherwise skip to 0.
5.	Description of	f non-value added aspects of necessary standard(s).
The	State of Washing	gton categorizes many forms of waste as mixed waste inconsistent with the Resource Conservation
and	Recovery Act (R	CRA). This increases the cost significantly. Correction of this, however, would require revision of the
Stat	e of Washington	Administrative Code (WAC).
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1		
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6.	is the level o	of risk associated with the issue(s) consistent with management
		s assuming compliance with applicable necessary standards?
L		
		If no continue; otherwise skip to 12.
7.	Is there a no	n-required external standard which applies to this issue?
••		If yes, continue; otherwise skip to 10.
		ii joo, continue, chici wide skip to to.

8. External sufficient standard citation	
· ·	
9. Is the level of risk associated with the issue(s) consistent with management performance goals assuming compliance with the above (non-statutory) external standard?	YES NO
in no continue, one	IWISE SKIP (U 12.
10. Is an internal standard required to attain a level of risk consistent with management performance goals?	YES NO
11. Describe nature and status of internal sufficient standard.	
	·
	į
12. Describe how the levels of risk and cost are consistent with management perfo	rmance doale
The level of risk is consistent with performance goals except for the comment noted regarding the proble	ms posed by
provisions of the WAC. The level of risk is consistent with management performance goals because ma	
to use industrial solutions for industrial issues. This is an industrial issue and the solution chosen is an i	industrial solution.
·	
13. Pick the basic implementing assumption from the list. ☐ Major positive impact ☐ Mi	nor negative impact
☐ Minor positive impact ☐ Mi	ajor negative impact
No net impact No	
14. Describe the nature and status of implementation including cost-effectiveness.	
The program is implemented by means of the Fermilab ES&H Manual Chapter 8020 and 8021, the Fermila Control Manual, and the Fermilab Low Level Waste Certification Plan.	

1. Issue(s)	Issue origin	■ Hazard analysis
136. Radiation - prompt radiation		
100. Hadiation - prompt radiation		
	•	
Focus group	rotection	☐ Occupational Safety
		ht Radiation Protection
<u> </u>		
2. Is there a necessary standard which applies t	o this issue?	☑ YES □ NO
	If	yes, continue; otherwise skip to 6.
		•
3. Necessary standard(s)		
10 CFR 835.501-502		
10 CFR 835.601-603		
•		
		•
4 Ave there any consider of these passessments		do not odd walweg.
4. Are there any aspects of these necessary sta		do not add value?
	•	yes, commue, otherwise skip to 0.
5. Description of non-value added aspects of n	ecessary stand	lard(s).
10 CFR 835.603(c) specifies the lower threshold of a "Very Hi		
value in controlling worker dose equivalent. It is too high, wel		
exemption lowering this threshold to some more workable ope		
requirement in 835.601(c) to use only DOE-approved signs ac produced for , e.g., NRC licensees. Furthermore, because si		
produced for , e.g., file hoonees. Tarmemore, because s	don signs have to	be special ordered, the costs are mereased.
6. Is the level of risk associated with the issue((e) consistent w	with management
6. Is the level of risk associated with the issue performance goals assuming compliance with ap		
	•	If no continue; otherwise skip to 12.
		,
7. Is there a non-required external standard which	th applies to the	nis issue?
a non require external evaluation fills	• •	yes, continue; otherwise skip to 10.

8. External sufficient standard citation
9. Is the level of risk associated with the issue(s) consistent with
management performance goals assuming compliance with the above
(non-statutory) external standard? If no continue; otherwise skip to 1
10. Is an internal standard required to attain a level of risk consistent with management performance goals? ☐ YES ☐ NO
management performance goals:
11. Describe nature and status of internal sufficient standard.
12. Describe how the levels of risk and cost are consistent with management performance goals.
With the approval of the exemptions discussed above, the level of risk remaining upon implementation of the regulatory requirement is consistent with and sufficient to meet management goals. (Also see issue "Safety Analysis Documentation"
as it is related to prompt radiation issues.) The level of risk is consistent with management performance goals because
management expects to use industrial solutions for industrial issues. This is an industrial issue in that the regulations cited
are essentially equivalent to the requirements imposed on general industry.
13. Pick the basic implementing assumption from the list. Major positive impact Minor negative impact Minor negative impact Major negative impact
No net impact
14. Describe the nature and status of implementation including cost-effectiveness.
This program is already implemented through Laboratory policies in the Fermilab Radiological Control Manual that also reflect various guidance documents developed by the accelerator radiation protection community including SLAC-327
"Health Physics Manual of Good Practices for Accelerator Facilities" and DOE Order 5480.25 and its guidance.
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If yes, continue; otherwise skip to 10.

4	Issue(s)				issue	origin	Hazard analysis ✓ Id	entification Team
1. ਬਿਨਤ	. Radiation - rad	dioactive co	uroos					_
137	, naulation - lac	iluactive su	uices				v	
<u> </u>								
	Focus group		ency Manageme			Oversial	☐ Occupational Safetyht ☑ Radiation Protection	
		LI LIIVII O	mona, i rotos.	on <u>a</u> manago		O TOTOIG!	1 Indianor Trotochor	
2.	le there a ne	ecessary	standard whic	h applies to	this is	ssue?		☐ YES 🗷 NO
۷.	is there a ne	Joessui y	Juliaura Wille	п аррпоо то			voo continue etheru	
						11	yes, continue; otherw	rise skip to 6.
3.	Necessary s	standard(s	.)					
						<u></u>		
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4.	Are there an	v aspects	of these ned	essarv stand	iard(s)	which	do not add value?	YES NO
••	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	,		, , , , , , , , , , , , , , , , , , , ,			f yes, continue; other	
5.	Description	of non-va	lue added as	pects of nec	cessary	y stand	lard(s).	
				<u></u>				
								` ,
a .								
		_						
c	lo the level	of riots of	conicted with	the leave(-)		iotost -	with management	
6. per							with management sary standards?	YES X NO
L-,							If no continue; otherw	ise skip to 12
							comming, official	omp to 12.
7	lo thous s ==	.m rae!	d avtarmal -t-	ndord which	on nii		nia lagua?	17.750 - 1.5
7.	is there a no	on-require	d external sta	ındara which	appile	es to th	nis issue?	☐ YES 🔀 NO

8. External sufficient standard citation	
O to the level of viels experienced with the issue(s) consistent with	
9. Is the level of risk associated with the issue(s) consistent with management performance goals assuming compliance with the above	YES X NO
/ I I I I I I I I I I I I I I I I I I I	tinue; otherwise skip to 12.
	•
10. Is an internal standard required to attain a level of risk consistent wi	th
management performance goals?	YES NO
11. Describe nature and status of internal sufficient standard.	
 Describe nature and status of internal sufficient standard. Fermilab Radiological Control Manual Articles (FRCM) 365 and FRCM Chapter 4 Part 3 consi 	titute an internal standard.
These Fermilab policies are based on and are consistent with DOE N5400.9.	
12. Describe how the levels of risk and cost are consistent with manage. The internal standard adequately protects against loss, damage, or unauthorized exposure	
Such a standard is needed to assure proper usage and control of radioactive sources in a re	
large numbers of such sources are used in a variety of ways as part of the physics research	
	İ
13. Pick the basic implementing assumption from the list. Major positive in	mpact Minor negative impact
☐ Minor positive in	mpact
No net impact No	
44 Describe the nature and status of implementation includes and of	aativaaaa
14. Describe the nature and status of implementation including cost-eff. The program has already been implemented by means of the cited portions of the Fermilab F	
When the above standard is approved in the N&S process, internal implementation programs	
compatible with this standard.	Ī

If yes, continue; otherwise skip to 10.

	Issue oriain	■ Hazard analysis	dentification Team
1. Issue(s)		Z	donanouton (cam
139. Radiation - radioactive liquids and gases			
Focus group		☐ Occupational Safe	
☐ Environmental Protection ☐ Mana	igement & Oversigl	nt 🛮 Radiation Protectio	n
2. Is there a necessary standard which applies	to this issue?		X YES NO
	If	yes, continue; other	wise skip to 6.
3. Necessary standard(s)			
10 CFR 835.209 10 CFR 835.603			
10 CFR 835.1101			
10 CFR 835 Appendices A- C			
			•
<u> </u>			
	6.		
4. Are there any aspects of these necessary sta	• •		YES NO
	ı	f yes, continue; othe	rwise skip to 6.
E Baradakian of manusalus added assesses of		1	
5. Description of non-value added aspects of	necessary stand	aro(s).	
See comment cited with respect to # 133.		•	
6. Is the level of risk associated with the issue			YES NO
performance goals assuming compliance with a	oplicable necess	-	
		If no continue; other	wise skip to 12.
7 le there a non-required external etandard whi	ch annlies to th	ie ieeuo?	T VEC MINO

8. External sufficient standard citation	
9. Is the level of risk associated with the issue(s) consistent with management performance goals assuming compliance with the above	YES NO
(non-statutory) external standard? If no continue; oth	erwise skip to 12.
10. Is an internal standard required to attain a level of risk consistent with management performance goals?	XYES NO
11. Describe nature and status of internal sufficient standard.	
Fermilab Radiological Control Manual Article 349 contains procedures needed to control radioactive liq	uids and gases in
accelerator components. This constitutes an internal standard.	
12. Describe how the levels of risk and cost are consistent with management perf	ormance goals.
The regulation and the internal standard will adequately address the identified issue. The level of risk i management performance goals because management expects to use industrial solutions for industrial	
industrial issue and the solution chosen is an industrial solution.	issues. This is all
,	
13. Pick the basic implementing assumption from the list. ☐ Major positive impact ☐ Minor positive impact ☐ M	linor negative impact
☑ No net impact	najor negative impact
14. Describe the nature and status of implementation including cost officialisms	
14. Describe the nature and status of implementation including cost-effectiveness. The program is presently implemented as set forth in the Fermilab Radiological Control Manual. When the second of the control of the	he above standard is
approved in the N&S process, internal implementation programs may be modified to be compatible with	this standard.
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1.	Issue(s)		Issue	origin	Hazard analysis □	Identification Team
		aldred and the				· · · · · · · · · · · · · · · · · · ·
	B. Radiation - re					
143	s. Hadiation - sto	rage and håndling of radioa	ctive materials			ļ
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						1
L						
	Focus group	Emergency Managemer	t Tire Protection		☐ Occupational Safe	tv
	r ocus Group			Overeigi	nt 🔀 Radiation Protection	
		L LIMITORING I TOLECTIC	II I wanayement o	Oversign	n Minaulation Frotection	/II
2.	Is there a ne	cessary standard which	applies to this is	ssue?		¥ YES □ NO
				14	yes, continue; othe	
				11	yes, continue, othe	I WISE SKIP IU O.
_	Nana -	to widowal(a)				
3.	Necessary s	tandard(s)	· · · · · · · · · · · · · · · · · · ·			, , , , , , , , , , , , , , , , , , ,
	CFR 835.601-603			-		
	CFR 835.501-502	_				
	CFR 835 Appendia					
10 (CFR 835 Appendix	(C				
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	•					
		<u>-</u>				
_	_					
4.	Are there any	aspects of these nec	essary standard(s)			☐ YES 🔀 NO
				ŀ	f yes, continue; othe	erwise skip to 6.
5.	Description of	f non-value added asp	ects of necessary	, stand	ard(s)	
J.	Description C	i iivii-value auueu as	recta di necessaly	Janu	u. u(ə).	
						j
						ļ
			r.			
						1
6.	Is the level o	f risk associated with	the issue(s) consi	stent v	vith management	
-		s assuming compliance				YES X NO
,					-	nuico ekin to 10
					If no continue; othe	iwise skip to 12.
7.	Is there a no	n-required external star	ndard which applie	s to th	nis issue?	YES NO
• •			applic			
					yes, continue; other	wise skip to 10.

8. External sufficient standard citation
9. Is the level of risk associated with the issue(s) consistent with
management performance goals assuming compliance with the above (non-statutory) external standard? If no continue otherwise skip to 19
(non-statutory) external standard? If no continue; otherwise skip to 12
10. Is an internal standard required to attain a level of risk consistent with management performance goals? ☑ YES ☐ NO
management performance goals:
11. Describe nature and status of internal sufficient standard.
Fermilab Radiological Control Manual Article 411.
DOE has approved Fermilab criteria for the release of material which is determined to be nonradioactive. These criteria are needed to augment the cited regulatory requirements which do not embody such release criteria. It is presently
incorporated into Article 411 of the Fermilab Radiological Control Manual and thus exists as an internal standard.
12. Describe how the levels of risk and cost are consistent with management performance goals.
The standards cited above, including the internal standard, provide a necessary and sufficient level of control of
radioactive materials. Specifically, a net gain in cost-effectiveness is gained if the concept of the Radioactive Materials
Management Area (RMMA), nowhere defined in regulations, is eliminated. At Fermilab RMMAs are redundant with other types of radiological areas defined by 10 CFR 835. The corresponding Fermilab policies on RMMAs add no value and their
elimination will improve cost-effectiveness and simplify the radiological control program.
Major positive import Major positive import Major positive import
13. Pick the basic implementing assumption from the list. Major positive impact Minor negative impact Major negative impact Major negative impact
□ No net impact
14. Describe the nature and status of implementation including cost-effectiveness.
• • • • • • • • • • • • • • • • • • • •
The program to implement these standards is presently in place as expressed in the Fermilab Radiological Control Manual.
The program to implement these standards is presently in place as expressed in the Fermilab Radiological Control Manual. A major improvement in cost-effectiveness can be realized by implementing the actions specified in 12. When the above
The program to implement these standards is presently in place as expressed in the Fermilab Radiological Control Manual. A major improvement in cost-effectiveness can be realized by implementing the actions specified in 12. When the above standard is approved in the N&S process, internal implementation programs may be modified to be compatible with this
The program to implement these standards is presently in place as expressed in the Fermilab Radiological Control Manual. A major improvement in cost-effectiveness can be realized by implementing the actions specified in 12. When the above

			Issue	origin	■ Hazard analysis	tification Team
1.	Issue(s)	y bank and UPS equipment				
1144	. Thermai - balle	y bank and OFS equipment				
						ł
	Focus group	☐ Emergency Management ☐ Fire	Protection		☑ Occupational Safety	
		☐ Environmental Protection ☐ Mana	agement &	Oversig	nt Radiation Protection	
2.	is there a ne	cessary standard which applies	to this is	ssue?	D	YES NO
				if	yes, continue; otherwis	se skip to 6.
_	Nananana a	*************				
3.	Necessary s	tandard(s)				
29 (CFR 1910.178(g)					
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1						
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l						,
l						į.
Щ						
4.	Are there any	y aspects of these necessary sta	andard(s)		<u> </u>	YES NO
				ľ	f yes, continue; otherwi	se sкір to 6.
5.	Description	of non-value added aspects of	necessar	v etand	lard(e)	
<u>5.</u>	Description	non-value added aspects of	ilecessar	y staire	<u> </u>	
Ì						
İ						
6.	is the level	of risk associated with the issue	e(s) cons	istent v	vith management	AVEC FINO
	formance goa	ls assuming compliance with a	pplicable	neces	sary standards?	YES NO
					If no continue; otherwis	se skip to 12.
7.	Is there a no	n-required external standard whi	ich applie		Carrier Control of Carrier Contr	YES NO
				lf	yes, continue; otherwis	e skip to 10.

8. External sufficient standard citation	
9. Is the level of risk associated with the issue(s) consistent with management performance goals assuming compliance with the above	YES NO
(non-statutory) external standard? If no continue; other	nerwise skip to 12.
10. Is an internal standard required to attain a level of risk consistent with management performance goals?	YES NO
11. Describe nature and status of internal sufficient standard.	
12. Describe how the levels of risk and cost are consistent with management per	
Past adherance to the statutory requirements in #3 has resulted in levels of ES&H and cost performar with management goals including the use of industrial standards for industrial hazards. The associate proper segregation, clearences, and training.	
Major positivo impost	Minor populire import
13. Pick the basic implementing assumption from the list. ☐ Major positive impact ☐ ☐ Minor positive impact ☐	Major negative impact
No net impact ■	
14. Describe the nature and status of implementation including seat affectiveness	
14. Describe the nature and status of implementation including cost-effectiveness Segregated work areas for battery storage have been addressed at the Laboratory. Battery changing	
but through supervisory training well addressed. Experience has demonstrated that this program is b cost-effective.	

	Issue(s)	Issue	origin	Hazard analysis ☐ I	dentification Team
1.	5. Thermal - cold work environments	<u> </u>			
145	5. Thermal - cold work environments				
1					
}					1
Щ.					
-	Focus group		_	☑ Occupational Safet	
	☐ Environmental Protection ☐ Man	agement &	Oversig	nt Radiation Protection	n
			ę.		
2.	Is there a necessary standard which applies	to this is	ssue?		YES INO
			lf	yes, continue; other	wise skip to 6.
3.	Necessary standard(s)				
l					
1					
1					
		· · · · · · · · · · · · · · · · · · ·			
4.	Are there any aspects of these necessary st	andard(s)	which	do not add value?	YES X NO
			.]	f yes, continue; othe	
5.	Description of non-value added aspects of	necessar	y stanc	lard(s).	
Ì					
<u> </u>					
6.	Is the level of risk associated with the issue	e(s) cons	istent v	vith management	
	rformance goals assuming compliance with a				X YES NO
•		-		If no continue; other	wise skip to 12.
				, 	
7	le there a new yearshed automat atandard with	lab ===!!:		hio ioous?	
7.	Is there a non-required external standard wh	ich applie			YES NO
			lf	yes, continue; other	wise skip to 10.

B. External sufficient standard citation ACGIH TLV for cold stress		
COIFT LEVIOLCOID SILESS		
. Is the level of risk associated with the issue(s) cons	istent with	
nanagement performance goals assuming compliance wi		YES NO
non-statutory) external standard?	If no continue; of	therwise skip to 1
0. Is an internal standard required to attain a level of	risk consistent with	YES INO
nanagement performance goals?		[] 1E9 [] NO
1. Describe nature and status of internal sufficient st	andard.	
	· · · · · · · · · · · · · · · · · · ·	
		i.
		•
2. Describe how the levels of risk and cost are consis	tent with management pe	rformance goals
Past adherance to the standard in #8 has resulted in levels of ES&H a		
nanagement goals inlouding the use of industrial standards for industr		
ases of cold injury at Fermilab, winter exposures to are fairly common erves as the generally-recognized consensus standard for industrial		
equirement.		
•		
3. Pick the basic implementing assumption from the lis	t. Major positive impact	Minor negative impac
	☐ Minor positive impact ☐ ☑ No net impact	Major negative impac
4. Describe the nature and status of implementation	including cost-effectivene	ss.
ast application of the ACGIH TLV for cold stress has proven to be be		
	,	

1.	Issue(s)		Issue	origin	Hazard analysis □	dentification Team
	. Thermal - cryog	iens				
'~~	. Monna oryog	55				
	r					
	Focus group	☐ Emergency Management	☐ Fire Protection			
	locae group	☐ Environmental Protection		Oversigh		
2.	Is there a ne	cessary standard which a	applies to this is	sue?		YES NO
				If	yes, continue; other	·
3.	Necessary s	tandard(s)				
l						
}						
ŀ						
<u> </u>		·				
4.	Are there any	aspects of these neces	sary standard(s)	which	do not add value?	☐ YES ☐ NO
			•	H	f yes, continue; othe	rwise skip to 6.
5.	Description of	f non-value added aspec	cts of necessary	stand	ard(s).	
					· · · · · · · · · · · · · · · · · · ·	
			,			
1						
6.	is the level of	f risk associated with th	e issue(s) consi	stent w	vith management	
		s assuming compliance				YES NO
					If no continue; other	wise skip to 12.
7.	Is there a no	n-required external standa	ard which applie	s to th	is issue?	YES NO
		•	• •		yes, continue; other	

8. External sufficient standard citation	
9. Is the level of risk associated with the issue(s) consistent with	ES NO
management performance goals assuming compliance with the above	
(non-statutory) external standard? If no continue; otherwise	skip to 12
	•
10. Is an internal standard required to attain a level of risk consistent with	ES NO
management performance goals?	
11. Describe nature and status of internal sufficient standard.	
	-41
Fermilab ES&H Manual chapters 5032 and 5032.1, Cryogenic System Review and Liquid Nitrogen Dewar Install respectively, are written and have been in force for several years. It was developed to specifically address the	
respectively , are written and have been in force for several years. It was developed to specifically address the hazards at Fermilab and to minimize the potential risks.	cryogenic
nazarus at Fermilab and to minimize the potential risks.	
	1
12. Describe how the levels of risk and cost are consistent with management performanc	e goals.
Past adherance to the internal standard in #11 has resulted in levels of ES&H and cost performance that are co	
management goals. There have been very few, if any, injuries or illnesses stemming from activities falling under	
of Fermilab's cryogenic system review program since its initiation.	
13. Pick the basic implementing assumption from the list. Major positive impact Minor neg	gative impact
☐ Minor positive impact ☐ Major neg	gative impact
No net impact	
14. Describe the nature and status of implementation including cost-effectiveness.	
The internal standards identified in #11 have proven to be both successful and cost-effective.	
·	

1.	issue(s)	Issue origin ☐ Hazard analysis ☐ Identification Team
		emperature equipment
'44	r. Hiermai - nigri k	superature equipment
1		
	Focus group	☐ Emergency Management ☐ Fire Protection ☑ Occupational Safety
		☐ Environmental Protection ☐ Management & Oversight ☐ Radiation Protection
2.	Is there a ne	cessary standard which applies to this issue? ☑ YES ☐ NO
		If yes, continue; otherwise skip to 6.
		ii yes, somme, emerwise skip to s.
3.	Necessary s	andard(e)
	CFR 1910.107(c)(
	CFR 1910.303(b)(
29	CFR 1910.305(j)(4 CFR 1910.307	·)(III)
	CFR 1910.335(a)(21/ii)
29	CFR 1910.333(a)(2)(II)
А	Are there any	aspects of these necessary standard(s) which do not add value?
4.	Are there any	
		If yes, continue; otherwise skip to 6.
5.	Description of	f non-value added aspects of necessary standard(s).
ł		
İ		
6.		of risk associated with the issue(s) consistent with management
pe	rformance goal	s assuming compliance with applicable necessary standards?
		If no continue; otherwise skip to 12
7.	is there a no	n-required external standard which applies to this issue?
		If yes, continue; otherwise skip to 10

8. External sufficient standard citation		
		
9. Is the level of risk associated with the issue(s) consistent	t with	YES NO
management performance goals assuming compliance with the		<u> </u>
(non-statutory) external standard?	If no continue;	otherwise skip to 12
		•
10. Is an internal standard required to attain a level of risk	consistent with	
management performance goals?	consistent with	☐ YES ☐ NO
•		
11. Describe nature and status of internal sufficient standar	<u>d.</u>	
•		
i		
40 Describe how the levels of white and seek one consistent		
12. Describe how the levels of risk and cost are consistent Past adherance to the statutory requirements in #3 has resulted in levels of		
with management goals inlouding the use of industrial standards for industria		
proper covering, clearences, and training.		
		•
*		
		·
40 Blat the heads touchers with a second of the second	Major positivo impost	Minor possible imposi
13. Pick the basic implementing assumption from the list.	Minor positive impact	☐ Major negative impact
	No net impact	- major negative impact
		· · · · · · · · · · · · · · · · · · ·
14. Describe the nature and status of implementation inclu	ding cost-effective	ness.
High temperature equipment exists periodically and well address through se		
pesonnel with the proper person protective equipment and training. Experien		
successful and cost-effective.		-

				Issue	origin	Hazard analysis	☐ Identification Team
1.	Issue(s)	 					
148	. Thermal - hot w	vork environi	nents				
•							
	•					•	}
		· · · · · · · · · · · · · · · · · · ·					
ı	Focus group	☐ Emerge	ncy Management	☐ Fire Protection		☑ Occupational Sa	afety
						ht 🔲 Radiation Protec	
							
2.	Is there a ne	ecessarv s	tandard which	applies to this	issue?		X YES NO
		,				yes, continue; ot	
					13	yes, continue; on	nerwise skip to 6.
3.	Necessary s	tandard(s)					
-	- Treocooding o				· · · · · · · · · · · · · · · · · · ·		
4.	Are there any	y aspects	of these nece	ssary standard(s	•	do not add value?	
					I	f yes, continue; of	therwise skip to 6.
5.	Description of	of non-val	ue added asp	ects of necessa	ry stand	lard(s).	
			•				
				-			
							
6.	is the level of	of risk ass	ociated with t	he issue(s) con:	sistent v	with management	
						sary standards?	X YES NO
-	-		-			-	herwise skip to 12.
_		<u>.</u> -					
7.	is there a no	n-required	external stan	dard which appl			☐ YES ☐ NO
					If	yes, continue; oth	nerwise skip to 10.

8. External sufficient standard citation		
ACGIH TLV for heat stress		
9. Is the level of risk associated with the issue(s) consistent		☐ YES ☐ NO
management performance goals assuming compliance with the		-
(non-statutory) external standard?	If no continue;	otherwise skip to 12
10. Is an internal standard required to attain a level of risk c	onsistent with	☐ YES ☐ NO
management performance goals?		
11. Describe nature and status of internal sufficient standard	d.	
12. Describe how the levels of risk and cost are consistent v		
Past adherance to the standard in #8 has resulted in levels of ES&H and cos	•	e consistent with
management goals inlouding the use of industrial standards for industrial issu	Jes.	
13. Pick the basic implementing assumption from the list. \square	fajor positive impact	☐ Minor negative impact
	ninor positive impact	☐ Major negative impact
Name of the state	lo net impact	
14. Describe the nature and status of implementation includ	<u>-</u>	
Past application of the ACGIH TLV for heat stress has proven to be both suc	ccessiul and cost-effe	ecuve.

1.	Issue(s)	Issue	origin	Hazard analysis	Identification Team
	Emergency preparedness - severe weather Construction - high winds				
					·
	Focus group Emergency Management Fire Pr	otection		☐ Occupational	Safety
	☐ Environmental Protection ☐ Manag		Oversigh		
2.	Is there a necessary standard which applies to	this is	ssue?		YES X NO
			lf	yes, continue; d	otherwise skip to 6.
					-
3.	Necessary standard(s)				
					Į.
4.	Are there any aspects of these necessary stan	dard(s)	which	do not add valu	e? YES NO
			ł	f yes, continue;	otherwise skip to 6.
5.	Description of non-value added aspects of no	ecessary	y stand	lard(s).	·
	,				
	••				
		-		<u>-</u>	
6.	Is the level of risk associated with the issue(s) consi	istent v	vith management	
	formance goals assuming compliance with app				YES NO
			•		otherwise skip to 12.
7.	Is there a non-required external standard which	h applie	es to th	nis issue?	YES NO
		4-1			otherwise skip to 10.

8. External sufficient standard citation		
9. Is the level of risk associated with the issue(s) consistent		YES NO
management performance goals assuming compliance with the (non-statutory) external standard?	above If no continue; othe	rwise skip to 12
(ii iio continue, otne	iwise skip to 12
10. Is an internal standard required to attain a level of risk c	onsistent with	RIVES FINO
management performance goals?		YES NO
11. Describe nature and status of internal sufficient standard	i.	
Fermilab Emergency Plan Sections 35A, 35B, and 41.	Parties 25A	
 Personnel Warning - Severe weather Fermilab Emergency Plan, 9/92, 3 Shelters - Severe weather Fermilab Emergency Plan, 9/92, Section 35 	3	
3.) Warning Signals - Severe weather Fermilab Emergency Plan, 9/92, Se	ection 41	
	•	
12. Describe how the levels of risk and cost are consistent v		
Fermilab's policy to ensure a safe environment for workers includes risk redu weather. For Fermilab's geographic location the primary severe weather haza		
and winter storms. Although the chances for tornado - the most severe hazar	d - occuring on site are rea	d, the actual
pobability is low; there has never been a tornado on site, though there were 10 lllinois in the 10 year period 1976 and 1985.) tornados reported in the F	ermilab area of
,		
		,
<u> </u>		
13. Pick the basic implementing assumption from the list.	lajor positive impact	inor negative impact
ju v	ilinor positive impact 🔲 ivi	ajor negative impact
	lo net impact	
14. Describe the nature and status of implementation include	ing cost-effectiveness	•
It is a common best business practice fo prepare for weather related emerger	cies that may affect peronr	nel. Fermilab has
provided outside tornado warning devices (sirens) which are being enhanced (SEWS) which functions inside facilities throughout the site where personnel		
The present program will continue to be implemented, upon approval of the pr		
documented in the Fermilab Emergency Plan.		

1.	Issue(s)		Issue	origin	☐ Hazard analysis	Identification Team
	3. Emergency preparedness	- safeguards and secu	ritv			
	- Lines gone , proposition	g			v	
						
			ire Protection		☐ Occupational	
	☐ Environr	mental Protection 🔲 N	Management &	Oversigi	nt LI Hadiation Pro	tection
2.	Is there a necessary st	andard which appl	ies to this i	ssue?		X YES NO
				lf	yes, continue;	otherwise skip to 6.
3.	Necessary standard(s)					
		owned & leased by the				
	U.S. Code Sections 841-848				civil disorders.)	4
	CFR 1046 Subpt. B, App A, Cl			е.		
Illin	iois Compiled Statutes (ICS) C	napter 625 (State veni	cie code)			
l	-					
İ						
	-					
	Ave there any concerts	of these recessors	otondoválo)	which	do not odd volu	IN VEC MINO
4.	Are there any aspects	or these necessary	standard(s)			
				'	ı yes, conunue;	otherwise skip to 6.
	·					
5.	Description of non-value	ue added aspects	of necessary	y stanc	lard(s). 	
						,
ĺ						
		ı				
6.	Is the level of risk ass					YES NO
pei	rformance goals assumir	ng compliance witl	n applicable	neces	-	
					If no continue;	otherwise skip to 12.
	•					
7	Is there a non-required	evternal standard	which annli-	se to t	nie ieeuo?	TVEC THAT
7.	is more a non-required	external stanuard	minute applie			YES NO NO NO NO NO NO NO NO NO NO NO NO NO
				11	yes, continue; (Princimise Svih in In.

8. External sufficient standard citation	
9. Is the level of risk associated with the issue(s) consistent with	☐ YES ☐ NO
management performance goals assuming compliance with the above (non-statutory) external standard?	e o continue; otherwise skip to 12
10. Is an internal standard required to attain a level of risk consiste	ent with
management performance goals?	□ 120 □ 140
11. Describe nature and status of internal sufficient standard.	
	*
12. Describe how the levels of risk and cost are consistent with many adherence to the cited legal requirements is sufficient in achieving a low level of risk	
performance goals. The level of risk is consistent with management performance goals	als because management expects to
use industrial solutions for industrial issues. This is an industrial issue and the solution	on chosen is an industrial solution.
13. Pick the basic implementing assumption from the list. Major pos	sitive impact Minor negative impac
☐ Minor pos ☑ No net im	sitive impact Major negative impac npact
· · · · · · · · · · · · · · · · · · ·	
14. Describe the nature and status of implementation including co	
No changes are anticipated in the emergency preparedness/response aspects of the presently implemented at Fermilab; this includes the following elements: the Site Se	
Assessments; the Fermilab Security Procedures; and employee identification badging	g. When the above standard is
approved in the N&S process, internal implementation programs may be modified to b	e compatible with this standard.

YES NO

If yes, continue; otherwise skip to 10.

FERMILAB IDENTIFICATION TEAM DOCUMENTATION

1. J:	ssue(s)					Issue	origin	☐ Ha	zard analys	sis 🔀 I	dentification	Team
154.	Emergency pre	paredne	ss - generi	С								
												l
												1
_		_										
Fo	cus group		gency Mar						Occupation			
		☐ Envir	onmental F	rotection	☐ Mana	agement &	Oversig	ht 🗆 F	Radiation P	rotectio	<u> </u>	
2. is	there a nec	cessary	standard	l which	applies	to this i	ssue?				X YES	□ NO
							lf	yes,	continue;	other	wise skip	to 6.
		المستحدث	/~\									
	Necessary st			lone and	five presser	ation plans						
	R 1910.38 Emp R 300.150 (EPA		nergency p	nans and	iire prever	ntion plans						
	R 311.1 Worke		on									1
	2356 of Aug. 1											
	U.S.Code 4103 R 36 Sections 4		and 302(b)	(2)								
20 01		(0) (a 002(b)	 /-								1
												- 1
												j
4. A	re there any	aspect	s of the	se nece	ssary sta	andard(s)	which	do no	ot add va	lue?	YES	NO X
		•			•	, ,					rwise skip	
5. D	Description o	f non-v	alue ado	led asp	ects of	necessar	y stanc	dard(s)).			
												1
L		_					···· ··					
6. Is	s the level o	f risk a	associate	d with 1	the issue	e(s) cons	istent v	with m	anageme	nt	☐ YES	
perfo	rmance goal	s assu	ming cor	npliance	with a	pplicable	neces	sary s	standards	?		
								if no	continue	; othe	rwise skip	to 12.

7. Is there a non-required external standard which applies to this issue?

8. External sufficient standard citation	
NFPA 1561, Standard of Fire Dept. Incident Management System	
	,
9. Is the level of risk associated with the issue(s) consistent with	¥ YES □ NO
management performance goals assuming compliance with the above	
(non-statutory) external standard?	otherwise skip to 12
10. Is an internal standard required to attain a level of risk consistent with	☐ YES ☐ NO
management performance goals?	<u> </u>
11. Describe nature and status of internal sufficient standard.	
	<u> </u>
	,
·	
	· · · · · · · · · · · · · · · · · · ·
12. Describe how the levels of risk and cost are consistent with management p	
Adherence to the cited legal requirements and external standards is sufficient in achieving a low lev	
consistent with management performance goals. Adoption of NFPA 1561 is triggered by the Fermila to utilize an in-house Fire Dept. The level of risk is consistent with management performance goals	
expects to use industrial solutions for industrial issues. This is an industrial issue and the solution	
solution.	
<u> </u>	·
13. Pick the basic implementing assumption from the list. Major positive impact	☐ Minor negative impact
☐ Minor positive impact	☐ Major negative impact
No net impact ■	
14. Describe the nature and status of implementation including cost-effectiver	
Fermilab's present extensive emergency management system includes hazard assessment, planni response; an Incident Command System. It is documented in the Fermilab Emergency Plan. When	ng, preparedness, and
response; an incident Command System. It is documented in the Fermilab Emergency Plan. When approved in the N&S process, internal implementation programs may be modified to be compatible to	

	Issue orig	in Hazard analysis	Identification Team
1. Issue(s)			
155. Env - underground storage tanks			
· .			
Focus group	rotection	☐ Occupational	Safety
☑ Environmental Protection ☐ Manag			
2. Is there a necessary standard which applies t	to this issue:		X YES NO
z. 10 more z mecessary camana miner approxi			otherwise skip to 6.
		n yes, continue;	otherwise skip to 6.
3. Necessary standard(s)			•
RCRA, 42 USC 6901 et seq.			
40 CFR 280			
35 IAC 731 - 732			
35 IAC 170			
35 IAC 170 Subpart A			
		•	
4. Are there any aspects of these necessary star	ndard(s) which	ch do not add valu	e? YES NO
	. ,		otherwise skip to 6.
		• •	•
5. Description of non-value added aspects of n	ecessarv sta	ndard(s).	
	····		
	4		
6. Is the level of risk associated with the issue	(s) consisten	t with management	WYC THAT
performance goals assuming compliance with ap	plicable nec	essary standards?	YES NO
•		If no continue;	otherwise skip to 12.
7. Is there a non-required external standard which	ch applies to	this issue?	YES NO
			otherwise skip to 10.

9. Is the level of risk associated with the issue(s) consistent with
management performance goals assuming compliance with the above
(non-statutory) external standard? If no continue; otherwise skip to
10. Is an internal standard required to attain a level of risk consistent with ☐ YES ☐ №
management performance goals?
11. Describe nature and status of internal sufficient standard.
40. Describe how the levels of viels and cost are consistent with management newformance weeks
12. Describe how the levels of risk and cost are consistent with management performance goals. Continuation of the current program will provide an appropriate level of protection at an acceptable cost. The level of risk
consistent with management performance goals because management expects to use industrial solutions for industrial
issues. This is an industrial issue and the solution chosen is an industrial solution.
The second secon
13. Pick the basic implementing assumption from the list. ☐ Major positive impact ☐ Minor negative impact ☐ Major negative impact ☐ Major negative impact ☐ Major negative impact
13. Pick the basic implementing assumption from the list. ☐ Major positive impact ☐ Minor negative impact ☐ Major negative impact ☐ Major negative impact ☐ Monor negative impact
☐ Minor positive impact ☐ Major negative impact ☑ Mo net impact
☐ Minor positive impact ☐ Major negative impact ☑ Major negative impact ☑ No net impact 14. Describe the nature and status of implementation including cost-effectiveness.
☐ Minor positive impact ☐ Major negative impact ☑ Major negative impact ☑ No net impact 14. Describe the nature and status of implementation including cost-effectiveness.
☐ Minor positive impact ☐ Major negative impact ☑ No net impact
☐ Minor positive impact ☐ Major negative impact ☑ Major negative impact ☑ No net impact 14. Describe the nature and status of implementation including cost-effectiveness.

1.	Issue(s)	ls	ssue	origin	☐ Hazard analysis ☐ Identification	Team
		ical hazards - aviation	-			
1.50.	Onto Moonan	odi Nazarao aviaton				
1		•				
İ						
	44.4					
1						
<u> </u>						
F	ocus group	☐ Emergency Management ☐ Fire Prote ☐ Environmental Protection ☐ Management		Overeigh	☑ Occupational Safety ☐ Radiation Protection	
		☐ Environmental Protection ☐ Managern	ent or	Oversigi	It I hadiation Frotection	
_	la Abaua a ma		bia ia	0		
2.	is there a ne	ecessary standard which applies to the	กเร เร] NO
				lf	yes, continue; otherwise skip	to 6.
	Nassassus a	tondoud(a)				
3.	Necessary s					
		operating and flight rules) on of certain aircraft operations from the trans	enond	lor)		1
		ation and reportingaccidents and incidents.		,		
		operators and commercial operators)				ĺ
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	Ave there on	y aspects of these necessary standa	rd/o\	which	do not odd volus?	
4.	Are there an	y aspects of these necessary standar	iu(s)		do not add value? □ YES □ f yes, continue; otherwise skip	X NO
				•	yes, continue, otherwise skip	10 0.
_	Description	of non-value added aspects of nece	ecari	, stand	ard(e)	
5. —	Description	of non-value added aspects of nece	ssai y	Stantu		1
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6.	is the level	of risk associated with the issue(s)	consi	stent v	vith management	
		Is assuming compliance with applic				NO
		, , , , , , , , , , , , , , , , , , , ,			If no continue; otherwise skip	to 12.
						·
_	la Maner				is issue	 -
7.	is there a no	on-required external standard which a	applie			NO
				If	yes, continue; otherwise skip	to 10.

9. Is the level of risk associated with the issue(s) consistent with management performance goals assuming compliance with the above
(non-statutory) external standard? If no continue; otherwise skip to 12
10. Is an internal standard required to attain a level of risk consistent with
management performance goals?
11. Describe nature and status of internal sufficient standard.
11. Describe nature and status of internal sufficient standard.
40. Describe how the levels of risk and seek are consistent with more constitutions and
12. Describe how the levels of risk and cost are consistent with management performance goals. Past adherance to the statutory requirements in #3 has resulted in levels of ES&H and cost performance that are consistent.
with management goals inlouding the use of industrial standards for industrial issues. Given the low frequency of rental
aircraft service usage (~few days per year) and small number of employees involved (~one per flight), it is reasonable for
Fermilab to accept the cumulative level of risk associated with "industrial standards" (i.e., FAA compliance).
(SFAR = Special Federal Aviation Regulations)
13. Pick the basic implementing assumption from the list. Major positive impact Minor negative impact
Minor positive impact ☐ Major negative impact
13. Pick the basic implementing assumption from the list. ☐ Major positive impact ☐ Minor negative impact ☐ Major negative impact ☐ No net impact
Minor positive impact ☐ Major negative impact ☐ No net impact
Minor positive impact ☐ Major negative impact ☐ No net impact 14. Describe the nature and status of implementation including cost-effectiveness.
Minor positive impact No net impact No net impact
Minor positive impact Major negative impact No net impact 14. Describe the nature and status of implementation including cost-effectiveness. Reliance on FAA requirements would greatly simplify the process for securing aircraft services. This would result in a
Minor positive impact No net impact No net impact

1.	Issue(s)		Issue	origin	☐ Hazard analysis	Identification Team
		dness - hazardous materials		•		
פון.	Emergency prepare	uriess - Hazardous materiais				
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<u> </u>						
	ocus group 🔀 E	mergency Management	re Protection		☐ Occupational Sa	fety
•		Environmental Protection		Oversial		
	<u> </u>					
_	1. 41	delder beekle		0		
2.	is there a necess	eary standard which applie	es to this is			YES NO
				If	yes, continue; oth	erwise skip to 6.
3.	Necessary stand	ard(s)				
		lements of an Emergency Resp				
Illino	ois Chemical Safety A	ct (as ammended by P.A. 85-13	325, effective A	August 3	11, 1988)	
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i						
						}
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4.	Are there any as	pects of these necessary	standard(s)			
				Į.	f yes, continue; ot	herwise skip to 6.
5.	Description of no	on-value added aspects o	of necessary	/ stand	lard(s).	
l						
			•			
						1
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						•
6.	le the level of ric	sk associated with the is:	sue(s) consi	stent u	vith management	
		ssuming compliance with				XYES NO
F					If no continue; oth	erwise skin to 12
					no commue, ou	skip to 12.
7.	Is there a non-re-	quired external standard v	vhich applie	s to th	nis issue?	YES NO
				lf	yes, continue; oth	erwise skip to 10.

8. External sufficient standard citation	
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	····
9. Is the level of risk associated with the issue(s) consistent with	YES NO
management performance goals assuming compliance with the above (non-statutory) external standard?	athamula aldu tu 40
in no continue;	otherwise skip to 12
10. Is an internal standard required to attain a level of risk consistent with	
management performance goals?	☐ YES ☐ NO
11. Describe nature and status of internal sufficient standard.	
12. Describe how the levels of risk and cost are consistent with management	performance goals.
Adherence to the cited legal requirements is sufficient in achieving a low level of risk that is consist	
performance goals. The level of risk is consistent with management performance goals because muse industrial solutions for industrial issues. This is an industrial issue and the solution chosen is a	
	·
13. Pick the basic implementing assumption from the list. ☐ Major positive impact ☐ Minor positive impact	 ☐ Minor negative impact ☐ Major negative impact
☑ No net impact	
14. Describe the nature and status of implementation including cost-effectives. Fermilab's present extensive emergency management system includes hazard assessment, plann	
response; an Incident Command System. It is documented in the Fermilab Emergency Plan. Whe	n the above standard is
approved in the N&S process, internal implementation programs may be modified to be compatible	with this standard.

1.	Issue(s)		Issue	origin	☐ Hazard analysis	Identification Team
160	. Emergency preparedness -	toxicity in smoke or fu	ımes			
	5 7	•				
1						
		ncy Management		Or complete	Occupational Sa	
	LI Environr	mental Protection	vianagement &	Oversigi	nt Radiation Protec	ction
2.	is there a necessary st	tandard which appl	ies to this is	ssue?		YES NO
				If	yes, continue; oth	nerwise skip to 6.
3.	Necessary standard(s)					
	CFR 1910.38 (evacuation, acc		ergency)			
	CFR 1910.120 (emergency res	sponse)				
	CFR 1910.134 (respirators)	rotootiva Evaceura I i	ite)			.]
29 (41 l	CFR 1910.1000 Subpart Z (Pr	otective Exposure LIM	10)			
· ·	A0		•			1
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						Ì
						İ
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4.	Are there any aspects	of these necessary	standard(s)	which	do not add value?	YES NO
	•	•	()			herwise skip to 6.
					•	
5.	Description of non-value	ue added aspects	of necessary	v stand	lard(s)	
.	Description of non-van	ac daded dapedta		, cand		
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<u> </u>		· · · · · · · · · · · · · · · · · · ·				
6	is the level of risk ass	enciated with the i	seuele) consi	ietant "	with management	
6. ner	is the level of risk ass formance goals assumil					XYES NO
hai	Tormanos godio documin	MIC				herwise skip to 12.
					ii iio continue, oti	ici wise skip to 12.
	•					
7.	Is there a non-required	external standard	which applie			☐ YES ☐ NO
				lf	yes, continue; oth	erwise skip to 10.

8. External sufficient standard citation	
9. Is the level of risk associated with the issue(s) consistent with	YES NO
management performance goals assuming compliance with the above (non-statutory) external standard?	
(non-statutory) external standard?	ise skip to 12
10. Is an internal standard required to attain a level of risk consistent with	
management performance goals?	YES NO
11. Describe nature and status of internal sufficient standard.	
12. Describe how the levels of risk and cost are consistent with management perforn Adherence to the cited legal requirements is sufficient in achieving a low level of risk that is consistent with	
performance goals. The level of risk is consistent with management performance goals because management	nent expects to
use industrial solutions for industrial issues. This is an industrial issue and the solution chosen is an indus	trial solution.
· ·	
13. Pick the basic implementing assumption from the list. Major positive impact Mino	r negative impact
☐ Minor positive impact ☐ Majo ☑ No net impact	or negative impact
14. Describe the nature and status of implementation including cost-effectiveness.	
Fermilab's present extensive emergency management system includes hazard assessment, planning, pre- response; an Incident Command System. It is documented in the Fermilab Emergency Plan. When the at- approved in the N&S process, internal implementation programs may be modified to be compatible with this	ove standard is
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_	1(-)		Issue	origin	☐ Hazard analysis 🛛 I	dentification Team
<u>1.</u>	Issue(s)					
161	l. Env - general enviro	nmental protection planning				
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	· ·					1
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	Focus group E	mergency Management	otection		☐ Occupational Safet	у
		Environmental Protection 🔲 Manag	ement & (Oversigl	ht 🔲 Radiation Protection	n
	·					
2.	le there a naces	sary standard which applies to	a thie ie	euo?		X YES NO
۷.	is tilele a lievess	sary standard which applies to) till9 19			
				lf	yes, continue; other	wise skip to 6.
3.	Necessary stand	ard(s)				
NE	PA 42 USC 4321 et sec					
40 (CFR 1500 - 1508					ļ
10 (CFR 1021		*			
Ì	·					
						•
1						
_					· · · · · · · · · · · · · · · · · · ·	
4.	Are there any as	pects of these necessary stan	ıdard(s)	which	do not add value?	YES 🛛 NO
				l	f yes, continue; othe	rwise skip to 6.
5.	Description of no	on-value added aspects of ne	ecessarv	stanc	lard(s)	
"	Description of hi	on raide added deposits or in		- Otaric		
L					· · · · · · · · · · · · · · · · · · ·	
_	المائم امتما مؤالا	ak appainted with the issue's	n\		with management	
6.		sk associated with the issue(s				YES NO
pei	normance goals a	ssuming compliance with app	hiicable	neces:	•	
					If no continue; other	wise skip to 12.
7.	le there a non-re-	quired external standard whicl	h annlie	s to H	his issue?	YES NO
٠.	is there a non-le	ganca external standard willer	appiic			
				IŤ	yes, continue; other	wise skip to 10.

8. External sufficient standard citation	
	-
. Is the level of risk associated with the issue(s) consistent with	YES NO
anagement performance goals assuming compliance with the above	<u> </u>
non-statutory) external standard? If no continue; oth	nerwise skip to 12
0. Is an internal standard required to attain a level of risk consistent with	
nanagement performance goals?	YES NO
1. Describe nature and status of internal sufficient standard.	
Dood not include and ordinary of months of	
	· · · · · · · · · · · · · · · · · · ·
2. Describe how the levels of risk and cost are consistent with management per	formance goals.
ontinuation of the current program will provide an appropriate level of protection at an acceptable cos	t. The indicated
atute and regulations are adequate to provide a planning program that assures the appropriate level nvironmental impacts early in the project planning cycle.	of consideration for
ivilonmental impacts early in the project planning cycle.	
3. Pick the basic implementing assumption from the list. Major positive impact	Minor negative impac
☐ Minor positive impact ☐ I	Major negative impac
☑ No net impact	
A Describe the nature and status of implementation including and effectiveness	•
<u> </u>	
hen the above standard is approved in the N&S process, internal implementation programs will be mo	
hen the above standard is approved in the N&S process, internal implementation programs will be mo	
4. Describe the nature and status of implementation including cost-effectivenes. When the above standard is approved in the N&S process, internal implementation programs will be moonsistent with the standard.	

1. Is	ssue(s)				Issue	origin	☐ Hazard analys	sis 🔀 lo	lentification Team
		safety admi	nistrative requi	rements					
100.	occupational C	sarcty admi	inotrativo rogali						
Foo	cus group			ent ☐ Fire Pro		Oversigi	☐ Occupation	•	
0 lo	there e ne	20000274	tandard whi	ch applies to	thic i	seuo?			E VEO E NO
2. IS	tileie a ne	ecessary :	standard will	cii applies to	, till 3 (yes, continue;	; otherv	vise skip to 6.
3. N	ecessary s	standard(s)						
29 CFF 29 CFF 29 CFF 29 CFF 29 CFF	R 1910.20 (Ac R 1977.4 (Pen R 1977.12 (Ex	sting of notion of minent dang rices to em sons prohib cercise of an an an an an an an an an an an an an	ce) ger) nd reporting oc ployee exposur ited from discri ny right afforder	by the Act)	ecords)	which	do not add va		▼ YES □ NO wise skip to 6.
				spects of ne				11	
Therefo	ore, they are	not directly	useful to Fermi	lab managemer	nt in limi	ting risks	ht of Fermilab ES& to employees. He management of E	owever, t	
							vith manageme sary standards If no continue	?	☑YES ☐ NO wise skip to 12.
7. Is	there a no	on-require	d external st	andard which	n applie			otherw	YES NO xternal sufficient standard citation
--									
9. Is the level of risk associated with the issue(s) consistent with									
management performance goals assuming compliance with the above									
(non-statutory) external standard? If no continue; otherwise skip to 1									
10. Is an internal standard required to attain a level of risk consistent with									
management performance goals?									
11. Describe nature and status of internal sufficient standard.									
12. Describe how the levels of risk and cost are consistent with management performance goals. The level of risk is consistent with management performance goals because management expects to use industrial									
solutions for industrial issues. These are industrial issues and the solutions chosen are industrial solutions.									
5(a)(1) of the OSH Act (General duty clause) permits enforcement against "otherwise unregulated" hazards.									
29CFR1903.2 (Posting of notice) provides employees with info regarding their OSH rights and responsibilities. 29CFR1903.13 (Imminent danger) permits enforcement against imminent hazards.									
29CFR1904 (Recordkeeping and reporting occupational injuries and illnesses) defines occupational injury/illness recording									
and reporting requirements. 29CFR1910.20 (Access to employee exposure and medical records) defines employee access and retention requirements									
for exposure and medical records. 29CFR1977.4 (Persons prohibited from discriminating) prohibits discrimination against employees presenting safety									
concerns.									
29CFR1977.12 (Exercise of any right afforded by the Act) allows employees to refuse truly dangerous work assignments.									
13. Pick the basic implementing assumption from the list. Major positive impact Minor negative impact									
☐ Minor positive impact ☐ Major negative impact ☐ Major negative impact									
No net impact									
14. Describe the nature and status of implementation including cost-effectiveness.									
Fermilab has been subject to the requirements in #3 since DOE's adoption of OSHA standards and has implemented									
successful and cost-effective programs to assure acceptable performance.									

1.	Issue(s)	Issue	origin	☐ Hazard analysis ☐ Identification Team
	Occurrence Investigation and Reporting			
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<u> </u>				
	Focus group	otection		☐ Occupational Safety
	☐ Environmental Protection 🔀 Manage		Oversigh	
2.	Is there a necessary standard which applies to	this is	ssue?	TYES X NO
			lf	yes, continue; otherwise skip to 6.
3.	Necessary standard(s)			
4.	Are there any aspects of these necessary stan	dard(s)	which	do not add value?
	• •			f yes, continue; otherwise skip to 6.
5.	Description of non-value added aspects of ne	ecessary	y stand	lard(s).
_				
6.	Is the level of risk associated with the issue(s			
per	formance goals assuming compliance with app	licable	necess	sary standards:
				If no continue; otherwise skip to 12.
7.	Is there a non-required external standard which	n applie		<u> </u>
			If	yes, continue; otherwise skip to 10.

8. External sufficient standard citation	
9. Is the level of risk associated with the issue(s) consistent with	
management performance goals assuming compliance with the above	☐ YES ☐ NO
(non-statutory) external standard? If no continue; otherw	iee ekin to 12
ii iio oonanae, omerw	130 3KIP 10 12.
10. Is an internal standard required to attain a level of risk consistent with	XYES NO
management performance goals?	
11. Describe nature and status of internal sufficient standard.	
Fermilab ES&H Manual Chapter 3050 constitutes an internal standard on occurrence investigation and repo	rting based
lupon DOE 5000.3B. This standard defines the areas for which occurrence reporting is done including: 1) which occurrence reporting is done including including its done inclu	
regulations require reporting of incidents and occurrences outside the scope of normal operations, 2) when	
public interest in an occurrence, 3) when a serious degradation in facility condition or personnel safety occu	
the information is deemed to be, in the judgement of the Laboratory or the Contracting Officer, of significant	
facilities in the DOE complex. Of necessity, occurrence reporting involves investigation of significant acci	dents,
development, and tracking of related corrective actions.	
12. Describe how the levels of risk and cost are consistent with management perform	ance goals.
It is recognized that certain occurrences, as a management practice, should be reported to URA corporate	
and to DOE and that in some cases this information is potentially useful to similar facilities. The level of ris	
with management performance goals because management expects to use industrial solutions for industria	l issues. This is
an industrial issue and the solution chosen is an industrial solution.	
	÷
13. Pick the basic implementing assumption from the list. ☐ Major positive impact ☐ Minor	r negative impact
☐ Minor positive impact ☐ Majo	r negative impact
No net impact	
14. Describe the nature and status of implementation including cost-effectiveness.	
Fermilab has implemented successful and cost-effective programs to assure acceptable performance in the	e area of
occurrence reporting.	1
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	Issue origin Hazard analysis Identification Team
1.	Issue(s)
165.	Radiation - radiological emergency response (see 154.)
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F	ocus group
	☐ Environmental Protection ☐ Management & Oversight ☑ Radiation Protection
_	I there are a standard which could be the increase.
2.	Is there a necessary standard which applies to this issue? ☑ YES ☐ NO
	If yes, continue; otherwise skip to 6.
2	Necessary standard(s)
3.	
	FR 835.1301 FR 835.1302 (covers records and dose limits for), for more see Emerg. Prep. 154
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4.	Are there any aspects of these necessary standard(s) which do not add value? ☐ YES ☒ NO
	If yes, continue; otherwise skip to 6
5.	Description of non-value added aspects of necessary standard(s).
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6.	Is the level of risk associated with the issue(s) consistent with management
	ormance goals assuming compliance with applicable necessary standards?
	If no continue; otherwise skip to 12
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7.	Is there a non-required external standard which applies to this issue?
	If yes, continue; otherwise skip to 10

8. External sufficient standard citation
9. Is the level of risk associated with the issue(s) consistent with management performance goals assuming compliance with the above
(non-statutory) external standard? If no continue; otherwise skip to 12
10. Is an internal standard required to attain a level of risk consistent with management performance goals? ☐ YES ☐ NO
11. Describe nature and status of internal sufficient standard.
12. Describe how the levels of risk and cost are consistent with management performance goals.
10 CFR 835.1301 and .1302 directly address radiation emergencies. These requirements along with those for general emergency response standards (see emergency preparedness recommended standards) and general exposure control techniques covered elsewhere in 10 CFR 835 adequately address radiation emergencies. The level of risk is consistent with management performance goals because management expects to use industrial solutions for industrial issues. This is
an industrial issue and the solution chosen is an industrial solution.
13. Pick the basic implementing assumption from the list. ☐ Major positive impact ☐ Minor negative impact
☐ Minor positive impact ☐ Major negative impac
No net impact
14. Describe the nature and status of implementation including cost-effectiveness.
The program is implemented in the Fermilab Radiological control Manual.

1.	issue(s)			ls	ssue	origin	☐ Hazard analysis	dentification	Team
	. Radiation - radi	iological training						· · · · · · · · · · · · · · · · · · ·	
100	. Naulation - laui	ological trailing	,						
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	Focus group	☐ Emergency				Oversial	☐ Occupationalht ☑ Radiation Pro	•	
		Livitonine	ital Protection	□ Wanagen	ient &	Oversigi	it A Radiation Pro	tection	
_			علمانين اديماد	ammilian da d				100 X 00 F	
2.	Is there a ne	cessary stan	aara wnich	applies to t	inis i				JNO
					*	If	yes, continue;	otherwise skip	to 6.
_	Nanaaaaaa a	de male val/e)							
3.	Necessary s					·		·	
10 (CFR 835.901-903								.]
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А	Are there any	v senecte of	these nece	searv etanda	ard/e\	which	do not add valu	ie? XYES	
4.	Are there any	y aspects of	these nece	saly stande	ii u(s)		f yes, continue;		
						•	i yes, continue,	otherwise skip	10 0.
_	Description of	of non-value	added acre	note of noor	2000r	v stanc	lord(s)		
5.							all radiological work	ar worker training	
							tion of radiological tr		tten
							he management pe		
	ld be met more e							•	
<u> </u>									
6.	is the level of	of risk seeor	iated with t	he jesuale)	COne	istent v	with management		<u> </u>
							sary standards?	X YES	NO
, , ,	·						If no continue;	otherwise skip	to 12
							••	MICO OKIP	12,
					•				
7.	is there a no	n-required e	xternal stan	dard which	applie				NO
						If	yes, continue;	otnerwise skip	to 10.

8. External sufficient standard citation	
•	
9. Is the level of risk associated with the issue(s) consistent with	YES NO
management performance goals assuming compliance with the above (non-statutory) external standard?	
(non-statutory) external standard? If no continue; oti	ilerwise skip to 12
10. Is an internal standard required to attain a level of risk consistent with management performance goals?	YES NO
11. Describe nature and status of internal sufficient standard.	
12. Describe how the levels of risk and cost are consistent with management per	formance goals.
With the exemption requested above, the training program in this area is sufficient to meet performance risk is consistent with management performance goals because management expects to use industrial industrial issues. This is an industrial issue and the solution chosen is an industrial solution. These to are largely consistent with those imposed on NRC licensees.	e goals. The level of all solutions for
13. Pick the basic implementing assumption from the list. ☐ Minor positive impact ☐ ☐ Minor positive impact ☐ ☐ No net impact	Minor negative impact Major negative impact
14. Describe the nature and status of implementation including cost-effectivenes	ss.
The program is implemented in the Fermilab Radiological Control Manual. A major positive impact in co	ost-effectiveness
would be achieved if the above proposed exemption request were approved. This major positive impact basing training on worker hazards at an accelerator rather than DOE training material. When the about approved in the N&S process, internal implementation programs may be modified to be compatible with	ve standard is
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1. is	ssue(s)	Issue	origin	☐ Hazard analysis 🛛 Id	entification Team
	Radiation - monitoring and measurement of radiation				
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1					·
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Fo	cus group		O	Occupational Safety	
	☐ Environmental Protection ☐ Manage	ement &	Oversigi	nt 🗷 Hadiation Protection	
				•	
2. Is	there a necessary standard which applies to	this is	ssue?		X YES NO
			lf	yes, continue; otherw	vise skip to 6.
3. N	lecessary standard(s)				
1	R 835.401-404				
10 CFF	R 835.1101				
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Щ					
4. A	re there any aspects of these necessary stan	dard(s)	which	do not add value?	X YES NO
				f yes, continue; other	wise skip to 6.
5. D	escription of non-value added aspects of ne	ecessar	y stanc	lard(s).	
	technical and administrative provisions of the requireme				atory
	litation Program [835.402(b)] do not add value. The mar				
	vely with an exemption to this provision of 10 CFR 835.				
	litation Program (NVLAP) would provide adequate dosin				
	cost by allowing the use of radiation dosimetry services	provide	d by con	nmercial vendors who meet	the NVLAP
Istanda	rds and encourage more competitive bidding.				
					•
6. Is	the level of risk associated with the issue(s	consi	istent v	vith management	
	rmance goals assuming compliance with app				X YES NO
	3		_ _	If no continue; otherv	vise skin to 12
					OKIP (U 12.
				_	
7. Is	there a non-required external standard which	n applie			☐ YES ☐ NO
			lf	yes, continue; otherw	ise skip to 10.

8. External sufficient standard citation
9. Is the level of risk associated with the issue(s) consistent with
management performance goals assuming compliance with the above (non-statutory) external standard? If no continue; otherwise skip to
in no continue, otherwise skip to
10. Is an internal standard required to attain a level of risk consistent with
management performance goals?
11. Describe nature and status of internal sufficient standard.
12. Describe how the levels of risk and cost are consistent with management performance goals.
The performance requirements are adequately covered by compliance with the cited regulation. ANSI N323, N42.17, N322
N13.5, N319, N543, and N13.15 are already presently used as guidance documents in Fermilab's implementation of the regulation. The level of risk is consistent with management performance goals because management expects to use
industrial solutions for industrial issues. This is an industrial issue and the solution chosen is an industrial solution.
13. Pick the basic implementing assumption from the list. Major positive impact Minor negative impact
☑ Minor positive impact ☐ Major negative impa
☐ No net impact
14. Describe the nature and status of implementation including cost-effectiveness.
Adopting the NVLAP standard on personnel dosimetry will result in minor cost savings. The present requirements are
implemented by Fermilab ES&H Section through Specific Quality Implementation Plan RPS.1. If the above exemption is approved, internal implementation programs may be modified to be compatible with revised requirements.
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	Issue origin ☐ Hazard analysis ☑ Identification Team
1. Issue(s)	
168. Radiation - rec	ord keeping in occupational radiation protection
	G Emergency Management G Eiro Protection G Cocupational Cofety
Focus group	☐ Emergency Management ☐ Fire Protection ☐ Occupational Safety ☐ Environmental Protection ☐ Management & Oversight ☒ Radiation Protection
	Environmental Freedom Environment & Overlaght
	and the standard subtable could be the form of
2. Is there a ne	cessary standard which applies to this issue?
	If yes, continue; otherwise skip to 6.
3. Necessary s	tandard(s)
10 CFR 835.4	, and the second
10 CFR 835.204	
10 CFR 835.701-704	
10 CFR 835.801 10 CFR 835.1101	
10 CFR 835.1301	
Privacy Act of 1974	
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4 Are there an	y aspects of these necessary standard(s) which do not add value? ☑ YES ☐ NO
	If yes, continue; otherwise skip to 6.
	,
5. Description	of non-value added aspects of necessary standard(s).
	n 10 CFR 835.702(c) to record cumulative dose equivalents since January 1989 adds no value but
	to the need to collect such data. General industry practice is to collect this data for the worker's
	t use the arbitrary date of January 1989 in this manner. An exemption request should be submitted to
	nulative lifetime dose equivalent.
	0 CFR 835.1101. To create detailed records of removal of items from Contamination Areas adds no
	records become irrelevant in a very short period of time but take extensive resources to collect. An
	hould be submitted and approved to allow for a more reasonable and cost-effective protocol (see issue
133).	
	, ————————————————————————————————————
	of the considered with the formatal to the
	of risk associated with the issue(s) consistent with management
periormance goa	Is assuming compliance with applicable necessary standards?
	If no continue; otherwise skip to 12.
7. Is there a no	on-required external standard which applies to this issue?
	If yes, continue; otherwise skip to 10.

8. External sufficient standard citation	
9. Is the level of risk associated with the issue(s) consistent with	
management performance goals assuming compliance with the about	ove <u> </u>
(non-statutory) external standard?	no continue; otherwise skip to 12.
10. Is an internal standard required to attain a level of risk consist	stent with
management performance goals?	☐ YES ☐ NO
11. Describe nature and status of internal sufficient standard.	
	,
	•
12. Describe how the levels of risk and cost are consistent with The recordkeeping requirements as specified above achieve management perform	
1324.1A, .2A, and .5A have been used as guidance to develop Fermilab's present i	records management programs. With the
exception of the particular requirements stated in box 5, these recordkeeping requiemployed by general industry in the recording of radiation protection information.	
management performance goals because management expects to use industrial s industrial issue and the solution chosen is an industrial solution.	olutions for industrial issues. This is an
13. Pick the basic implementing assumption from the list. Major	positive impact Minor negative impact positive impact Major negative impact
	impact
14. Describe the nature and status of implementation including	cost-effectiveness
This program is presently implemented by the Fermilab Radiological Control Manua	I. The present program would be more
cost effective if the proposed exemptions to requirements to 10 CFR 835 were made most of the content of DOE Orders 5000.3B and DOE 5484.1 are not adopted as N	lecessary and Sufficient Standards.
When the above standard is approved in the N&S process, internal implementation compatible with this standard.	programs may be modified to be
	į

1. Issue(s)	Issue orig	in Hazard analysis	Identification Team
169. Radiation - exposure control			
•			1
			İ
·			
Focus group	☐ Fire Protection	☐ Occupational Sa	nfetv
☐ Environmental Protection			
2. Is there a necessary standard which a	applies to this issue	?	X YES NO
		If yes, continue; oth	nerwise skip to 6.
			•
3. Necessary standard(s)			
10 CFR 835.101(c)			
10 CFR 835.202-203 10 CFR 835. 206-208			
10 CFR 835.1001-1003			
10 CFR 835.1302			
•			
	· .		
4. Are there any aspects of these neces	sarv standard(s) whi	ch do not add value?	YES NO
	,	If yes, continue; of	
5. Description of non-value added aspe	cts of necessary sta	andard(s).	
The requirement in 10 CFR 835.101(c) to develop A	LARA plans does not ad	d value but adds significan	t cost. The "shalls" in
10 CFR 835.1001, and .1002 should be replaced wi			
ALARA process as promulgated by such bodies as	ICRP and NCRP. An exc	emption request should be	submitted along
these lines.			İ
6. Is the level of risk associated with the			X YES NO
performance goals assuming compliance	with applicable ued	-	
		it no continue; oti	herwise skip to 12.
7. Is there a non-required external stand	ard which applies to		YES NO
		If yes, continue; oth	erwise skip to 10.

8. External sufficient standard citation		
9. Is the level of risk associated with the issue(s) consistent wit	h	YES NO
management performance goals assuming compliance with the ab	ove	
(non-claratory) external clandary	no continue; oti	nerwise skip to 12.
10. Is an internal standard required to attain a level of risk cons	stent with	YES NO
management performance goals?		
11. Describe nature and status of internal sufficient standard.		1
		}
12. Describe how the levels of risk and cost are consistent with Meeting the requirements of the regulation adequately addresses this issue. The		
management performance goals because management expects to use industrial sindustrial issue and the solution chosen is an industrial solution.		
industrial issue and the solution chosen is an industrial solution.		
		1
	•	ļ
	positive impact	Minor negative impact Major negative impact
No ne	t impact	
14. Describe the nature and status of implementation including		
The program is implemented in the Fermilab Radiological Control Manual. When tr process, internal implementation programs may be modified to be compatible with		approved in the N&S
		1

1.	Issue(s)		Issue d	origin	☐ Hazard analysis 🛛 I	dentification Team
		in occupational radiation protection			····	
''	, Hadiation - QA	in occupational radiation protection				
l						
ł						
<u> </u>						
	Focus group	☐ Emergency Management ☐ Fire F☐ Environmental Protection ☐ Management		woroigh	☐ Occupational Safet	
		Environmental Protection Mana	igement & C	versign	n Madiation Protection	1
_			4- 41-1- 1			
2.	is there a ne	cessary standard which applies	to this is			X YES NO
				lf	yes, continue; other	wise skip to 6.
_	N					
3.	Necessary s	andard(s)				
10	CFR 835.102					
						İ
l						
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		<u> </u>			· · · · · · · · · · · · · · · · · · ·	
4.	Are there any	aspects of these necessary sta	andard(s)	which	do not add value?	YES X NO
				· if	f yes, continue; othe	rwise skip to 6.
5.	Description of	f non-value added aspects of a	necessary	stand	ard(s).	
					· · · · · · · · · · · · · · · · · · ·	
					•	
·		•				
						,
_	1- 4h- 11 -	f what appealated with the !	/a\ a===!=		rith management	V
6.		f risk associated with the issue s assuming compliance with a				XYES NO
hei	.ormanoe goal	c accuming compliance with a	-buanne		If no continue; other	wise skin to 12
					n no conditue, ottlet	mise skip to 12.
	_					
7.	Is there a no	n-required external standard whi	ch applies			YES NO
				lf	yes, continue; other	wise skip to 10.

8. External sufficient standard citation	
2. Is the level of risk associated with the issue(s) consistent with	☐ YES ☐ NO
nanagement performance goals assuming compliance with the above	[123 L 140
non-statutory) external standard? If no continue;	otherwise skip to 12
10. Is an internal standard required to attain a level of risk consistent with management performance goals?	YES NO
management performance goals:	
11. Describe nature and status of internal sufficient standard.	
	•
	,
12. Describe how the levels of risk and cost are consistent with management p	erformance goals.
The cited regulation along with the Fermilab Self-Assessment Program Plan adequately address this isk is consistent with management performance goals because management expects to use indus	
ndustrial issues. This is an industrial issue and the solution chosen is an industrial solution.	illar solutions for
13. Pick the basic implementing assumption from the list. Major positive impact	Minor negative impac
☑ Minor positive impact	☐ Major negative impac
14. Describe the nature and status of implementation including cost-effectiven	less.
This program is implemented by means of the Fermilab Radiological Control Manual.	

				Issue	e origin	☐ Hazard analysis	Identification T	eam
1.	Issue(s)							
171	safety analysis	and documen	ation					
								i
								į
<u> </u>				···				
I	ocus group	☐ Emergency		☐ Fire Protection		☐ Occupational		
		☐ Environme	ntal Protection	Management	& Oversig	ht Radiation Pro	tection	
							_	
2.	Is there a ne	ecessary stan	dard which	applies to this	issue?		🗖 YES 🔀	NO
					11	f yes, continue;	otherwise skip t	o 6.
3.	Necessary s	tandard(s)						
								• 1
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}								Ì
								
	A.a Abaua an		these mass.	oom, stondoud/.	biab	ala mat adal valu		I NO
4.	Are there any	y aspects of	tnese neces	ssary standard(:	-	do not add valu		
					!	n yes, continue,	otherwise skip	10 6.
5.	Description	of non-value	.addad acnd	ects of necessa	mr cton	dard(a)		
5.	Description (or non-value	auded aspe	cts of necessa	Ty Stand	uaru(s).		
1								
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1						4		Ì
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	····							
6.	Is the level	of risk assoc	iated with t	he issue(s) con	sistent	with management		
						sary standards?	YES 🛭	NO
•	_	_	-	·		•	otherwise skip t	o 12.
7	la thora a ==	n required a	vtornol otom	dard which a	lios to t	his issue?		NO.
7.	is there a no	m-requireu e	Alcillai SIANI	dard which app		nis issue <i>:</i> 'yes, continue; «	☐ YES 🔀	
					IT	yes, continue; (omerwise skip ((U 1U.

8. External sufficient standard citation	,
9. Is the level of risk associated with the issue(s) consistent with	YES NO
management performance goals assuming compliance with the above (non-statutory) external standard?	therwise skip to 12.
ii iio ooiiiiilga, o	mornios skip to 12.
10. Is an internal standard required to attain a level of risk consistent with	X YES INO
management performance goals?	MILO LINO
11. Describe nature and status of internal sufficient standard.	
Fermilab ES&H Manual Chapter 2010 constitutes an internal standard on safety analy sis.	
	·
12. Describe how the levels of risk and cost are consistent with management pe	erformance goals.
The internal standard requires safety analysis and documentation at a level consistent with the goal laboratory activities will be assessed to the level necessary to assure achievement of management	
plaboratory activities will be assessed to the level necessary to assure achievement of management of the open of which is to be in the upper quartile of accident/incident experience for comparable industrial s	
<u> </u>	
13. Pick the basic implementing assumption from the list. Major positive impact	Minor negative impact
☐ Minor positive impact ☐ Mo net impact	Major negative impact
Manual Monet impact	
14. Describe the nature and status of implementation including cost-effectivene	
Fermilab has implemented successful and cost-effective programs to assure acceptable performance analysis. The scope and level of detail for safety analyses are determined on a case by case basis upon the scope and level of detail for safety analyses are determined on a case by case basis upon the scope and level of detail for safety analyses are determined on a case by case basis upon the scope and level of detail for safety analyses are determined on a case by case basis upon the scope and level of detail for safety analyses are determined on a case by case basis upon the scope and level of detail for safety analyses.	
approach by the Director or designee. The specific approval mechanisms for all such documents are	
Laboratory Director on a case by case basis.	

YES NO

If yes, continue; otherwise skip to 10.

			Issue	origin	☐ Hazard analysis	Identification Team
1.	Issue(s)	·				
172	. Fire - emerge	ncy responder safety				
!	_					
	Focus group	☐ Emergency Management☐ Environmental Protection		Oversigh	☐ Occupational III ☐ Radiation Pro	
		E Environmental 1 fotcotto	Management a	Oversign	Tadiation 10	itection
2.	is there a n	ecessary standard which	applies to this is	sue?		YES NO
			прриос то пис т		ves continue:	otherwise skip to 6.
				••	yes, continue,	otherwise skip to 6.
3.	Necessary	standard(s)				
		emergency response)				
29 (CFR 1910.135 (occupational head protection)				
	CFR 1910.136 (CFR 1910.156 (f	occupational foot protection)				
41 1		io brigados)				
Illine	ois Health and S	afety Act				
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						I
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		*				
						ĺ
L						
4.	Are there an	y aspects of these nece	ssary standard(s)			
				11	yes, continue;	otherwise skip to 6.
5.	Description	of non-value added asp	acte of naggeery	etand	ard(e)	
э. Г	Description_	or non-value added asp	ects of fielessary	Stariu	aru(s).	
ĺ						
						ł
	•					
6	le the level	of risk associated with	the issue(s) sers!	otant	ith management	
6. per		of risk associated with talls assuming compliance				YES X NO
F					=	otherwise skip to 12.
			·		· · · · · · · · · · · · · · · · · · ·	
7.	is there a n	on-required external stan	dard which applie	s to th	is issue?	YES NO

8. External sufficient standard citation		
NFPA National Fire Codes (NFPA standards list)		
9. Is the level of risk associated with the issue(s) consistent with		
management performance goals assuming compliance with the abo		X YES NO
(otherwise skip to 12
		otherwise skip to 12.
10. Is an internal standard required to attain a level of risk consist	stent with	☐ YES 🔀 NO
management performance goals?		
11. Describe nature and status of internal sufficient standard.		4
·		·
•		
12. Describe how the levels of risk and cost are consistent with I	management	performance goals.
Adherence to the cited legal requirements is sufficient in achieving a low level of ris		
performance goals. The level of risk is consistent with management performance g		
use industrial solutions for industrial issues. This is an industrial issue and the solu	ution chosen is	an industrial solution.
	•	
	•	
40 Piels the besie implementing accounting to the state of the Moior of	nocitivo impact	Minor pagative impact
13. Pick the basic implementing assumption from the list. Major r	ositive impact	☐ Major negative impact
☑ No net		major nogativo impaot
	•	
14. Describe the nature and status of implementation including	cost-effective	ness.
Fermilab's present emergency response force (Fire Department) is currently implen		
. Similar a product officing responds force (in a population, is containly implen	g alo abo	TO Standardo.
	•	
•		

FERMILAB N&S STANDARDS PILOT TABLE I - ISSUES AND STANDARDS SPREADSHEET

ISSUES

STATUTORY REQUIREMENTS INTERNAL STANDARDS

EXT STANDARDS

ΙP

Issue	Requirement	External	Internal	Issue	FG
	00 APP 1000 01/1 \/ \			Origin	
001. Bio - animals 004. Bio - insects 005. Bio - plants	29 CFR 1926.21(b)(4) 29 CFR 1910.132			os	HA
002. Bio - bacteria	77 IAC 900			os	HA
(water)	29 CFR 1910.141				
151. Thermal - wet work environments	29 CFR 1926.27 29 CFR 1926.51				
003. Bio - bloodborne	29 CFR 1910.1030			os	НА
pathogens	20 01110101000			"	''
006. Chem - acids,	29 CFR 1910.1200			os	HA
solvents, toxic agents	29 CFR 1910.1000 40 CFR 355				i i
and haz. liquids 009. Chem - chemical	40 CFR 370	İ			
exposeures exceeding	40 CFR 372				
PÉL.					
013. Chem - nuisance dusts					
016. Chem - use of toxic				1	
materials					
007. Chem - carbon monoxide	29 CFR 1910.1200 29 CFR 1910.146		i ·	os	HA
Horioxide	29 CFR 1910.140 29 CFR 1910.1000				
008. Chem - carcinogens	29 CFR 1910.1000-1200			os	HA
010. Chem - chemical	29 CFR 1910.1200			os	HA
reactions	40 CFR 724.277			1 00	
011. Chem - cutting and burning	29 CFR 1910.1200 29 CFR 1910.1000			os	HA
015. Chem - toxicity in	29 CFR 1910.146	ľ			
smoke or fumes	29 CFR 1910.252-257				
017. Chem - welding fumes				1	i i
012. Chem - heavy	29 CFR 1910.1200			os	HA
metals such as lead	29 CFR 1910.1000		1	1	
l.	29 CFR 1910.1018 (inorganic arsenic)	l		1	
·	29 CFR 1910.1025 (lead) 29 CFR 1926.62 (lead)		1		
014. Chem - pesticides	FIFRA (7 USC 136 et seg.)			EP	HA
055. Env - pesticide	40 CFR Subchapter E	İ	·	os	
application and use	Illinois Pesticide Act, IRS Ch. 5, para. 801 et seq.; 45 IL. CS 60-1	1			
	Structural Pesticide Act IRS Ch 111	}			
	1/2, para. 2201 - 2225				
	29 CFR 1910.1200 29 CFR 1910.1000				
	35 IAC 302.302			1	
·	35 IAC 602.110				
:					
018 Construction -				OS	HA
	20 07 11 1020.000 002				'"`
019. Construction -	29 CFR 1926.850			os	HA
				 	
	29 CFR 1926. 651(h)	ĺ		US	HA
	29 CFR 1926.651-652			os	HA
cave-in and collapse					
022. Construction - earth	29 CFR 1926.600-602			os	HA
	20 CER 1026 604			Ce	
	29 UFN 1920.004			100	НА
	29 CFR 1926.500-503			os	НА
hazards	29 CFR 1926.104				
demolition 020. Construction - dewatering hazard 021. Construction - earth cave-in and collapse 022. Construction - earth moving equipment 024. Construction - earth clearing 025. Construction - fall	35 IAC 652 77 IAC 830 29 CFR 1926.350-352 29 CFR 1926.850 29 CFR 1926.58 (asbestos) 29 CFR 1926.651(h) 29 CFR 1926.601-652 29 CFR 1926.604 29 CFR 1926.604			OS OS OS	

FG (Focus Group) Key:

EM = Emergency Management, EP = Environmental Protection, FP = Fire Protection, MO = Management & Oversight, OS = Occupational Safety, RP = Radiation Protection

IP (Identification Process) Key:

ISSUES	STATUTORY REQUIREMENTS INTERNAL STANDARDS	EXT S FG	TANDARDS IP		
027. Construction - hand tools	29 CFR 1926.300-301 29 CFR 1926.303 29 CFR 1926.305 29 CFR 1910.242			os	HA
028. Construction - heavy equipment	29 CFR 1926.550 29 CFR 1926.600-602 29 CFR 1926.250 29 CFR 1926.251			os	HA
030. Construction - ladder	29 CFR 1926.105 29 CFR 1926.1050-1053 29 CFR 1926.1060 29 CFR 1926.603 29 CFR 1926.851 29 CFR 1926.951 29 CFR 1926.951 29 CFR 1926.451 29 CFR 1926.451 29 CFR 1910.31 29 CFR 1910.31 29 CFR 1910.33			OS	HA
032. Construction - materials handling 033. Construction -	29 CFR 1926.250 29 CFR 1926.602 29 CFR 1926.651(b)			os os	HA
possibility of hitting utilities					
034. Construction - scaffolding	29 CFR 1926.451			os	HA
035. Construction - transportation 128. Other personnel hazards - traffic hazards	29 CFR 1926.600-601 29 CFR 1926.200-202 Illinois Compiled Statutes (ICS) Chapter 625 (State vehicle code)			os	HA
036. Electricity - battery	29 CFR 1910.305(j)(7) (explosion prevention)			os	HA
037. Electricity - exposed conductors / >50 volts 038. Electricity - high voltage	29 CFR 1910.147 (LOTO) 29 CFR 1910.332-333		Fermilab ES&H Manual Chapters 5040-5042, and 5044. In general, OSHA electrical safety standards are not a good match for electrical hazards in a research environment. As such Fermilab has developed internal standards which appear as chapters in its ES&H Manual: 5040 - Defines basic policies and responsibilities. TA provides practical guidance and interpretations of external standards. 5041 - Requirements for working on equipment that goes beyond OSHA. Includes LOTO and work on energized equipment. 5042 - Guidance for work on premises wiring including work permit for energized systems. 5044 - Guidance for exposed conductors in accelerator enclosures.	os	HA

 $\begin{tabular}{ll} EM = Emergency & Management, & EP = Environmental Protection, & FP = Fire Protection, \\ MO = Management & Oversight, & OS = Occupational Safety, & RP = Radiation Protection \\ \end{tabular}$

IP (Identification Process) Key:

ISSUES	STATUTORY REQUIREMENTS INTERNAL STANDARDS	EXT S FG	TANDARDS IP		
039. Electricity - high power 041. Electricity - high current conductors / <50 volts 042. Electricity - stored energy / capacitors 043. Electricity - stored energy / inductors	29 CFR 1910.147 (LOTO) 29 CFR 1910.332-333		Fermilab ES&H Manual Chapters 5040-5042, 5044, and 5046. In general, OSHA electrical safety standards are not a good match for electrical hazards in a research environment. As such Fermilab has developed internal standards which appear as chapters in its ES&H Manual: 5040 - Defines basic policies and responsibilities. TA provides practical guidance and interpretations of external standards. 5041 - Requirements for working on equipment that goes beyond OSHA. Includes LOTO and work on energized equipment. 5042 - Guidance for work on premises wiring including work permit for energized systems. 5044 - Guidance for exposed conductors in accelerator enclosures. 5046 - Guidance for low voltage high current power distribution systems.	OS	HA IT
040. Electricity - lightning	41 IAC - Fire Protection 100 IAC - Fire Prevention and Safety 29 CFE 1910.307(b)(3) (Safe for hazardous [classified] location) 29 CFR 1910.308(e)(3)(i)b (Seperation between lead-in and lightning protection conductors) 29 CFR 1910.106(e)(6)(i) (Ignition source for flammable vapors) 29 CFR 1910.106(h)(7)(i)a (Ignition source for flammable vapors) 29 CFR 1926.152(i)(6) (Ignition source for flammable vapors)	BOCA National Building Code BOCA Fire Prevention Code National Fire Protection Associatio n National Fire Codes (NFPA Standards List) UL Listing		FP	HA
044. Env - air emissions / nonrad	Clean Air Act Amendments 1990, 42 USC 7401 et seq. 40 CFR 50 40 CFR 52 Subpart O 40 CFR 58 40 CFR 60-61 40 CFR 63 40 CFR 80 40 CFR 80 40 CFR 82 40 CFR 88 Subpart C 40 CFR 264-265 35 IAC Subtitle B and permits pursuant	•		EP	НА
045. Env - air emissions / rad	Clean Air Act Amendments 1990, 42 USC 7401 et seq. 40 CFR 61 Subpart H 35 IAC Subtitle B and permits pursuant			EP	HA
046. Env - cultural resources	National Historic Preservation Act of 1966 [amended] Archaeological and Historic Preservation Act of 1974 Archaeological Resources Protection Act of 1979 [amended] Native American Graves Protection and Repatriation Act of 1990 36 CFR 65 36 CFR 78-79 36 CFR 800 43 CFR 7			EP	НА

IP (Identification Process) Key:

ISSUES	STATUTORY REQUIREMENTS INTERNAL STANDARDS	EXT S	TANDARDS	IP		
047. Env - asbestos	29 CFR 1910.1001 29 CFR 1926.58 TSCA, 15 USC 2601 et seq. 40 CFR 61 Subpart M 40 CFR 763				OS OS	НА
048. Env - drinking water quality	SDWA, 42 USC 300f et seq. 40 CFR 141-142 40 CFR 146 40 CFR 146 40 CFR 147 Subpart O Illinois Ground Water Protection Act, IRS 1989 Chapter 111 1/2 35 IAC Subtitle F Chapter I 77 IAC 890 77 IAC 900 77 IAC 920 77 IAC 925 DuPage County Health Department Private Water Supply Ordinance OH0002-90 Ch. 34 Kane County Ordinance 91-101 Water Well Code	Recommen ded Standards for Water Works, Great Lakes Upper Mississipp i R. Bd. of State Public Health & Environme ntal Managers (1992) Handbook for Sampling & Sample Preservati on of Water and Wastewat er, EPA-600/4-82-029			EP	HA
049. Env - endangered species	Endangered Species Act 16 USC 1531 et seq. 50 CFR 17 Illinois Endangered Species Protection Act, IRS 1991, Ch. 8, par. 331 et seq. 17 IAC 525 and permit pursuant				EP	НА
050. Env - groundwater protection	Safe Drinking Water Act, 42 USC Section 300f et seq. 40 CFR 141-142 40 CFR 146 40 CFR 147 Subpart O Illinois Ground Water Protection Act, IRS 1989 Chapter 111 1/2 35 IAC Subtitle F, Chapter I; 730 - 732 77 IAC 920 DuPage County Health Department Private Water Supply Ordinance (OH-0002-90, Ch.34, DuPage County Code) Kane County Health Department Ordinance 91-101 Water Well Code				EP	НА
051. Env - hazardous waste	RCRA, 42 USC 6901 et seq. 40 CFR 260- 270 RCRA Part B Permit (Illinois Log #131), including Emergency Contingency plan 29 CFR 1910.120 35 IAC Subtitle G Federal Facility Compliance Act				EP	НА

IP (Identification Process) Key:

ISSUES	STATUTORY REQUIREMENTS INTERNAL STANDARDS	EXT STANDARDS FG	IP		
052. Env - offsite radiation protection / penetrating		DOE Order 5400.5 Derived Concentrat ion Guide Table and dose limits to the public (Chapter 2, section 1; Chapter 3)		EP	HA IT
053. Env - ozone depleting substances	Clean Air Act Amendments 1990, 42 USC 7401 et seq. 40 CFR 82 E.O. 12843			EP	HA
054. Env - PCBs	TSCA, 15 USC 2601 et seq. 40 CFR 268 40 CFR 302 40 CFR 761 29 CFR 1910.1000 RCRA Part B permit 35 IAC 728 35 IAC 808-809			ß	HA
056. Env - regulated chemical waste / non- hazardous	40 CFR 259 35 IAC 807- 810 35 IAC 700 Subpart F E.O. 12580 E.O. 12856 E.O. 12873			EP	HA IT
058. Env - sanitary and sewer discharges	Clean Water Act, 33 USC 1251 et seq. 40 CFR 116-117 40 CFR 121-125 (exc. 123) 35 IAC Subtitle C and pre-treatment permits pursuant Batavia Code of Regulations, City Ordinance, Section 8-3-10-3 City Code of Warrenville, IL Title 7, Chapter 4	Standard Methods for the Examinati on of Water and Wastewat er, 18th Ed., APHA (1992) DOE 5400.5 (Chapter 2, Section 3)		EP	НА
059. Env - solid waste management units and inactive waste sites	RCRA, 42 USC 6901 et seq. RCRA Part B permit 35 IAC 620 35 IAC 724 35 IAC 815 CERCLA/SARA 42 USC 6901 et seq. 40 CFR 300 40 CFR 302 40 CFR 355 40 CFR 370 40 CFR 370			EP	HA

ISSUES	STATUTORY REQUIREMENTS INTERNAL STANDARDS	EXT S FG	STANDARDS IP		
060. Env - surface water	Clean Water Act, 33 USC 1251 et seq. 40 CFR 110 -125 (exc. 123) 40 CFR 131 40 CFR 136 40 CFR 230 40 CFR 401 - 403 33 CFR 320 - 323 33 CFR 328 - 330. 35 IAC Subtitle C 92 IAC 700 and all permits pursuant 92 IAC 704 and all permits pursuant 92 IAC 708 and all permits pursuant E.O. 10988 E.O. 10990 10 CFR 1022	Standards and Specificati ons for Soil Erosion and Sediment Control, 10/87, IEPA 87- 102 DOE Order 5400.5 (Ch. 2, sec. 1;Ch. 3)			HA
061. Env - transformer oil / non-PCB	Clean Water Act, 33 USC 1251 et seq. 40 CFR 110 40 CFR 112 40 CFR 300 - 302 29 CFR 1910.106 35 IAC 808 - 809			EP	НА
062. Fire - boiler, heating systems, and (commercial) appliances	41 IAC - Fire Protection 100 IAC - Fire Prevention and Safety 120 IAC - Boiler and Pressure Vessels 29 CFR 1910 Subpart E - Means of Egress 29 CFR 1910 Subpart L - Fire Protection 29 CFR 1910 Subpart S - Electrical 29 CFR 1926 Subpart F - Fire Protection and Prevention 29 CFR 1926 Subpart K - Electrical	BOCA National Building Code BOCA Fire Prevention Code National Fire Protection Associatio n National Fire Codes (NFPA Standards List) UL Listing		FP	HA
063. Fire - cigarette smoking	41 IAC - Fire Protection 100 IAC - Fire Prevention and Safety 29 CFR 1910 Subpart H - Hazardous Materials 29 CFR 1910 Subpart L - Fire Protection 29 CFR 1926 Subpart F - Fire Protection and Prevention EPA Air Quality Stds.	,	·	FP	HA
064. Fire - electrical	41 IAC - Fire Protection 100 IAC - Fire Prevention and Safety 29 CFR 1910 Subpart E - Means of Egress 29 CFR 1910 Subpart H - Hazzardous Materials; 29 CFR 1910 Subpart L - Fire Protection 29 CFR 1910 Subpart S - Electrical 29 CFR 1926 Subpart F - Fire Protection and Prevention 29 CFR 1926 Subpart K - Electrical	BOCA National Building Code BOCA Fire Prevention Code National Fire Protection Associatio n National Fire Codes (NFPA Standards List) UL Listing	Fermilab ES&H Manual Chapters 5043, Management and use of cable tray systems, and 5046, Low- Voltage, High-Current Power Distribution Systems. These standards require proper installation of cable trays used for electrical conductors and overcurrent protection for all current carrying conductors in high-current, low-voltage power distribution systems. They have been fully implemented and integrated into management and oversight practices.	FP	НА

EM = Emergency Management, EP = Environmental Protection, FP = Fire Protection, MO = Management & Oversight, OS = Occupational Safety, RP = Radiation Protection

IP (Identification Process) Key:

ISSUES	STATUTORY REQUIREMENTS INTERNAL STANDARDS	EXT S FG	STANDARDS IP		
065. Fire - flammable liquids and gases	41 IAC - Fire Protection 100 IAC - Fire Prevention and Safety; 160 IAC - Storage, Transportation, Sale and Use of Gasoline and Volatrile Oils: Rules Relating to General Storage 170 IAC - Storage, Transportation, Sale and Use of Petroleum and Other Regulated Substances 180 IAC - Storage Transportaition, Sale and Use of Volatile Oils 29 IAC - Emergency Services, Disasters, and Civil Defense, Chapter I: Emergency Services and Disaster Agency, Subchapter f: Chemical Safety IL Public Act 84-852, Illinois Chemical Safety Act 29 CFR 1910 Subpart E - Means of Egress 29 CFR 1910 Subpart H - Hazardous Materials 29 CFR 1910 Subpart L - Fire Protection 29 CFR 1910 Subpart S - Electrical 29 CFR 1926 Subpart F - Fire Protection and Prevention 29 CFR 1926 Subpart K - Electrical	BOCA National Building Code BOCA Fire Prevention Code National Fire Protection Associatio n National Fire Codes (NFPA Standards List) UL Listing	Fermilab ES&H Manual, Chapter 6020.3, Storage and Use of Flammable Gases at Physics Experiments This standard, which governs use of flammable gases in detectors, provides a graded approach based on the inventory of flammable gas involved. The measures and precautions called out are needed because particle detectors cannot be built to comply with the electrical guidelines from the National Electrical Code, NFPA70, Article 501 for NEC Class 1, Group D, Division 2 installations. This standard has been fully implemented and integrated into management and oversight practices.	FP	HA
066. Fire - mobile structures	NOTE: There are no specific legal requirements identified as applicable solely to mobile structures. However, the entirety of OSHA and Illinois Law is applicable to the occupancy and specific use of the structure and contents.	BOCA National Building Code BOCA Fire Prevention Code National Fire Protection Associatio n National Fire Codes (NFPA Standards List) UL Listing		FP	НА
067. Fire - special hazardous materials	29 IAC - Emergency Services, Disasters, and Civil Defense, Chapter I: Emergency Services and Disaster Agency, Subchapter f: Chemical Safety IL Public Act 84-852, Illinois Chemical Safety Act 29 CFR 1910 Subpart E - Means of Egress; 29 CFR 1910 Subpart H - Hazardous Materials 29 CFR 1910 Subpart I - Personal Protective Equipment 29 CFR 1910 Subpart L - Fire Protection 29 CFR 1910 Subpart S - Electrical 29 CFR 1910 Subpart F - Fire Protection 29 CFR 1926 Subpart F - Fire Protection and Prevention 29 CFR 1926 Subpart Z - Toxic and Hazardous Substances 41 IAC - Fire Protection 140 IAC - Policy and Procedures Manual for Fire Protection Personnel	BOCA National Building Code BOCA Fire Prevention Code National Fire Protection Associatio n National Fire Codes (NFPA Standards List) UL Listing	There is always the possibility of introduction of unique one-of-a-kind materials by a physics experiment in order to achieve its research objectives. By making this entry, Fermilab acknowledges its responsibility to develop adequate internal standards for those cases where consensus external standards are not available or not applicable. Individual hazardous material usages may require specific implementation standards to provide for safe usage; this level of risk acknowledgement is to verify the commitment to do so.	FP	HA IT

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IP (Identification Process) Key:

ISSUES	STATUTORY REQUIREMENTS INTERNAL STANDARDS	EXT S FG	STANDARDS IP		
067B. Fire - hydrogen targets			Fermilab ES&H Manual Chapter 5032.2, Guidelines For the Design, Fabrication, Testing, Installation, and Operation of LH2 Targets Fermilab has developed these guidelines to address the hazards associated with these targets. The latest version of this document has been in existence and use for over 6 years.	OS	I
068. Fire - special occupancies / accelerator and beam line enclosures	41 IAC - Fire Protection 100 IAC - Fire Prevention and Safety 29 CFR 1910 Subpart E - Means of Egress 29 CFR 1910 Subpart L - Fire Protection 29 CFR 1910 Subpart S - Electrical 29 CFR 1926 Subpart F - Fire Protection and Prevention 29 CFR 1926 Subpart K - Electrical	BOCA National Building Code BOCA Fire Prevention Code NFPA 101 & 101A current editions National Fire Protection Associatio n National Fire Codes (NFPA Standards List) UL Listing	Fermilab ES&H Manual Chapter 5043, Management and use of cable tray systems. This standard requires proper installation of cable trays used for electrical conductors. It has been fully implemented and integrated into management and oversight practices.	FP	HA
069. Fire - spontaneous combustion	41 IAC - Fire Protection 100 IAC - Fire Prevention and Safety 29 CFR 1910 Subpart E - Means of Egress 29 CFR 1910 Subpart L - Fire Protection 29 CFR 1926 Subpart F - Fire Protection and Prevention	·		FP	НА
070. Fire - stationary combustion engines		NFPA 37: Standards for the Installation and Use of Stationary Combustio n Engines and Gas Turbines.		FP	HA
071. Fire - storage of combustibles	41 IAC - Fire Protection 100 IAC - Fire Prevention and Safety 29 IAC - Emergency Services, Disasters, and Civil Defense, Chapter I: Emergency Services and Disaster Agency, Subchapter f: Chemical Safety IL Public Act 84-852, Illinois Chemical Safety Act 29 CFR 1910 Subpart E - Means of Egress 29 CFR 1910 Subpart H - Hazardous Materials 29 CFR 1910 Subpart L - Fire Protection 29 CFR 1910 Subpart S - Electrical 29 CFR 1926 Subpart F - Fire Protection and Prevention 29 CFR 1926 Subpart Z - Toxic and Hazardous Substances	BOCA National Building Code BOCA Fire Prevention Code National Fire Protection Associatio n National Fire Codes (NFPA Standards List) UL Listing		FP	НА

EM = Emergency Management, EP = Environmental Protection, FP = Fire Protection, MO = Management & Oversight, OS = Occupational Safety, RP = Radiation Protection

IP (Identification Process) Key:

ISSUES	STATUTORY REQUIREMENTS INTERNAL STANDARDS	EXT S FG	TANDARDS IP		
072. Fire - transportation / rail, vehicle, and fueling 077B. HazMat transport - fire/explostion / onsite	41 IAC - Fire Protection 100 IAC - Fire Prevention and Safety 160 IAC - Storage, Transportation, Sale and Use of Gasoline and Volatrile Oils: Rules Relating to General Storage 170 IAC - Storage, Transportation, Sale and Use of Petroleum and Other Regulated Substances 180 IAC - Storage Transportation, Sale and Use of Volatile Oils 49 CFR 383.23 Commercial Drivers License 49 CFR 393.95 Emergency Equipment on Vehicles 49 CFR 397.11 Fires 49 CFR 397.13 Smoking 49 CFR 397.15 Fueling 49 CFR 177.848 C (Segregation table for hazardous materials)	BOCA National Building Code BOCA Fire Prevention Code National Fire Protection Associatio n National Fire Codes (NFPA Standards List) UL Listing		FP	HA
073. Fire - welding near combustibles 074. Fire - spark producing tools near combustibles	41 IAC - Fire Protection 100 IAC - Fire Prevention and Safety 29 CFR 1910 Subpart L - Fire Protection 29 CFR 1910 Subpart Q - Welding, Cutting and Brazing 29 CFR 1926 Subpart F - Fire Protection and Prevention	BOCA Fire Prevention Code NFPA 1: Fire Prevention Code NFPA 51: Standard for the Design and Installation of Oxygen- Fuel Gas Systems for Welding, Cutting, and Allied Processes NFPA 51B: Standard for Fire Protection in Use of Cutting and Welding Processes	Fermilab ES&H Manual Chapter 6020.3, Storage and Use of Flammable Gases at Physics Experiments. This standard calls for a minimum separation between welding, burning, brazing and grinding operations and physics experiment apparatus using flammable gases. If the minimum separation is not practical, the flammable gas inventory must first be removed from the apparatus before operations are permitted. This requirement has been integrated into the welding, burning and brazing permit control process.	FP	HA
075A. HazMat transport - bad road conditions / offsite	49 CFR 392.14 (Hazardous conditions; extreme caution)			os	HA IT
075B. HazMat transport - bad road conditions / onsite		49 CFR 392.14 (Hazardou s conditions; extreme caution - not required onsite)		OS	HA IT

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IP (Identification Process) Key:

ISSUES	STATUTORY REQUIREMENTS INTERNAL STANDARDS	EXT S FG	TANDARDS	IP		
076A. HazMat transport- emergency response and spill clean up / offsite 081A. HazMat transport- spills and chemical releases /offsite	49 CFR 172.600G (Emergency response information) 49 CFR 171.15 (Immediate notice of certain hazardous material incidents) 40 CFR 112 (Oil pollution prevention) 40 CFR 761 (PCB spill cleanup policy) 40 CFR 302 (Designation, reportable quantities & notification) 40 CFR 355 (Emergency planning & notification)				en os	HA IT
076B. HazMat transport- emergency response and spill cleanup / onsite 081B. HazMat transport- spills and chemical Releases / onsite	29 CFR 1910.120 (Hazardous waste operations & emergency response) 40 CFR 112 (Oil pollution prevention) 40 CFR 761 (PCB spill cleanup policy) 40 CFR 302 (Designation, reportable quantities & notification) 40 CFR 355 (Emergency planning & notification)				B O	HA IT
077A. HazMat transport - fire and explostion / offsite	49 CFR 171.15 (Immediate notification of certain hazardous materials incidents) 49 CFR 172.600G (Emergency response information)				os	HA IT
078A. HazMat transport - loading and unloading / offsite	49 CFR 177.834B (Loading & unloading) 29 CFR 1910.176 (Handling materials - general) 29 CFR 1910.178 (Powered industrial trucks)				os	IT HA
078B. HazMat transport - loading and unloading / onsite 095B. Material handling - transportation / onsite	29 CFR 1910.176 (Handling materials - general) 29 CFR 1910.178 (Powered industrial trucks)	49 CFR 177.848C (Segregati on table for hazardous materials - not required onsite)			os	HA IT
079A. HazMat transport - packaging hazardous materials / offsite	49 CFR 178.500L Subchapter C (Specifications for packagings)				OS	HA IT

ISSUES	STATUTORY REQUIREMENTS INTERNAL STANDARDS	FG	STANDARDS	IP		
079B. HazMat transport - packaging hazardous materials / onsite		49 CFR 173.24(e)(1-2)			OS	HA IT
materials / Grisite		(Chemica				
		compatibil ity for single				
		packaging s) 49 CFR				
		173.24(e)(4)(i-iii) (Chemica				
w .		compatibil ity for multiple packaging				
		s) 49 CFR 173.24a (a)(1)				
		(Positioni ng of inner receptacle s)				
·		49 ĆFR 173.24a (a)(3-4) (Packing				
		for inner receptacle s) 49 CFR				
		177.848C (Segregati on table for				
	,	hazardous materials) 49 CFR 178.500L				
		Subchapte r C (Segregati on table				
		for table for hazardous materials)				
079C. HazMat transport - transportation of radioactive materials	49 CFR 100-199 and references				RP	HA H
080A. HazMat transport - prolonged periods of driving / offsite 080B. HazMat transport -	49 CFR 395 (Maximum driving and on- duty time)				OS	HA IT
080B. HazMat transport - prolonged periods of driving / onsite		49 CFR 395.3 (Maximu m driving			OS	HA IT
		& on-duty time - not required onsite)				

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IP (Identification Process) Key:

ISSUES	STATUTORY REQUIREMENTS INTERNAL STANDARDS	EXT S FG	TANDARDS IP		
081C. Hazardous material transport - spills and chemical releases	CERCLA/SARA 42 USC 6901 et seq. 40 CFR 116 - 117 40 CFR 300 40 CFR 302 40 CFR 311 40 CFR 355 49 CFR 172 Subpart G 35 IAC Subchapter H, Subpart D 35 IAC 808-809			EP	НА
082. Magnetic fields - bioelectric implants 083. Magnetic fields - fringe fields 084. Magnetic fields - high magnetic fields		ACGIH TLV for static magnetic fields		OS	HA
086. Material handling - chemical spills	29 CFR 1910.120 29 CFR 1910.1200 29 CFR 1910.176			OS	HA
087. Material handling - cranes and hoists	29 CFR 1910.179 (Overhead and gantry cranes) 29 CFR 1910.180 (Crawler locomotive and truck cranes)	ANSI B30.20 - 1990 (Overhead and gantry cranes) ANSI B30.5 - 1989 (Mobile and locomotive cranes)		OS	HA
088. Material handling - elevators used for hazardous material			Fermilab ES&H Manual chapter 5032.3, Transporting Gases in Building Elevators, has been written and in force for several years. It was written to specifically address the hazards associated with transporting cryogenic dewars and room temperature gas cylinders in Wilson Hall elevators and to minimize the potential risks.	OS	HA
089. Material handling - falling objects	29 CFR 1910 Subpart I (PPE) 29 CFR1910 Subpart N (Materials Handling and Storage)			OS	HA
090. Material handling - forklift operation	29 CFR 1910.178			os	HA
091. Material handling - hazardous tools equipment and machinery	29 CFR 1910.94 29 CFR 1910.106 29 CFR 1910.108 29 CFR 1910.215 29 CFR 1910.231 29 CFR 1910.242-244			os	HA
092. Material handling - lifting objects	29 CFR 1910.184 (Slings)	ASME B30.20 - 1993 (Below the hook lifting devices) ANSI B30.9 - 1990 (Slings) ANSI B30.10 - 1993 (Hooks)		os	HA
093. Material handling -	29 CFR 1910 Subpart N (Materials	(FIOORS)		os	НА
moving objects 094. Material handling - storage and handling of toxic materials.	Handling and Storage) 29 CFR 1910.176 29 CFR 1910.1200			os	НА
095A. Material handling - transportation / offsite	49 CFR 177.834 Subpart B 29 CFR 1910.176 29 CFR 1910.178			OS	HA IT

IP (Identification Process) Key:

ISSUES	STATUTORY REQUIREMENTS INTERNAL STANDARDS	EXT S FG	STANDARDS IP		
096. NIR - intense light sources	29 CFR 1910.133 29 CFR 1926.102 (Eye and face protection)	_		os	HA
097. NIR - lasers	29 CFR 1926.54 (Nonionizing radiation) 29 CFR 1910.269(w)(8) (Electric power)	ANSI Z136.1- 1993 (Lasers)		os	HA
098. NIR - radiofrequency radiation	29 CFR 1910.97 (Nonionizing radiation) 29 CFR 1926.54 (Nonionizing radiation) 29 CFR 1910.268(p) (Telecommunications) 29 CFR 1910.269(s) (Electric power)	ACGIH TLV for radiofrequ ency/micr owave radiation		os	HA
099. NIR - ultraviolet light 149. Thermal - ultraviolet radiation / sun exposure	29 CFR 1910.133(a)(5) (Eye and face protection) 29 CFR 1910 Subpart I Appendix B (PPE) 29 CFR 1910.252(b) (Welding, cutting, brazing) 29 CFR 1926.102(b)(1) (Eye and face protection) 29 CFR 1926.353(d) (Ventilation and protection in welding, cutting, brazing)	ACGIH TLV for ultraviolet radiation		os	НА
101. ODH - cryogenic gas or liquid leaks 102. ODH - cryogenic spills 103. ODH - gaseous argon or other detector gas 104. ODH - leak of supplied gas 085. Magnetic fields - quench effects			Fermilab ES&H Manual chapter 5064, Oxygen Deficiency Hazard, has been in force for over 15 years. It was developed to specifically address the ODH hazards at Fermilab and to minimize the potential risks.	os	HA
105B. ODH - mechanical refrigeration systems		ASHRAE - 15 - 1989 or later version	Fermilab ES&H Manual Chapter 5035, Mechanical Refrigeration Systems, incorporates the above mentioned standard. This chapter effectively references the ASHRAE standard.	os	ΙΤ
106. Other mechanical hazards - general environmental control	29 CFR 1910.94 29 CFR 1910.95 29 CFR 1910.97 29 CFR 1926.50 29 CFR 1926.51 29 CFR 1910.52 29 CFR 1910.55 29 CFR 1910.55 29 CFR 1926.56 29 CFR 1926.57 29 CFR 1926.59 29 CFR 1910 Subpart J		·	os	HA
107. Other mechanical hazards - machine guarding	29 CFR 1910 Subpart O	ANSI B15.1 (Power transmissi on apparatus) ANSI O1.1 (Woodwor king machinery) ANSI B11 series (Metalwor king - applicable sections)		OS	HA

IP (Identification Process) Key:

ISSUES	STATUTORY REQUIREMENTS INTERNAL STANDARDS	EXT S FG	STANDARDS IP		
108. Other mechanical hazards - machinery and rotating parts	29 CFR 1910 Subpart F 29 CFR 1910 Subpart N 29 CFR 1910 Subpart O 29 CFR 1910 Subpart P	ANSI B11 series (Metalwor king - applicable portions) ANSI B15.1 (Power transmissi on apparatus) ANSI O1.1 (Woodwor king machinery)		OS	HA
109A. Other mechanical hazards - medical and first aid blood bome pathogens, lead, noise, asbestos, and respiratory protection	29 CFR 1910.151 (medical services and first aid) 29 CFR 1910.1030 (Blood borne pathogens) 29 CFR 1910. 1025(j) (Lead) 29 CFR 1910.95(g) and (h) (Noise) 29 CFR 1910.1001(Asbestos) 29 CFR 1910.134 (b)(10) (Respiratory protection)			os	HA
109B. Surveillance - tuberculosis		II. Departme nt of Public Health, DuPage County Dept. Public Health. CDC December 7,1990		os	HA IT
110. Other mechanical hazards - powered platforms	29 CFR 1910 Subpart F (Powered Platforms, Manlifts, and Vehicle Mounted Work Platforms)	7,1000		os	НА
111A. Other mechanical hazards - pressurized tanks and containers	29 CFR1910.169 (Air receivers)	ASME Pressure Vessel Code - Section VIII	Fermilab ES&H Manual Chapter 5031, Pressure Vessels, has been written and in use for over 15 years. It has effectively minimized personnel exposure and equipment downtime from vessel failures.	OS	HA IT
111B. Other mechanical hazards - pressurized lines and piping systems	29 CFR1910.169 (Air receivers)	ASME/ANSI B31.1 ASME/ANSI B31.3 ASME/ANSI B31.5 ASME/ANSI B31.8	Fermilab ES&H Manual Chapter 5031.1, Pressure Piping Systems, has been written and in use for over 15 years. It has effectively minimized personnel exposure and equipment downtime from piping failures.	OS	HA IT
112. Other mechanical hazards - material grinding, cutting, and drilling	29 CFR 1910.94 29 CFR 1910.212-213 29 CFR 1910.215 29 CFR 1910.243	ANSI 01.1 (Woodworking machinery) ANSI B11.8 (Drilling, milling, and boring machines) ANSI B11.9 (Grinding machines)		os	НА

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IP (Identification Process) Key:

ISSUES	STATUTORY REQUIREMENTS INTERNAL STANDARDS	FG	TANDARDS IP		
113. Other mechanical hazards (also fire) - means of egress	41 IAC - Fire Protection 100 IAC - Fire Prevention and Safety 71 IAC - Illinois Accessibility Code Subparts C-F 29 CFR 1910 Subpart E - Means of Egress 29 CFR 1910 Subpart L - Fire Protection 29 CFR 1926 Subpart F - Fire Protection and Prevention Uniform Federal Accessibility Standards, Chapter 4, Accessible Elements and Spaces: Scope and Technical Requirements	BOCA National Building Code BOCA Fire Prevention Code NFPA 101 & 101A current editions: Code for Safety to Life from Fire in Buildings and Structures		FP	НА
114. Other mechanical hazards - moving vehicles, carts, and forklifts	29 CFR 1910 Subpart N 29 CFR 1910 Subpart F			OS	HA
115. Other mechanical hazards - special hand tools and power driven nail guns, etc.	29 CFR 1910.243 29 CFR 1926.302			os	HA
116. Other mechanical hazards - work with roads and grounds equipment	29 CFR 1910.132-133 29 CFR 1910.136 29 CFR 1910.212 29 CFR 1910.215 29 CFR 1910.241 29 CFR 1910.243-244 29 CFR 1928 Subpart C (Roll-over protective structures) 29 CFR 1928 Subpart D (Safety for agricultural equipment)			os	НА
117. Other personal hazards - confined space	29 ČFR 1910.146-147			os	НА
119. Other personal hazards - hazards requiring PPE 126. Other personal hazards - sharp edges	29 CFR 1910 Subpart I 29 CFR 1926 Subpart E Other PPE requirements picked up in specfic OSHA standards			os	HA
120. Other personal hazards - high noise levels	29 CFR 1910.95			os	НА
121. Other personnel hazards - housekeeping	29 CFR 1926.25 29 CFR 1910.22 29 CFR 1910.106 29 CFR 1910.176 29 CFR 1910.141			os	НА
122. Other personnel hazards - ice/walking surfaces 127. Other personnel hazards - slips, trips & falls 131. Other personnel hazards - work on wet surface	29 CFR 1910.22 29 CFR 1926.25 29 CFR 1910.21 29 CFR 1910.23-30			os	НА
123. Other personal hazards - lifting and carrying heavy objects			Fermilab ES&H Manual Chapter 5084, Ergonomic Protection, was prepared as a consequence of the N&S standards process. It formalizes the ongoing program of medical reviews, training, and work practice evaluations associated with this issue.	os	НА
124. Other mechanical hazards - pinch points	29 CFR 1910 Subpart O 29 CFR 1910 Subpart P			os	IT

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IP (Identification Process) Key:

ISSUES	STATUTORY REQUIREMENTS INTERNAL STANDARDS	FG	TANDARDS IP		
125. Ofher personal hazards - repetitive motion		ANSI Z365 (draft)	Fermilab ES&H Manual Chapter 5084, Ergonomic Protection, was prepared as a consequence of the N&S standards process. This standard is based on successful and cost- effective internal past practices (rather than the draft ANSI standard cited in #8).	OS	НА
129. Other personnel hazards - vacuum tanks			Fermilab ES&H Manual chapter 5033, Vacuum Vessel Safety, and a number of Fermilab Technical Memos have been written and in force for several years. These were written to specifically address the vacuum hazards at Fermilab and to minimize the potential risks.	OS	НА
130. Other personal hazards - vibration		ACGIH TLV for hand- arm segmental vibration		os	HA
132. Other personnel hazards - working at heights	29 CFR 1926.104 29 CFR 1926.500-503 29 CFR 1910 Subpart D 29 CFR 1910.252(b)(1)(l)			os	HA
133. Radiation - radioactive contamination 138. Radiation - radioactivated soil 141A. Radiation - residual contamination	10 CFR 835.603 10 CFR 835.404 10 CFR 835.1101 10 CFR 835 Appendix D			RP	HA
134 /142. Radiation - special nuclear materials (SNM) and nuclear materials	Atomic Energy Act		Presently the Fermilab ES&H Section Specific Quality Implementation Plan (SQIP) RPS.8 constitutes an internal standard on nuclear material and special nuclear material based on DOE Orders 5633.3B, 5634.1B, 5632.1C, and 5660.1B. Upon approval of the N&S Set of standards, this internal standard will be improved to be consistent with management performance goals.	RP	HA IT
135. Radiation - mixed waste 140. Radiation - radioactive waste	WHC-EP-0063 Rev (or equivalent that might receive FNAL wastes) 40 CFR 260-270 35 IAC 700-730 (also see hazardous waste regs.)		.	RP	HA
136. Radiation - prompt radiation	10 CFR 835.501-502 10 CFR 835.601-603			RP	НА
137. Radiation - radioactive sources			Fermilab Radiological Control Manual Articles (FRCM) 365 and FRCM Chapter 4 Part 3 constitute an internal standard. These Fermilab policies are based on and are consistent with DOE N5400.9.	RP	HA IT
139. Radiation - radioactive liquids and gases	10 CFR 835,209 10 CFR 835,603 10 CFR 835,1101 10 CFR 835 Appendices A- C		Fermilab Radiological Control Manual Article 349 contains procedures needed to control radioactive liquids and gases in accelerator components. This constitutes an internal standard.	RP	НА

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IP (Identification Process) Key:

ISSUES	STATUTORY REQUIREMENTS INTERNAL STANDARDS	EXT S FG	TANDARDS IP		
141B. Radiation - residual activity 143. Radiation - storage and handling of radioactive materials	10 CFR 835.601-603 10 CFR 835.501-502 10 CFR 835 Appendix B 10 CFR 835 Appendix C		Fermilab Radiological Control Manual Article 411. DOE has approved Fermilab criteria for the release of material which is determined to be nonradioactive. These criteria are needed to augment the cited regulatory requirements which do not embody such release criteria. It is presently incorporated into Article 411 of the Fermilab Radiological Control Manual and thus exists as an internal standard.	RP	HA
144. Thermal - battery bank and UPS equipment	29 CFR 1910.178(g)			os	HA
145. Thermal - cold work environments		ACGIHTLV for cold stress		os	HA
146. Thermal - cryogens			Fermilab ES&H Manual chapters 5032 and 5032.1, Cryogenic System Review and Liquid Nitrogen Dewar Installation, respectively, are written and have been in force for several years. It was developed to specifically address the cryogenic hazards at Fermilab and to minimize the potential risks.	os	НА
147. Thermal - high temperature equipment	29 CFR 1910.107(c)(3) 29 CFR 1910.303(b)(1)(iv) 29 CFR 1910.305(j)(4)(iii) 29 CFR 1910.307 29 CFR 1910.335(a)(2)(ii)			OS	HA
148. Thermal - hot work environments		ACGIH TLV for heat stress		os	НА
152. Emergency preparedness - severe weather 029. Construction - high winds			Fermilab Emergency Plan Sections 35A, 35B, and 41. 1.) Personnel Warning - Severe weather Fermilab Emergency Plan, 9/92, Section 35A 2.) Shelters - Severe weather Fermilab Emergency Plan, 9/92, Section 35B 3.) Warning Signals - Severe weather Fermilab Emergency Plan, 9/92, Section 41	EM	HA
153. Emergency preparedness - safeguards and security	10 CFR 860 (Trespass to land owned & leased by the U.S. government.) 18 U.S. Code Sections 841-848 (Use, or threat of use, of explosives; includes civil disorders.) 10 CFR 1046 Subpt. B, App A, Chpt X, Paragraphs H through I inclusive (Physical protection of security interests, protective force personnel) Illinois Compiled Statutes (ICS) Chapter 625 (State vehicle code)		•	ĒΜ	IT
154. Emergency preparedness - generic	29 CFR 1910.38 Employee emergency plans and fire prevention plans. 40 CFR 300.150 (EPA) 40 CFR 311.1 Worker Protection E.O. 12356 of Aug. 1, 1982 (National security information - security training) Title 5 U.S.Code 4103 (Training - security) 28 CFR 36 Sections 4.1.3 (9) and 302(b)(2) (Americans with disabilities act - accomodations and accessiblity)	NFPA 1561, Standard of Fire Dept. Incident Managem ent System		ĒM	ΙT

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IP (Identification Process) Key:

ISSUES	STATUTORY REQUIREMENTS INTERNAL STANDARDS	EXT S' FG	TANDARDS IP		
155. Env - underground storage tanks	RCRA, 42 USC 6901 et seq. 40 CFR 280 35 IAC 731 - 732 35 IAC 170 35 IAC 170 Subpart A			EP	IT
156. Other mechanical hazards - aviation	14 CFR 91 (General operating and flight rules) SFAR 62 (Suspension of certain aircraft operations from the transponder) 14 CFR 830 (Notification and reportingaccidents and incidents) 14 CFR 135 (Taxi operators and commercial operators)			os	łΤ
159. Emergency preparedness - hazardous materials	29 CFR 1910.120 (q)(2) Elements of an Emergency Response Plan Illinois Chemical Safety Act (as ammended by P.A. 85-1325, effective August 31, 1988)			EM	IT
160. Emergency preparedness - toxicity in smoke or fumes	29 CFR 1910.38 (evacuation, accountability during emergency) 29 CFR 1910.120 (emergency response) 29 CFR 1910.134 (respirators) 29 CFR 1910.1000 Subpart Z (Protective Exposure Limits) 41 IAC			EM	IT
161. Env - general environmental protection planning	NEPA 42 USC 4321 et seq. 40 CFR 1500 - 1508 10 CFR 1021			EP	17
163. Occupational safety administrative requirements	5(a)(1) of the OSH Act (General duty clause) 29 CFR 1903.2 (Posting of notice) 29 CFR 1903.13 (Imminent danger) 29 CFR 1904 (Recordkeeping and reporting occupational injuries and illnesses) 29 CFR 1910.20 (Access to employee exposure and medical records) 29 CFR 1977.4 (Persons prohibited from discriminating) 29 CFR 1977.12 (Exercise of any right afforded by the Act)			МО	IT
164. Occurrence Reporting			Presently, Fermilab ES&H Manual Chapter 3050 constitutes an internal standard on occurrence reporting based upon DOE 5000.3B. This standard should be modified to define the areas for which occurrence reporting to DOE and to URA corporate headquarters will, in general, be done, once the ES&H N&S Standards set has been officially adopted for implementation. These areas include 1) when laws or regulations require reporting of incidents and occurrences outside the scope of normal operations, 2) when there is adverse public interest in an occurrence, 3) when a serious degradation in facility condition or personnel safety occurs, and 4) when the information is deemed to be, in the judgement of the Laboratory or the Contracting Officer, of significant value to other facilities in the DOE complex. Such reports will be provided to the Contracting Officer and shall be deemed to be sufficient.	МО	IT

IP (Identification Process) Key:

ISSUES	STATUTORY REQUIREMENTS INTERNAL STANDARDS	EXT S FG	TANDARDS IP	•	
165. Radiation - radiological emergency response (see 154.)	10 CFR 835.1301 10 CFR 835.1302 (covers records and dose limits for), for more see Emerg. Prep. 154			RP.	IT
166. Radiation - radiological training	10 CFR 835.901-903			RP	П
167. Radiation - monitoring and measurement of radiation	10 CFR 835.401-404 10 CFR 835.1101		·	RP	ļ T
168. Radiation - record keeping in occupational radiation protection	10 CFR 835.4 10 CFR 835.204 10 CFR 835.701-704 10 CFR 835.801 10 CFR 835.1101 10 CFR 835.1301 Privacy Act of 1974	٠		RP	=
169. Radiation - exposure control	10 CFR 835.101(c) 10 CFR 835.202-203 10 CFR 835. 206-208 10 CFR 835.1001-1003 10 CFR 835.1302			RP	
170. Radiation - QA in occupational radiation protection	10 CFR 835.102			RP	I IT
171. Safety analysis and documentation			Presently, Fermilab ES&H Manual Chapter 2010 constitutes an internal standard on safety analy sis. Upon approval of the N&S Set of standards, this internal standard will be improved by considering DOE Order 5480.25.	МО	IT
172. Fire - emergency responder safety	29 CFR 1910.120 (emergency response) 29 CFR 1910.135 (occupational head protection) 29 CFR 1910.136 (occupational foot protection) 29 CFR 1910.156 (fire brigades) 41 IAC Illinois Health and Safety Act	NFPA National Fire Codes (NFPA standards list)		FP	- 1 T

FERMILAB PILOT NECESSARY AND SUFFICIENT IDENTIFICATION TEAM DOCUMENT

Submitted to the Convened Group by The Fermilab N&S Identification Team

July 12, 1995

Introduction - The N&S Process

This summary report documents the results of the work of the Identification Team for the pilot "Necessary and Sufficient Closure Process" for ES&H Standards at Fermilab, which was carried out in February-June, 1995. (The "Necessary and Sufficient Closure Process" was developed by the DOE's Department Standards Committee, to implement Criterion 6.3 of the Department's Standards Program, which defines the process whereby DOE line management and Contractor management develop, approve, and maintain a necessary and sufficient set of standards for Department and Contractor operations.)

The implementation of the N&S pilot process at Fermilab was initiated by a February 23, 1995 memorandum from Wilmot Hess (ER-20) to Andrew Mravca (Manager, BAO). This activity was subsequently authorized by Martha Krebs¹ (ER-1) and Tara O'Toole² (EH-1). Fermilab management has made every effort to implement its pilot in strict accordance with the "Necessary and Sufficient Closure Process" protocols.

The Convened Group for the Fermilab Pilot N&S Process met several times to establish the protocols for the Pilot and create the Identification Team, and fulfill all the other requirements for the Convened Group as defined in Process Elements 1, 2, and 3. Fermilab management appointed Larry Coulson to be the Process Leader. In consultation with the Convened Group, the Process Leader subsequently assembled the Identification Team, and developed a Charter for and Charge to the Identification Team.

The Process Leader also solicited information necessary to define the work to which the standards will apply. A bottoms-up, worker safety oriented "Hazard Identification Process" was employed by Fermilab to develop an initial list of hazard issues at the

Letter from Martha Krebs to John Peoples, Fermilab Director, 3/21/95.
Letter from Tara O'Toole to Frederick Bernthal, URA President, 4/21/95.

Laboratory. This list of hazard issues was the starting point for determining the set of N&S ES&H Standards for Fermilab.

Proposed N&S ES&H Standards

The proposed List of Fermilab Necessary & Sufficient (N&S) ES&H Standards is based on a comprehensive final set of hazard issues that were considered by the Identification Team. The Team has documented its analysis of these issues in "Fermilab Identification Team Documentation" (FITD) reports which describe, for each hazard issue considered, the nature of the N&S standards chosen (necessary, external sufficient, or internal sufficient), the extent to which they are both necessary and sufficient, and the impact of implementing them.

The attached table, "Rolled-up Standards List", contains the necessary, external sufficient, and internal sufficient standards selected by Fermilab's Identification Team. This is the list which is proposed for inclusion in the DOE-URA Contract. However, it must be made clear, if these are incorporated into the URA/DOE contract, that only the applicable and enforceable parts of these standards are to be implemented. This needs to be done because in order to preserve sufficiency of the set, portions of citations were included that are not applicable to Fermilab operations and/or not enforceable (i.e., guidance). Rather than attempt an explicit and precise analysis of all necessary standard citations to remove each and every part that is not applicable, broad and inclusive citations were made and thus must be qualified by the phrase "applicable and enforceable parts thereof". The Team also understands that there may be unforeseen instances where the application of these standards can present significant barriers to implementation. In such cases Fermilab should notify the Batavia Area Office and work out an "equivalency" arrangement.

Are the Proposed Standards "Necessary"?

The following elements of the Identification Team process provide confidence that the standards included in the proposed N&S set are necessary:

1. Where a necessary standard was cited by the ID Team, that requirement is included in the N&S List. Necessary standards are deemed to include those to which Fermilab is legally required to comply, as well as those which would be legally-applicable if Fermilab were a private sector employer. Although there are hazard issues for which non-value added aspects of necessary standards are identified in

Part 4 of the FITD analysis reports, the cited standards are still considered part of the N&S List.

- Other external and internal standards are included in the N&S List where, in the opinion of the Identification Team, often with the advice of Subject Matter Experts (SMEs), they are required to achieve a "sufficient" level of ES&H risk (i.e., that is consistent with the Laboratory management's expectations of ES&H performance). The basis for this conclusion is documented in Part 12 of each FITD analysis report.
- 3. Laboratory management decisions can result in additional standards to be required that otherwise would not apply. (For example, the decision to locate a Fire Station on site instead of relying on local fire fighting capabilities makes Fermilab subject to fire station standards.) Those standards whose inclusion is triggered by such Fermilab management decisions were also identified, and included in the N&S List.

It is the consensus of the ID Team that the List of Standards presented in the attached table is a list of necessary standards.

Are the Proposed Standards "Sufficient"?

The following elements of the Identification Team process provide confidence that the proposed set of N&S Standards is sufficient:

- 1. It was based on an initial list of hazard issues identified by the line managers at the Laboratory, which was subsequently validated and supplemented by the Identification Team and SMEs.
- 2. Each hazard issue was reviewed by one or more Identification Team "Focus Groups" (six sub-groups of the Identification Team, which were charged with identification of ES&H standards in six topic areas -- fire protection, radiation protection, environmental protection, occupational safety & health, emergency response, and management & oversight issues), in consultation with SMEs, through a deliberative process represented by the fourteen parts of the FITD analysis reports.
- 3. Finally, the full Identification Team reviewed and discussed each functional area focusing on any complex hazard issues.

It is the consensus of the ID Team that the List of Standards presented in the attached table is a sufficient set of standards.

Recommendation

The Identification Team believes that adoption of this set of standards, along with appropriate implementation, is necessary and sufficient for Fermilab to achieve a level of ES&H performance consistent with Fermilab management's goals; that is, adequate protection of people and the environment at the lowest cost.

In conclusion, the Identification Team considers the "N&S List of Standards" presented in the attached table to be a Necessary and Sufficient Set of ES&H Standards for Fermilab, and recommends its approval.

Implementation Considerations

In order for the Laboratory to meet the "sufficient" criteria in the future, the following considerations must be addressed. Sometimes more than one acceptable approach to satisfying a particular ES&H standard may exist. If the Laboratory wishes to conduct an activity in a manner which is not in strict conformance with the N&S Set but offers equivalent protection, determination of the Contracting Officer will be necessary. If the Laboratory wishes to make a minor change, not affecting the level of protection, to an internal standard called out in the N&S set it will do so. If the Laboratory wishes to make a significant change to an internal standard called out in the N&S set, one affecting the level of protection, it will consult the Contracting Officer prior to the change.

In those situations where the Laboratory determines that a particular standard (or part of a standard) is not appropriate or not applicable, the Laboratory Director, with the advice of the Laboratory's Senior Safety Officer, will decide whether to formally request an exemption. The Laboratory will work with the Contracting Officer if any exemption from the N&S set is needed. The Director will transmit any exemption request to the Contracting Officer to forward, as appropriate, to the regulatory unit which has jurisdiction.

Team Comments on Management Systems

The Identification Team was asked to address Conduct of Operations, Quality Assurance, Self-Assessment, and Maintenance Management. The Team agreed that, because of the burdensome nature of the current orders in these areas, these issues need to be addressed in a process such as the N&S Process. The Team discussed these issues at length. However, the Team did not reach consensus. The Team Leader offers this analysis. These subjects are considered as ES&H issues by some parts of DOE and as management issues in other parts of DOE--similarly, some DOE Laboratories treat these as management issues and some as ES&H issues. Clearly, these issues are management issues with significant ES&H impacts. It is apparent from the Team discussions that, as management issues, these would be resolved within each of the represented Laboratories in ways appropriate for their management styles. These issues do not easily lend themselves to standardization--"one-size-fits-all". It is suggested that the best way to resolve these issues is to let the management of the Agreement Parties find solutions with which they are comfortable. The Team Leader strongly suggests, as provided in the Pilot Charter, that the Convened Group, as representatives of the management of the Agreement Parties, address these important subjects.

Boundary Issue: Property Loss/Program Interruption due to Fire

The bottoms-up approach to worker safety and public protection utilized in this Pilot N&S Closure Process did not draw out the issue of property protection or program interruption due to fire. This issue has historically been integrated into an overall fire protection program, as formulated by DOE Order 5480.7A, which implements, in an ill-defined manner, the insurance industry methodology for Highly Protected Risk (HPR). The choice to implement a system to control property loss and program (business) interruption is a business management decision primarily based on financial considerations. It is the recommendation of the Identification Team that this issue be addressed through an independent N&S process. The process to address this issue would vary significantly from the extant Pilot in that the primary effort would be to develop a site-specific set of criteria and then to reach consensus on both the criteria and the application of those criteria to each facility or structure on a site-wide basis. Also included in the process should be the assignment of property loss liability for each of the stakeholders - URA, BAO, and ER. Lastly, it is envisioned that the loss control criteria would allow for a new facility classification of "conventional/commercial facility" for which the application of the local building code and NFPA standards is sufficient, be based on Maximum Credible Loss (instead of Maximum Possible Loss), and provide for the graded application of protective measures consistent with the mission.

Discussion of the N&S Process and Lessons Learned

The principal conclusion of the ID Team is that the N&S Process works well and as designed. The sequence of steps for the N&S Closure Process (prescribed by the DOE Standards Program) in the Charter for the Fermilab N&S Process and in the Charge to the Fermilab ID Team was faithfully followed. It was found to be an entirely satisfactory mechanism for getting the work done.

An important comment, though, is that one should realize that the role of the Process Leader is a critical and exacting one. The Process Leader's effective coordination of a complicated mix of working and advisory groups (the Convened Group, Extended Convened Group, Steering Committee, ID Team, Focus Groups, and Focus Group Leaders) is vital to the successful implementation of the N&S Process.

The following is a collection of assorted "lessons learned" from the implementation of the N&S Pilot Process at Fermilab; it is hoped that these remarks could be of value to organizations which are planning their own N&S Process in the future:

- Time and Hard Work: A successful N&S Process requires a lot of hard work by highly qualified and highly motivated people. In particular, the ID Team phase of the work required significantly more time and effort than had been anticipated by the Process Leader.
- <u>Careful Organization</u>: Careful organization of each step of the process, including faithful implementation of all of the prescribed formalities of the process, is very important. In the Fermilab Pilot Process, this organizational effort helped to prevent misunderstandings and contributed to assuring continued buy-in by all interested parties as the ID Team's work progressed. The efforts of the Process Leader to assure that all interested parties were kept informed about the progress of the process were most worthwhile.
- <u>Facilitator:</u> The participation of management consulting firm in the Fermilab N&S Process was helpful, especially in its role as a process facilitator at the outset of the ID Team's initial two week period of concentrated work in mid-May. The facilitator introduced several concepts (the use of flip charts, groundrules, specific goals, pre-determined breaks, role playing- devil's advocate, etc.) that proved to be very useful in keeping the Team and Focus Groups focused on the issues, the process and the final objective.

- <u>Standards vs. Implementation Plans</u>: One must keep in mind the differences between a standard and an implementation plan. Standards are more universal. Implementation plans are the site-specific methods used to ensure that one is in compliance with the standards. One does not want to adopt an implementation plan as a standard.
- OSH Issues: The scope of the work of the Occupational Safety and Health (OSH) Focus Group was too broad. Over 100 of the ES&H hazard issues identified by the workers at Fermilab were in the OSH area. The assessment of these issues by at least two separate Focus Groups would probably have been a more effective arrangement.
- Boundary Conditions: Thoughtful consideration by the Process Leader, throughout the duration of the ID Team Process, of "boundary conditions" is important. It is not always clear what is an ES&H issue or if one should include a closely related topic associated with a particular ES&H issue. Examples of this are property loss prevention in the fire safety area, or safeguards & security considerations in the emergency response area.

FERMILAB N/S STANDARDS PILOT ROLLED UP STANDARDS LIST DRAFT 7/12/95

Standards

Necessary
External sufficient
Internal sufficient
Emergency management
Environmental protection
Fire protection
Management & oversight
Occupational safety
Radiation protection

	Z	ш	=	Ш	Ш	ш	2	0	Œ	Η.
10 CFR 1021 (DOE NEPA rules)	X				Х					
10 CFR 1022 (Compliance with Floodplain/Wetlands environmental review requirements)	X				X				,	
10 CFR 1046 Subpt. B, App A, Chpt X, Paragraphs H through I inclusive. (Physical protection of security interests, protective force personnel)	Х			X						
10 CFR 835 (Occupational radiation protection - applicable and enforceable portions)	Х								X	
10 CFR 860 (Trespass to land owned & leased by the U.S. government.)	Х			X						
100 IAC (Fire prevention and safety)	X					X				
120 IAC (Boiler and pressure vessels)	X					X				
14 CFR 135 (Air taxi operators and commerical operators)	X							X		
14 CFR 830 (Notification and reportingaccidents and incidents)	X									X
14 CFR 91 (General operating and flight rules)	Х									X
140 IAC (Policy and procedures manual for fire protection personnel)	Х					X				
160 IAC (Storage, transportation, sale and use of gasoline and volatrile oils: rules relating to general storage)	Х					X				
17 IAC 525 and permit pursuant (Nuisance animal trapping permits)	X				Х					
170 IAC (Storage, transportation, sale and use of petroleum and other regulated substances)	х					X				
18 U.S. Code Sections 841-848 (Use, or threat of use, of explosives; includes civil disorders.)	X			X						
180 IAC (Storage, transportaition, sale and use of volatile oils	х					X			\neg	
				نــــا						

20 CT 26 C 1	ΙΥ		Τy		П		Т	_
28 CFR 36 Sections 4.1.3 (9) and 302(b)(2) (Americans with Disabilities Act - accomodations and accessibility)			l^					
29 CFR 1903.13 (Imminent danger)	Х				П	Х		Γ
29 CFR 1903.2 (Posting of notice)	Х					Х		T
29 CFR 1904 (Recordkeeping and reporting occupational injuries and illnesses)	Х					Х		
29 CFR 1910 (OSHA general industry standards - applicable and enforceable portions)	Х					Х		
29 CFR 1926 (OSHA construction industry standards - applicable and enforceable portions)	Х					Х		
29 CFR 1977.12 (Exercise of any right afforded by the Act)	X					Х		
29 CFR 1977.4 (Persons prohibited from discriminating)	X					Х		
29 IAC Chapter 1, Subchapter f (Emergency services, disasters, and civil defense /ESDA/ chemical safety)	х				X			
33 CFR 320-323, 328-330 (Army corp of engineers wetlands regs)	Х	T		X				
35 IAC (State of IL environmental regs - applicable and enforceable portions)	х			X				
36 CFR 60, 63, 65 (National historic landmark program)	Х	1		X				
36 CFR 78-79 (NHPA waiver and collection curation regs)	Х		1	X				
36 CFR 800 (Protection of historic and cultural properties)	Х	1		X				
40 CFR (Federal environmental regs - applicable and federally-enforceable portions)	х			X				
41 IAC (Fire protection)	Х	1			X			
43 CFR 7 (Archaeological collections)	X	7		X				
49 CFR 100-199 and references (Hazardous materials transportation)	Х							X
49 CFR 383.23 (Commercial drivers license)	X							Х
49 CFR 392.14 (Hazardous conditions; extreme caution)	X	丁						Х
49 CFR 393.95 (Emergency equipment on vehicles)	X						T	X
49 CFR 395 (Maximum driving and on-duty time)	х	十	1			1		X
49 CFR 397.11 (Fires)	х	\top	十	Г	П		Γ	Х
49 CFR 397.13 (Smoking)	х	十	1			1		X
	x	\dashv	┰	Н	\vdash	+	t	x

50 CFR 17 (Endangered species rules)	X		X				Τ
71 IAC (Illinois accessibility code, Subparts C-F)	X			Х		T	十
77 IAC 830 (Structural pest control code)	X		X			1	1
77 IAC 890 (Plumbing code)	X		X		П		T
77 IAC 900 (Drinking water systems requirements)	X		X		Ħ		T
77 IAC 920 (Water well construction code)	X		X		H		
77 IAC 925 (Well pump installation)	X		X		П	1	T
92 IAC 700 and all permits pursuant (Construction in water course permit application)	X		Х				
92 IAC 704 and all permits pursuant (Regulation of public waters)	X		X				
92 IAC 708 and all permits pursuant (Floodway construction permit application)	X		X				
ACGIH TLV for cold stress	Ī	X		П	1	X	
ACGIH TLV for hand-arm segmental vibration		X			7	X	T
ACGIH TLV for heat stress	Γ	X			7	X	T
ACGIH TLV for radiofrequency/microwave radiation	Γ	X			7	X	
ACGIH TLV for static magnetic fields		Х			1	X	
ACGIH TLV for ultraviolet radiation		X			7	X	
ANSI B11 series (Metalworking - applicable portions)		X			7	X	
ANSI B15.1 (Power transmission apparatus)		X			2	X	
ANSI O1.1 (Woodworking machinery)		X			7	X	T
ANSI Z136.1 (Lasers)		X			1	X	
ANSI/ASHRAE 15 (Mechanical refrigeration)		X			7	X	
ANSI/ASME B30.10 (Hooks)		X			7	X	T
ANSI/ASME B30.2 (Overhead and gantry cranes)		X]	X	
ANSI/ASME B30.20 (Below the hook lifting devices)		Х			7	X	
ANSI/ASME B30.5 (Mobile and locomotive truck cranes)	Γ	Х			1	X	T
ANSI/ASME B30.9 (Slings)	T	X			7	X	
ANSI/ASME B31.1 (Power piping)		Х				X	T
ANSI/ASME B31.3 (Chemical plant and petroleum refinery piping)		X			2	X	

ANSI/ASME B31.5 (Refrigeration piping)		X						X	
ANSI/ASME B31.8 (Gas transmission and piping systems)		X						X	1
Archaeological and Historic Preservation Act of 1974	X		-		X				十
Archaeological Resources Protection Act of 1979 [amended]	X	П			X		1		†
ASME Pressure Vessel Code - Section VIII	T	X						X	1
Atomic Energy Act	X								x
Batavia Code of Regulations, City Ordinance, Section 8-3-10-3	X	П			X				†
BOCA Fire Prevention Code	T	Х				X		1	1
BOCA National Building Code	T	X				Х		1	T
CERCLA/SARA 42 USC 6901 et seq.	X				X			1	
City Code of Warrenville, IL Title 7, Chapter 4, sewer/sewerage ordinance	X				X				1
Clean Air Act Amendments 1990, 42 USC 7401 et seq. and Illinois State Implementation Plan 40 CFR 52 Subpart O	Х				X				
Clean Water Act, 33 USC 1251 et seq.	X				X				
DOE Order 5400.5 Derived Concentration Guide Table and dose limits to the public (Chapter 2, section 1; Chapter 3)		Х			X				
DuPage County Health Department Private Water Supply Ordinance (OH-0002-90, Ch.34, DuPage County Code)	X				X				
E.O. 10988 (Floodplain management)	X	П			X				
E.O. 10990 (Protection of wetlands)	X	П			X				T
E.O. 12356 (National security information - security education)	X	П		X					T
E.O. 12580 (Implementation of superfund)	X				X				
E.O. 12843 (Procurement of ozone-depleting substances)	X				X				
E.O. 12856 (Federal compliance with EPCRA and PP)	Х	П			X				
E.O. 12873 (Recycling)	X				X			1	T
Endangered Species Act 16 USC 1531 et seq.	X				X			1	
EPA Air Quality Stds.	X	П	1		X			1	<u> </u>
Federal Facility Compliance Act	X	\prod	1		X		1		T
FEmP 35A (Personnel warning - severe weather)	Ī	П	X	X				1	T
FEmP 35B (Shelters - severe weather)		П	X	X		\Box		7	\top

FEmP 41 (Warning signals - severe weather)		x	X						
Fermilab ES&H Section SQIP RPS.8 (Control and accountability of nuclear materials)		X						X	
FESHM 2010 (Planning and review of facilities and their operations)		X				X			
FESHM 3050 (Occurrence reporting)		Х	r	T		X			
FESHM 5031 (Pressure vessels)		X					X		
FESHM 5031.1 (Pressure piping systems)		Х					X	П	
FESHM 5032 (Cryogenic system review)		Х		T			X		
FESHM 5032.1 (Liguid nitrogen dewar installation rules)		X	Γ				X		
FESHM 5032.2 (Guidelines For the Design, Fabrication, Testing, Installation, and Operation of LH2 Targets)		Х					X		
FESHM 5032.3 (Transporting gases in building elevators)		Х					X		
FESHM 5033 (Vacuum vessel safety)		X					X		
FESHM 5035 (Mechanical refrigeration systems)		x					X		
FESHM 5040 (Fermilab electrical safety program)		X		T			X		
FESHM 5041 (Electrical utilization equipment safety)		X					X		
FESHM 5042 (AC electrical power distribution safety)		X					X		
FESHM 5043 (Management and use of cable tray systems)		X			X				
FESHM 5044 (Protection against exposed electrical bus)		Х	Г				X		
FESHM 5046 (Low voltage, high current power distribution systems)		Х	Γ		X			1	
FESHM 5064 (Oxygen deficiency hazards)		Х					X	7	
FESHM 5084 (Ergonomic protection)		Х					X	1	
FESHM 6020.3 (Installation of flammable gas lines in or near cable trays)		Х			X				
FESHM 9020 (Hazardous materials transportation - packaging)		Х						1	Χ
FIFRA (7 USC 136 et seq.)	X			X				\top	
FRCM Article 349 (Controls for radioactive liquids and gases typically found at Fermilab)		Х						X	
FRCM Article 365 (Radiation generating devices)		x					\exists	X	_
FRCM Article 411 (Radioactive material identification, storage and control - requirements)		Х						X	

FRCM Chapter 4 Part 3 (Radioactive source controls)			X					X	Γ
Handbook for Sampling & Sample Preservation of Water and Wastewater, EPA-600/4-82-029		X			X				
Illinois Chemical Safety Act (as ammended by P.A. 85-1325, effective August 31, 1988)	Х			Х					
Illinois Compiled Statutes (ICS) Chapter 625 (State vehicle code)	X								X
Illinois Department of Public Health, DuPage County Dept. Public Health. CDC December 7,1990		X					X		
Illinois Endangered Species Protection Act, IRS 1991, Ch. 8, par. 331 et seq.	х				X				
Illinois Ground Water Protection Act, IRS 1989 Chapter 111 1/2	X			Г	X				Γ
Illinois Health and Safety Act	X			Г		X			Γ
Illinois Pesticide Act, IRS Ch. 5, para. 801 et seq.; 45 IL. CS 60-1	X	Γ			X				
Illinois Public Act 84-852, Illinois Chemical Safety Act	X					X			
Kane County Health Department Ordinance 91-101 Water Well Code	X				X				
National Fire Protection Association National Fire Codes (NFPA Standards - applicable portions)		Х		X		X			
National Historic Preservation Act of 1966 [amended]	X				X				
Native American Graves Protection and Repatriation Act of 1990	Х				X				
NEPA 42 USC 4321 et seq.	X				X				
OSH Act, paragraph 5(a)(1) (General duty clause)	X						X	į	
Privacy Act of 1974	X							X	
RCRA Part B Permit (Illinois Log #131), including Emergency Contingency plan	X				X				
RCRA, 42 USC 6901 et seq.	X				X				
Recommended Standards for Water Works, Great Lakes Upper Mississippi R. Bd. of State Public Health & Environmental Managers (1992)		Х			X				
Safe Drinking Water Act, 42 USC Section 300f.	X				X				
SDWA, 42 USC 300f et seq.	X				X				
SFAR 62 (Suspension of certain aircraft operations from the transponder)	X								X

Standard Methods for the Examination of Water and Wastewater, 18th Ed., APHA (1992)		X		X			
Standards and Specifications for Soil Erosion and Sediment Control, 10/87, IEPA 87-102		X		X			Ī
Structural Pesticide Act, IRS Ch. 111 1/2, para. 2201 - 2225	X			X		1	T
Title 5 U.S.Code 4103 (Training - for security personnel)	X		X	r		T	T
TSCA, 15 USC 2601 et seq.	X			X	П	1	T
UL Listing	T	X	T	T	X	T	T
Uniform Federal Accessibility Standards, Chapter 4, Accessible Elements and Spaces: Scope and Technical Requirements	Х				Х		T
WHC-EP-0063 Rev (or equivalent for other states that might accept FNAL wastes)	X					х	

Report on the Fermilab Pilot N&S Closure Process Participants in Confirmation

James Boyce, Identification Team

Jon Cooper, Identification Team

Don Cossairt, Identification Team

Larry Coulson, Process Leader

Michael Flannigan, Subject Matter Expert for CH

Dave Gassman, Subject Matter Expert (Legal)

Dave Goodwin, Convened Group

David Gordon, Identification Team

Steve Gray, Confirmation Panel

Nancy Grossman, Identification Team

Beverly Hartline, Confirmation Panel

Kenneth Kase, Confirmation Panel

Cherri Langenfeld, Extended Convened Group

Rod McCullum, Technical Advisior to Convened Group

Tomas McDermott, Identification Team

David McGraw, Confirmation Panel

Tim Miller, Identification Team

Andrew Mravca, Convened Group

Steve Musolino, Identification Team

Paul Neeson, Identification Team

Kim O'Malley, Facilitator

Lincoln Read, Identification Team

Mary Hall Ross, Identification Team

Ken Stanfield, Extended Convened Group

Ray Stefanski, Convened Group

Tim Tess, Identification Team

Rod Walton, Identification Team

Bob Wynveen, Confirmation Panel

Necessary and Sufficient Set Approval Documents



Director's Office

July 13, 1995

To:

Convened Group Members

From:

Larry Coulson, Process Leader

Subject:

Confirmation and Approval of the N&S Set

This memo documents the confirmation of the ES&H N&S SET contained in the Fermilab Pilot Necessary and Sufficient Identification Team Document, signed and submitted to the Convened Group on July 12, 1995 (Attachment 1), which was challenged at our meeting on July 12, 1995. In accordance with The Department of Energy Closure Process for Necessary and Sufficient Sets of Standards (February 24, 1995), the Convened Group verified:

- The information available to and used by the Identification Team was found satisfactory.
- The Convened Group and the Peer Review Panel confirmed that the set of standards is necessary and sufficient to satisfy the performance expectations and objectives of the work.
- Implementation of the set of standards should be feasible.

Three issue sheets were collected during the confirmation process. All three have been resolved to the satisfaction of those who raised the issue. I am maintaining documentation of the issues and their satisfactory resolution. They have resulted in some minor modification to the SET. A revised, and final SET is attached (Attachment 2).

The two issues discussed in the Team report have also been resolved as follows:

- 1. Property protection: The contract will continue to use DOE Order 5480.7 for property protection purposes only. The Convened Group will apply the N&S process at a later date to the property protection issue.
- Management Systems: The Convened Group decided to remove the referenced Management Systems orders and replace them with special requirements in the contract. The DOE/URA contract modification will require that FNAL continue to maintain management systems that ensure that the agreed-upon standards are implemented.

The Identification Team followed all applicable protocols and documentation requirements, therefore, I request that you indicate approval to proceed with this process by recommending to the Agreement Parties that they approve the N&S SET as attached to this memo.

Ray Stefanski	Date
Dave Goodwin	Date
Andy Mravca	Date



Fermi National Accelerator Laboratory P.O.Box 500 • Batavia, II. • 60510-0500 708-840-3211 Fax: 708-840-2939

Director's Office

July 14, 1995

Dr. Fred Bernthal, President, URA 1111 19th Street, NW, Suite, 430 Washington, D.C. 20036

Dr. John R. O'Fallon, Director High Energy Physics Division, U.S. DOE 19901 Germantown Road Germantown, MD 20874

Mr. Andrew E. Mravca, Manager Batavia Area Office, U.S. DOE P.O. Box 2000 Batavia, IL 60510

Dear Dr. Bernthal, Dr. O'Fallon, and Mr. Mravca:

Subject:

Fermilab Pilot on the Closure Process--Necessary and Sufficient ES&H Standards Set Approval

Attached is documentation of the sucessful conclusion of the Fermilab Pilot for the Department of Energy Closure Process for Necessary and Sufficient Sets of Standards. The pilot has sucessfully produced a confirmed set of ES&H standards which fully meets the requirements of the process. Therefore, we recommend that you indicate approval of the attached set by signing below.

Responsible Organization -	<u> </u>	
,	Fred Bernthal, President	Date
	Universities Research Association	
Resource Authority -	·	
J	John R. O'Fallon, Director	Date
	High Energy Physics Division	
	Office of Energy Research	
Customer Organization -		
o o	Andrew Mravca, Manager	Date
	DOE Batavia Area Office	

Yours truly,

Larry Coulson, Process Leader for the

Convened Group:

Larry Coulson Ray Stefanski Dave Goodwin Andy Mravca

Contract Modification Documents July 14, 1995

Modification No. M201 Supplemental Agreement to Contract No. DE-AC02-76CH03000

THIS SUPPLEMENTAL AGREEMENT is effective the 14th day of July, 1995, between the UNITED STATES OF AMERICA (hereinafter referred to as the "Government"), acting through the U.S. DEPARTMENT OF ENERGY (hereinafter referred to as "DOE"), and the UNIVERSITIES RESEARCH ASSOCIATION, INC. (hereinafter referred to as the "Association" or "Contractor"), a corporation organized and existing pursuant to the District of Columbia Non-Profit Corporation Act.

RECITALS

The Parties have conducted a Pilot of the Department of Energy's "Closure Process for Necessary & Sufficient Sets of Standards" (draft 2/24/95). The result of this pilot is a set of standards (the Set) which the Parties agree will provide an adequate level of protection of the environment, and of the health and safety of workers and the public, for activities under the contract.

The Set has been approved by the Agreement Parties in accordance with the "Charter for the Department of Energy /Fermilab Standards Closure Process", dated 3/31/95. The Parties have agreed to modify the contract to incorporate the Set, to replace existing DOE environmental protection, safety and health (ES&H) Orders. The modification will revise and/or delete certain articles of this contract, and add two Appendices: Appendix H which contains the Set of ES&H Standards applicable to Fermilab, and Appendix I, which contains a list of those DOE Orders which are currently applicable to Fermilab, modified to reflect agreement on the Set.

AGREEMENT

NOW, THEREFORE, the parties hereto mutually agree that Contract No. DE-AC02-76CH03000, as amended, is hereby further amended as follows:

1. Article 27. SAFETY AND HEALTH is deleted and a new Article 27 is added as follows:

"ARTICLE 27. ENVIRONMENTAL PROTECTION, SAFETY AND HEALTH (SPECIAL)

- (a) The Contractor shall take all reasonable precautions in the performance of the work under this contract to protect the environment, the safety and health of employees, and the safety and health of members of the public.
- (b) The Contractor shall:
 - (1) Comply with the environmental protection, safety and health standards identified in the Necessary and Sufficient Set ('the Set') contained in Appendix H to this contract, initially identified and approved in accordance with the 'Charter for the Department of Energy/Fermilab Standards Closure Process' ("Charter") dated

3/31/95, including Attachment A thereto: draft 'Department of Energy Closure Process for Necessary and Sufficient Sets of Standards,' dated 2/24/95). The Set is in lieu of DOE ES&H directives which otherwise would be applicable to performance of this contract under Article 105. DOE ORDERS.

- (2) Identify and inform the Contracting Officer, in writing, of any inconsistencies among these standards which would affect or preclude the Contractor's ability to perform its work, and bring such inconsistencies to the attention of the Contracting Officer;
- (3) Continue to maintain management systems that ensure that the agreed-upon standards are implemented.
- (4) Implement internal environmental protection and safety and health performance evaluation and corrective action systems to provide Laboratory management with a continuing assessment of the adequacy and implementation of these management systems and a mechanism for assuring that deficiencies are corrected. The results of such evaluations shall be made available to DOE.
- (c) The Parties shall endeavor to keep apprised of changes to standards in the Set. Subject to paragraphs (b)(2) and (f) of this Article, changes to any standard in the Set shall be addressed as follows:
 - (1) If the standard is a requirement applicable by law, the changed standard shall supersede the standard in the Set and become the new standard, effective immediately.
 - (2) If the standard is not required by law, the Contractor may substitute the changed standard, including a modification of an internal standard, with notice to the Contracting Officer if the change does not affect the level of protection. If the change in the standard does affect the level of protection, the change requires the approval of the Contracting Officer.
 - (3) The Contracting Officer may direct (i) substitution of a changed standard or (ii) modification of an internal standard, unless, within 30 days from receipt of notification of the change from the Contracting Officer, the Contractor submits the matter to the Agreement Parties for a decision. If the Agreement Parties determine that the modified standard is necessary, the Contractor shall take all appropriate measures to comply with the change in the standard.

- (d) The Parties shall review and revalidate the Set periodically. The Necessary and Sufficient closure process may be re-initiated by any Agreement Party upon a determination that the existing set is no longer appropriate due to changes in mission, activity, degree of hazard, performance expectation, or knowledge. Approval of any revised Set shall be by the Agreement Parties, and Appendix H will be revised accordingly (whether or not by formal modification to this contract).
- (e) The Contractor and Contracting Officer shall identify and, if appropriate, agree to, any changes to contract terms and conditions, including cost and schedule, associated with a change to the Set or to a standard in the Set.
- (f) The Contractor may at any time seek an exception, exemption, waiver, or variance from, or propose an equivalent alternative to, all or part of any standard in the Set, and with respect to all or part of the activities under this contract, by submitting a request to the Contracting Officer. The Contracting Officer shall be responsible for taking any necessary and appropriate action to seek relief from any standard which is required by law.
- (g) In the event that the Contractor determines it is not in compliance with, or cannot comply with, any standard in the Set, the Contractor shall notify, in writing, the Contracting Officer of such actual or anticipated noncompliance and shall propose the corrective action to be taken. After receipt of authorization from the Contracting Officer, the Contractor shall, within a reasonable time agreed upon by the parties, take the agreed upon corrective action.
- (h) The Contractor shall include in all of its subcontracts involving performance of work at the site, provisions requiring subcontractors to comply with the Contractor's environment, safety and health standards. However, such provisions in the subcontracts shall not relieve the Contractor of its obligation to assure compliance with the provisions of this clause for all aspects of the work.
- (i) If at any time during the performance of the contract work, the Contractor's acts or failure to act may cause substantial harm or an imminent danger to public or worker safety or health, or to the environment, or the Contractor fails to take the corrective action approved in accordance with paragraph (g) above, the Contracting Officer may, without prejudice to any other legal or contractual rights of DOE, issue an order stopping all or any part of the work; thereafter, a start order for resumption of the work may be

issued at the discretion of the Contracting Officer. The Contractor shall make no claim for an extension of time or adjustment of its management allowance or damages by reason of, or in connection with, such work stoppage.

- (j) For purposes of this Article, the term 'Agreement Parties' means the President, Universities Research Association, Inc.; the Director, High Energy Physics Division, Office of Energy Research DOE; and the Manager, DOE Batavia Area Office."
- 2. Article 29. PRESERVATION OF INDIVIDUAL OCCUPATIONAL RADIATION EXPOSURE RECORDS is deleted in its entirety.
- 3. Article 44. PERMITS OR LICENSES is revised in its entirety to read as follows:

"ARTICLE 44. DEAR 970.5204-29 PERMITS OR LICENSES (DEVIATION)

- (a) In addition to its obligations under Article 27. ENVIRONMENTAL PROTECTION, SAFETY, AND HEALTH, and Article 105. DOE ORDERS, the Contractor shall, unless otherwise directed by the Contracting Officer, abide by all applicable laws, codes, ordinances and regulations of the United States, states or territories, municipalities, or political subdivisions which are applicable to the work under this contract.
- (b) The Contractor's obligations include, but are not limited to, the identification of required permits and licenses, the compilation of information and data required for applications for permits and licenses, and the provision of any supplemental information required by law, code, ordinance, or regulation as requested by the regulatory authority involved. The Contracting Officer shall promptly inform the Contractor of any required permit or license of which DOE is aware or becomes aware.
- (c) The Parties commit to full cooperation with regard to acquiring any necessary permits or licenses required by environmental laws, codes, ordinances, and regulations of the United States, states or territories, municipalities or other political subdivisions, and which are applicable to the performance of work under this contract. It is recognized that certain environmental permits will be obtained jointly and others will be obtained by either party in its individual capacity.
- (d) The Contractor, unless otherwise directed by the Contracting Officer, shall procure all necessary non-environmental permits or licenses."
- 4. Article 94. ENVIRONMENTAL PROTECTION, is deleted in its entirety.

5. Article 105. DOE ORDERS is revised to read as follows:

"ARTICLE 105. DOE ORDERS (SPECIAL)

Appendix I is a list of all DOE Orders which are applicable to this contract, as of July 14, 1995. Any Order distributed prior to this date, which is not contained in the list or is not otherwise directly incorporated into the specific terms of this contract shall be deemed inapplicable.

The Association understands that, from time to time, the DOE will issue additional or revised DOE Orders that are intended to apply certain DOE policies or procedures to management and operating contracts. Normally, such Orders or revisions are issued initially in draft form for comment by DOE field offices, and in such instances, the Contracting Officer will use his best efforts to elicit the Association's comment(s) on the draft. When a final DOE Order is issued, the Contracting Officer shall transmit to the Association a copy of the Order along with a written determination that the Order should be applied under this contract. The Association will be given an opportunity to state reasons why the Order either should not be applied, or whether it should be modified in its application under this contract.

If thereafter directed by the Contracting Officer to follow the Order, said direction shall be deemed a modification of Appendix I. The Association agrees to use its best efforts to implement the Order to the extent that the Order is not inconsistent with provisions of this contract. The Association shall promptly provide the Contracting Officer with a compliance action plan, including costs and schedule."

6. Appendices H and I, attached hereto and made a part hereof, are hereby incorporated into this Contract.

IN WITNESS WHEREOF, the parties hereby execute this document.

,	1	
UNITED STATES OF AMERIC	CA UNIVERSITIES RESEAR	RCH ASSOCIATION, INC
Ву:	By:	
(Title)		(Title)
(Date)		(Date)

36 CFR 800 (Protection of historic and cultural properties)

FERMILAB N/S SET OF ES&H STANDARDS JULY 14, 1995

JULY 14, 1995
10 CFR 1021 (DOE NEPA rules)
10 CFR 1022 (Compliance with Floodplain/Wetlands environmental review requirements)
10 CFR 1046 Subpt. B, App A, Chpt X, Paragraphs H through I inclusive. (Physical protection of security interests, protective force personnel)
10 CFR 835 (Occupational radiation protection - applicable and enforceable portions)
10 CFR 860 (Trespass to land owned & leased by the U.S. government.)
100 IAC (Fire prevention and safety)
120 IAC (Boiler and pressure vessels)
14 CFR 135 (Air taxi operators and commerical operators)
14 CFR 830 (Notification and reportingaccidents and incidents)
14 CFR 91 (General operating and flight rules)
140 IAC (Policy and procedures manual for fire protection personnel)
160 IAC (Storage, transportation, sale and use of gasoline and volatrile oils: rules relating to general storage)
17 IAC 525 and permit pursuant (Nuisance animal trapping permits)
170 IAC (Storage, transportation, sale and use of petroleum and other regulated substances)
18 U.S. Code Sections 841-848 (Use, or threat of use, of explosives; includes civil disorders.)
180 IAC (Storage, transportaition, sale and use of volatile oils
28 CFR 36 Sections 4.1.3 (9) and 302(b)(2) (Americans with Disabilities Act - accomodations and accessiblity)
29 CFR 1903.13 (Imminent danger)
29 CFR 1903.2 (Posting of notice)
29 CFR 1904 (Recordkeeping and reporting occupational injuries and illnesses)
29 CFR 1910 (OSHA general industry standards - applicable and enforceable portions)
29 CFR 1926 (OSHA construction industry standards - applicable and enforceable portions)
29 CFR 1928 Subpart C (Roll-over protective structures - applicable and enforceable portions)
29 CFR 1928 Subpart D (Safety for agricultural equipment - applicable and enforceable portions)
29 CFR 1977.12 (Exercise of any right afforded by the Act)
29 CFR 1977.4 (Persons prohibited from discriminating)
29 IAC Chapter 1, Subchapter f (Emergency services, disasters, and civil defense /ESDA/ chemical safety)
33 CFR 320-323, 328-330 (Army corp of engineers wetlands regs)
35 IAC (State of IL environmental regs - applicable and enforceable portions)
36 CFR 60, 63, 65 (National historic landmark program)
36 CFR 78-79 (NHPA waiver and collection curation regs)

40 CFR (Federal environmental regs - applicable and federally-enforceable portions)
41 IAC (Fire protection)
43 CFR 7 (Archaeological collections)
49 CFR 100-199 and references (Hazardous materials transportation - offsite)
49 CFR 173.24(e)(1-2) (Chemical compatibility for single packagings - onsite)
49 CFR 173.24(e)(4)(i-111) (Chemical compatibility for multiple packagings - onsite)
49 CFR 173.24a (a)(1) (Positioning of inner receptacles - onsite)
49 CFR 173.24a (a)(3-4) (Packing for inner receptacles - onsite)
49 CFR 177.848C (Segregation table for hazardous materials - onsite)
49 CFR 178.500L Subchapter C (Segregation table for hazardous materials - onsite)
49 CFR 383.23 (Commercial drivers license - offsite and onsite)
49 CFR 392.14 (Hazardous conditions; extreme caution - offsite and onsite)
49 CFR 393.95 (Emergency equipment on vehicles - offsite and onsite)
49 CFR 395.3 (Maximum driving and on-duty time - offsite and onsite)
49 CFR 397.11 (Fires - offsite and onsite)
49 CFR 397.13 (Smoking - offsite and onsite)
49 CFR 397.15 (Fueling - offsite and onsite)
50 CFR 17 (Endangered species rules)
71 IAC (Illinois accessibility code, Subparts C-F)
77 IAC 830 (Structural pest control code)
77 IAC 890 (Plumbing code)
77 IAC 900 (Drinking water systems requirements)
77 IAC 920 (Water well construction code)
77 IAC 925 (Well pump installation)
92 IAC 700 and all permits pursuant (Construction in water course permit application)
92 IAC 704 and all permits pursuant (Regulation of public waters)
92 IAC 708 and all permits pursuant (Floodway construction permit application)
ACGIH TLV for cold stress
ACGIH TLV for hand-arm segmental vibration
ACGIH TLV for heat stress
ACGIH TLV for radiofrequency/microwave radiation
ACGIH TLV for static magnetic fields
ACGIH TLV for ultraviolet radiation
ANSI B11 series (Metalworking - applicable portions)

E.O. 12856 (Federal compliance with EPCRA and PP)

E.O. 12873 (Recycling)

ANSI B15.1 (Power transmission apparatus) ANSI O1.1 (Woodworking machinery) ANSI Z136.1 (Lasers) ANSI/ASHRAE 15 (Mechanical refrigeration) ANSI/ASME B30.10 (Hooks) ANSI/ASME B30.2 (Overhead and gantry cranes) ANSI/ASME B30.20 (Below the hook lifting devices) ANSI/ASME B30.5 (Mobile and locomotive truck cranes) ANSI/ASME B30.9 (Slings) ANSI/ASME B31.1 (Power piping) ANSI/ASME B31.3 (Chemical plant and petroleum refinery piping) ANSI/ASME B31.5 (Refrigeration piping) ANSI/ASME B31.8 (Gas transmission and piping systems) Archaeological and Historic Preservation Act of 1974 Archaeological Resources Protection Act of 1979 [amended] ASME Pressure Vessel Code - Section VIII Atomic Energy Act Batavia Code of Regulations, City Ordinance, Section 8-3-10-3 **BOCA Fire Prevention Code BOCA National Building Code** CERCLA/SARA 42 USC 6901 et seq. City Code of Warrenville, IL Title 7, Chapter 4, sewer/sewerage ordinance Clean Air Act Amendments 1990, 42 USC 7401 et seq. and Illinois State Implementation Plan 40 CFR 52 Subpart O Clean Water Act, 33 USC 1251 et seq. DOE Order 5400.5 Derived Concentration Guide Table and dose limits to the public (Chapter 2, section 1; Chapter DuPage County Health Department Private Water Supply Ordinance (OH-0002-90, Ch.34, DuPage County Code) E.O. 10988 (Floodplain management) E.O. 10990 (Protection of wetlands) E.O. 12356 (National security information - security education) E.O. 12580 (Implementation of superfund) E.O. 12843 (Procurement of ozone-depleting substances)

Endangered Species Act 16 USC 1531 et seq. EPA Air Quality Stds. Federal Facility Compliance Act FEmP 35A (Personnel warning - severe weather) FEmP 35B (Shelters - severe weather) FEmP 41 (Warning signals - severe weather) Fermilab ES&H Section SQIP RPS.8 (Control and accountability of nuclear materials) FESHM 2010 (Planning and review of facilities and their operations) FESHM 3050 (Occurrence reporting) FESHM 5031 (Pressure vessels) FESHM 5031.1 (Pressure piping systems) FESHM 5032 (Cryogenic system review) FESHM 5032.1 (Liguid nitrogen dewar installation rules) FESHM 5032.2 (Guidelines For the Design, Fabrication, Testing, Installation, and Operation of LH2 Targets) FESHM 5032.3 (Transporting gases in building elevators) FESHM 5033 (Vacuum vessel safety) FESHM 5035 (Mechanical refrigeration systems) FESHM 5040 (Fermilab electrical safety program) FESHM 5041 (Electrical utilization equipment safety) FESHM 5042 (AC electrical power distribution safety) FESHM 5043 (Management and use of cable tray systems) FESHM 5044 (Protection against exposed electrical bus) FESHM 5046 (Low voltage, high current power distribution systems) FESHM 5064 (Oxygen deficiency hazards) FESHM 5084 (Ergonomic protection) FESHM 6020.3 (Installation of flammable gas lines in or near cable trays) FIFRA (7 USC 136 et seq.) FRCM Article 349 (Controls for radioactive liquids and gases typically found at Fermilab) FRCM Article 365 (Radiation generating devices) FRCM Article 411 (Radioactive material identification, storage and control - requirements) FRCM Chapter 4 Part 3 (Radioactive source controls) Handbook for Sampling & Sample Preservation of Water and Wastewater, EPA-600/4-82-029 Illinois Chemical Safety Act (as ammended by P.A. 85-1325, effective August 31, 1988)

Illinois Compiled Statutes (ICS) Chapter 625 (State vehicle code)

Illinois Department of Public Health, DuPage County Dept. Public Health. CDC December 7,1990

Illinois Endangered Species Protection Act, IRS 1991, Ch. 8, par. 331 et seq.

Illinois Ground Water Protection Act, IRS 1989 Chapter 111 1/2

Illinois Health and Safety Act

Illinois Pesticide Act, IRS Ch. 5, para. 801 et seq.; 45 IL. CS 60-1

Illinois Public Act 84-852, Illinois Chemical Safety Act

Kane County Health Department Ordinance 91-101 Water Well Code

National Fire Protection Association National Fire Codes (NFPA Standards - applicable portions)

National Historic Preservation Act of 1966 [amended]

Native American Graves Protection and Repatriation Act of 1990

NEPA 42 USC 4321 et seq.

OSH Act, paragraph 5(a)(1) (General duty clause)

Privacy Act of 1974

RCRA Part B Permit (Illinois Log #131), including Emergency Contingency plan

RCRA, 42 USC 6901 et seq.

Recommended Standards for Water Works, Great Lakes Upper Mississippi R. Bd. of State Public Health & Environmental Managers (1992)

Safe Drinking Water Act, 42 USC Section 300f.

SDWA, 42 USC 300f et seq.

SFAR 62 (Suspension of certain aircraft operations from the transponder...)

Standard Methods for the Examination of Water and Wastewater, 18th Ed., APHA (1992)

Standards and Specifications for Soil Erosion and Sediment Control, 10/87, IEPA 87-102

Structural Pesticide Act, IRS Ch. 111 1/2, para. 2201 - 2225

Title 5 U.S.Code 4103 (Training - for security personnel)

TSCA, 15 USC 2601 et seq.

UL Listing

Uniform Federal Accessibility Standards, Chapter 4, Accessible Elements and Spaces: Scope and Technical Requirements

WHC-EP-0063 Rev (or equivalent for other states that might accept FNAL wastes)

Rather than attempt a precise analysis of all necessary standard citations to exclude non-applicable parts, inclusive citations were made qualified by the phrase "applicable and enforceable parts thereof."

To the extent these standards apply to DOE and not the contractor, the contractor will assist DOE in complying with them.

This Set does not change any existing Federal, State or local enforcement authority.

All references contained herein shall be the version in effect on July 14,1995.

DOE ORDERS AND SECRETARY OF ENERGY NOTICES (SENS) APPLICABLE FOR IMPLEMENTATION UNDER CONTRACT NO. DE-AC02-76CH03000

July 13, 1995

-- New Additions or Changes in Italics

ORDERS	DATES	TITLE
1000.3B	7/05/88	Internal Control Systems
1300.2A	5/19/92	Department of Energy Technical Standards Program
1300.3	8/23/90	Policy on the Protection of Human Subjects
1322.2C	10/22/91	Forms Management
1324.5B	1/12/95	Records Management Program
1330.1D	5/18/92	Computer Software Management
1332.1A Chg. 1	10/15/85 6/12/92	Uniform Reporting System
1340.1B	1/07/93	Management of Public Communications Publications & Scientific, Technical & Engineering Publications
1350.1 Chg. 1	10/28/81 3/26/84	Audiovisual and Exhibits Management
1360.1B	1/07/93	Acquisition and Management of Computing Resources
1360.2B	5/18/92	Unclassified Computer Security Program
1360.3C	10/19/92	Information Technology Standards
1360.6A	11/12/92	Automatic Data Processing Equipment/Data Systems
1360.8A	5/18/92	Analyses of Benefits and Costs for Information Technology Resource Initiatives
1430.1D	6/30/94	Scientific and Technical Information Management
1430.4A	5/18/92	Library Services
1450.3A Chg. 1	9/12/91 4/09/92	Call Control/ Verification Programs and Authorized Use of Government Telephone Systems

ORDERS	DATES	TITLE
1500.3 Chg. 4 Chg. 5 Chg. 6 Chg. 7	11/10/86 3/30/89 5/18/90 2/28/92 7/06/94	Foreign Travel Authorization
1800.1A Chg.1	8/31/84 5/18/92	Privacy Act
2030.4B	5/18/92	Reporting Fraud, Waste, and Abuse to the Office of the Inspector General
2100.8A	1/27/93	Cost Accounting, Cost Recovery, & Interagency Sharing of Information Technology Facilities
2110.1A Chg. 2	7/14/88 5/18/92	Pricing of Departmental Materials & Services
2200.4 Chg. 1	3/31/88 6/08/92	Accounting Overview
2200.6A Chg. 1 Chg. 2	1/07/93 4/13/93 6/13/94	Financial Accounting
2200.7	5/02/88	Cost Accounting
2200.8B	6/08/92	Accounting Systems, Organizations, & Reporting
2200.9B Chg. 1 Chg. 2	6/08/92 11/12/92 1/12/93	Miscellaneous Accounting
2200.10A Chg. 1 Chg. 2 Chg. 3 Chg. 4 Chg. 5	8/09/89 2/27/90 10/17/90 1/15/92 6/08/92 3/10/93	Accounts, Codes, and Illustrative Entries
2300.1B	6/08/92	Audit Resolution and Followup
2320.1C	5/18/92	Cooperation with the Office of Inspector General
2320.2A Chg. 1 Chg. 2	7/19/88 8/28/89 3/28/90	Establishment of Departmental Position on Inspector General Reports

ORDERS	DATES	TITLE
3220.1A	5/14/92	Management of Contractor Personnel Policies and Programs
3220.2A	5/14/92	Equal Opportunity in Operating & Onsite Service Contractor Facilities
3220.4 Chg. 1	6/04/85 6/28/90	Contractor Personnel and Industrial Relations Reports
3220.6A	5/14/92	Federal Labor Standards
3830.1	8/23/82	Policies and Procedures for Pension Programs Under Operating & Onsite Service Contracts
3890.1	6/07/85	Contractor Insurance and Other Health Benefits Programs
4220.5	12/19/91	Dependent Care Programs for Department of Energy Management & Operating Contractors
4300.1C Chg. 1	6/28/92 6/13/94	Real Property Management
4300.2B Chg. 1 Chg. 2	7/16/91 7/29/91 2/07/92	Non-Department of Energy Funded Work (Work for Others)
4320.1B Chg. 1	1/7/91 3/26/92	Site Development Planning
4320.2A	2/10/94	Capital Asset Management Process
4330.2D	5/18/92	In-House Energy Management
4540.1C	6/08/92	Utility Acquisition and Management
4700.1 Chg. 1	3/06/87 6/02/92	*** Project Management System
4700.3 Chg. 1	9/16/91 11/16/92	General Plant Projects
5100.3	8/23/84	Field Budget Process
5100.4	10/31/84	Internal Review Budget Process
5100.5	7/21/83	Office of Management and Budget Process
5300.1C	6/12/92	Telecommunications

ORDERS	DATES	TITLE
5400.5 Chg. 1 Chg. 2	2/08/90 6/05/90 1/07/93	Radiation Protection of the Public and the Environment (Only Chapter 2, Section 1; and Chapter 3, as stated in the N & S set)
5480.7A	2/17/93	Fire Protection (For Property Protection Only)
5630.11B	8/02/94	Safeguards and Security Program
5630.12A	6/23/92	Safeguards and Security Inspection and Assessment Program
5630.14	11/16/88	Safeguards and Security Program Planning
5630.16A	6/03/93	Safeguards and Security Acceptance and Validation Testing Program
5631.5 Chg. 1	2/12/88 7/02/90	Violation of Laws, Losses, and Incidents of Security Concerns
5632.7A	4/13/94	Protective Force Program
5632.10	1/12/90	Safeguards and Security Equipment Standardization
5700.2D	6/12/92	Cost Estimating, Analysis, and Standardization
5700.7C	5/18/92	Work Authorization System
5800.1A	5/18/92	Research & Development Laboratory Technology Transfer Program
6430.1A	4/06/89	General Design Criteria

*** Reference Letter from Mravca to Chrisman dated June 3, 1993 granting exceptions to implementation of Orders. Orders to be appropriately applied by the contractor.

SECRETARY OF ENERGY NOTICES

SEN	DATE	TITLE
22	5/08/90	DOE Policy on Signatures of RCRA Permit Applications
25A	10/02/91	Strategic Planning Initiative
30A	12/07/92	Staying the Course for Technology Transfer at the Department of Energy

THE FERMILAB N&S PROCESS AND MANAGEMENT SYSTEMS 8/8/95

The DOE/URA contract was modified on July 14, 1995, as a result of the N&S Pilot. The contract modification replaced the existing list of applicable ES&H DOE Orders with a modified list of applicable orders and the "N&S" list of Standards. Questions have been asked why the new contract no longer contains the orders for Quality Assurance, Conduct of Operations, Self-Assessment, and Maintenance Management.

The Pilot was exercised in full faithful accord with The Department of Energy Closure Process for Necessary and Sufficient Sets of Standards. Process Element 4 of that document, after [7], states: "NOTE: No justification or documentation is required for applicable non-regulatory standards that are NOT selected (for example, DOE Orders, manuals, and technical standards, and industry consensus standards)."

The referenced orders are management orders which have historically been associated with the ES&H activities of laboratories. Enforcement, auditing for compliance, and corrective action plans are all linked to the DOE ES&H oversight machinery. These orders are also an important consideration because as management orders they impact the implementation of the N&S set.

The Identification Team of the Pilot was asked by the Convened Group to address these management systems and make recommendations to the Convened Group. However, the Team, could not reach consensus on the best management systems to use as "standards". Each member of the team had a view of management that reflected the management of their home institution. Management systems do not lend themselves to prescription, but must be tailored to fit each institution. Therefore, the Process Leader referred these issues back to the Convened Group—who as representatives of the agreement parties should decide upon appropriate management requirements. The Convened Group discussed these issues with the Identification Team and the Confirmation Panel. It was noted that QA for ES&H is addressed explicitly in many of the selected standards—e.g. CFR 835.102, ASME Pressure Vessel Code, and the Handbook for Sampling & Sample Preservation of Water and Wastewater (EPA-600/4-82-029). The conclusion of the Convened Group was unanimous—the referenced orders are not value-added, are not necessary, and therefore, should not be included in the contract. This is consistent with the Criteria for Departments

Standards Program, page 4, in the paragraph **Take Necessary and Sufficient Approach**:

Contractor management identifies a sufficient set of standards for performance of work and submits it to the Department for acceptance. Applicable requirements contained in Federal, state, and local laws and regulations must be included in the set. Other requirements are included as the result of mutual agreement that takes into account the particular circumstances. The result of the approach is the agreed-upon necessary and sufficient set of standards. This necessary and sufficient approach permits good judgment to be exercised at the appropriate decision level, increases effectiveness of work and reduces arbitrary imposition of requirements that add cost but no value.

Requirements are those standards that are mandatory. The URA contract with the Department of Energy contains requirements. Management standards are treated as non-mandatory, and are kept as internal standards. They are all contained in the Fermilab Quality Assurance Program Plan and the Fermilab Self-Assessment Program Plan. All of these will be held subordinate to the Criteria for the Department Standards Program until a better understanding of the implementation process is achieved. Thus conditions are avoided which limit flexibility in selecting the best method for implementing standards by declaring discretionary standards to be mandatory. This also avoids confusing and conflicting direction that would lead to maintenance of costly parallel methods of compliance.

Fermilab and the DOE-CH Fermi Group, formerly known as the Batavia Area Office, are the owners of the implementation plan for our standards. Ownership means responsibility for key decisions (such as reaching closure on risks and priorities) and accountability for actually accomplishing work consistent with the standards. Methods for implementing the program are developed at the organizational level (site, facility, or activity) appropriate for effective management.

Assurance of performance comes through contractor self assessments and Department and external oversight. The contractors and the Department monitor and verify that work is conducted in accordance with the agreed-upon set of standards. The standards based approach provides an effective means for measuring and monitoring performance to requirements.

What was done? The following clause was inserted into the contract:

1,b,(3). (Fermilab will) Continue to maintain management systems that ensure that the agreed-upon standards are implemented.

This requires:

- 1. Fermilab to maintain adequate management systems, and
- 2. The Fermi Group to audit our management systems.

What is being done? The Lab is maintaining its "prior-to-July 14" management systems and will continue to do so until modified in concert with the Fermi Group. These systems were written and approved by the Fermi Group, CH, and ER prior to the N&S process. It is intended that these systems stay in place, but evolve into systems which are fully value-added as determined by the agreement parties.