

Laboratory Director's
Panel on Injury Reduction

Findings and Recommendations

June 30, 2006

EXECUTIVE SUMMARY

Fermilab employees have worked hard over the last several years to provide a safe working environment at the laboratory. The success of those efforts can be measured by the decreasing injury rates beginning in 1998. The Laboratory Director is pleased with the injury reduction efforts to date, but believes that there are still improvements to be made, as employees are still being injured. In addition, the Department of Energy Office of Science (SC) continues to set new more challenging safety goals. Fermilab cannot meet these goals without additional extra effort by all employees.

Fermilab's Director empanelled a committee to examine this dilemma. The Panel on Injury Reduction was thus formed. Specifically, the Panel was charged to: 1) review past efforts to reduce injuries and current injury trends to identify barriers that prevent employees from working injury-free, 2) identify practices that are working well at Fermilab, 3) study current industry-accepted Best Management Practices for applicability and potential for success at Fermilab, 4) talk to fellow employees, including management, ES&H professionals, and line employees.

The Panel concluded that there were several important overriding positive aspects to Fermilab's ES&H program. There were also several aspects of the ES&H program that the Panel considered to be improving. Finally, the Panel identified eleven findings and offered its recommendations for addressing these findings.

I. Introduction

Fermilab has worked hard to drive down the number of OSHA total recordable cases (TRC) and the injuries that result in Days Away, Restricted, or Transferred (DART). Recordable injuries are those that result in medical treatment, such as sutures, a prescription medication, a stiff splint, physical therapy, etc. A DART case is equivalent to an OSHA lost time case. Both types of injuries are calculated as a rate, based on 100 employees working a full year. (The yearly rate equals the number of injuries for the year times 200,000 divided by the number of hours worked for the year.) Beginning in 1998, Fermilab has implemented a number of initiatives that has helped to drive down the incident rates. The data presented below for Fermilab employees and subcontractors combined show how the DART rate has declined beginning in 1998:

<u>Year</u>	<u>DART</u>	<u>Initiative</u>
FY97	2.90	
FY98	2.21	Establish first safety goals
FY99	1.31	ISM and HA training, DuPont training
FY00	1.84	
FY01	1.63	
FY02	2.32	Leading/Lagging indicators instituted
FY03	0.56	
FY04	0.54	
FY05	0.50	ES&H Plans instituted
FY06 YTD	0.21	

There was a small rise in the DART in FY02 during the NUMI construction, but beginning in FY03 the DART has been quite low. The concern is that the DART has flattened and has not progressed much lower.

In response to this challenge, Fermilab's Director empanelled a committee to examine this dilemma. The Panel on Injury Reduction was thus formed. Specifically, the Panel was charged to: 1) review past efforts to reduce injuries and current injury trends to identify barriers that prevent employees from working injury-free, 2) identify practices that are working well at Fermilab, 3) study current industry-accepted Best Management Practices for applicability and potential for success at Fermilab, 4) talk to fellow employees, including management, ES&H professionals, and line employees.

The Panel was led by Rich Ruthe, TD Senior Safety Officer (SSO), and included the following individuals that represented a cross section of safety, supervision and management, as well as divisions and sections with differing activities:

John Anderson, AD SSO
Karen Kephart, PPD Associate Department Head
Mary Logue, ES&H Associate Head
Bill Mumper, TD supervisor
Brian Niesman, BSS supervisor
Randy Ortgiesen, FESS Deputy Head

II. Process

The Panel had its first meeting on March 13, 2006 to discuss the process that would be used to address the charge of the Director. A high priority was given to this task as the Director requested commented by June 2006. The Panel agreed to meet weekly until the completion of their work.

The Panel started out by reviewing the injury data for calendar years 2003 to 2005, which was summarized according to various parameters that Panel members thought might have a bearing on injuries at Fermilab.

Using the Director's Panel on Construction Safety as a model, the Panel determined that interviewing Fermilab employees was going to be an important aspect of their work. The Panel wanted to ensure that employees from each of the division/sections, and from all levels, were represented in their interviews. Based upon the "Cold Eyes" process used by Exxon-Mobil, the sampling size for each employee category (Management, Supervisor, Employee, ES&H Professional) for each division/section was determined. The numbers of employees interviewed were delineated as follows:

D/S	Total # Employees	D/S Heads	Dept. Heads	Supervisors	Employees	ES&H
AD	24	1	3	7	12	1
BSS	10	1	3	2	4**	0
CD	12	1	2	3	5	1
DI	3	1	2	0	0	0
ESH	7	1	1	2	2	1
FESS	14	1	1	3	8*	1
LSS	4	1	1	0	2	0
PPD	23	1	3	6	12**	1
TD	13	1	4	3	4**	1
Total	110	9	20	26	49	6

*5 bargaining unit employees

**1 bargaining unit employee

The Panel also looked at a number of training possibilities and management practices outside of Fermilab. A safety training program for supervisors and managers from the National Safety Council was reviewed, as was a leadership essentials training program that was presented to CD supervisors by an outside consultant. The injury data analysis technique utilized by the Institute of Nuclear Power Operators (INPO) was reviewed and subsequently used to analyze injuries at Fermilab for calendar years 2004 and 2005. The Panel reviewed Intel's safety model, and received a report from Mary Logue who had traveled to Brookhaven National Laboratory to investigate the implementation of their occupational safety and health management system under the auspices of ISO/OHSAS 18000.

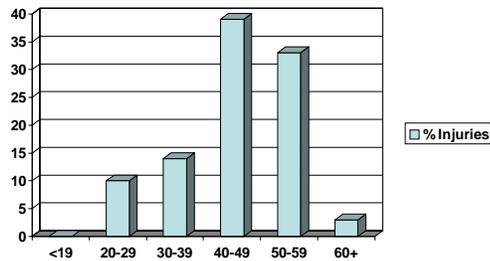
The Panel gave a power point presentation to the Director with its findings and recommendations on June 12.

III. Panel Activity and Results

The Panel first explored the possibility that certain factors may come into play

Total Recordable Cases

By Age CY 03-05



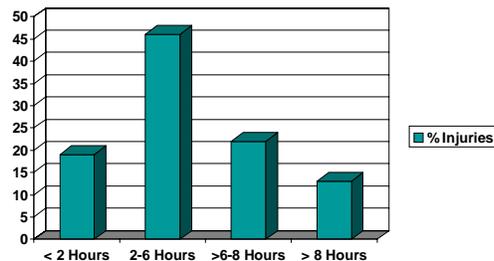
regarding injuries as Fermilab. The first factor considered was age of employee when injured. When all recordable injuries for the calendar years 2003 through 2005 were broken down by age group, a large peak appears in the 40-49 age group, with a slightly smaller peak at 50-59, as shown in the graph on the left. When the age distribution of Fermilab employees is examined, however, one finds that

the average age for a Fermilab employee is approximately 49. One would therefore expect these age groups to have a higher percentage of the injuries since they represent the greatest number among Fermilab employees. The Panel concluded that while the aging population is a concern to be addressed when planning work since physical conditioning and manual dexterity play a role in one's ability to safely perform work, it is only a minor contributing factor.

Panel members next considered the time of day an injury occurred. Again looking at recordable injuries from calendar years 2003 through 2005, the Panel considered the possibility that injuries may occur more frequently at the start of a

Total Recordable Cases

By Hours On Shift CY 03-05



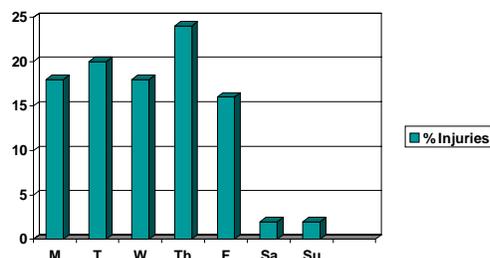
shift, because the employee may not quite be in the "flow" yet, or at the end of the shift, because the employee had their mind on after work activities. The Panel also considered those injuries that may have resulted from fatigue due to working overtime. As the bar chart to the left indicates, time of day has not had on bearing on when injuries occur. About just as many injuries have occurred during the

first two hours of the shift as the last two hours. The Panel therefore concluded that time on shift has not been a factor in injuries at Fermilab.

The day of the week was examined in the same manner as time on shift, again the

Total Recordable Cases

By Day of the Week CY 03-05



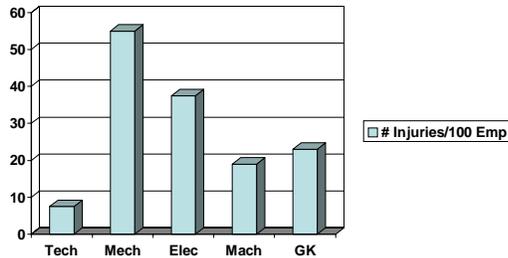
thinking being that there may be more injuries on Monday after the weekend, or more injuries on Friday as employees anticipate the weekend. Again there was little difference among the days of the week when a recordable injury occurred as shown in the bar chart on the left. The Panel therefore

concluded that the day of the week has not been a factor in injuries at Fermilab.

Finally, the recordable injuries were analyzed according to job classification of the injured employee. Because the

Recordable Incident Rates

By Job Classification CY 03-05



numbers of technicians far outnumber the number of employees in other job classifications, a rate per 100 employees was calculated and compared. As the graph on the left indicates, the technicians (Tech), who perform innumerable non-routine tasks, have a much lower injury rate than the other job classifications that were also examined. The high incidence of

recordable injuries in mechanics (Mech) and electricians (Elec) is consistent with higher injury rates that FESS has faced in recent years. On the surface, it appears that mechanics and electricians are the most hazardous jobs at Fermilab, but the injuries that have occurred are not unique to this type of work. Careful and thorough job planning is important in each of the organizations where injuries have occurred.

FESS initiated a new program of incentives, beginning in 2005, for one segment of the Section. If there are no DART cases in this segment during a four month period of the calendar year, each member of the segment will receive \$30. An employee can receive up to a maximum of \$90, which is paid in January for the previous year. The Panel also discussed other types of incentive programs that have been used in industry. In the end, the Panel considered incentive programs in general to be a fairly strong incentive for not reporting work-related injuries. At this time the Panel feels that the FESS incentive program has not been in effect for a sufficient amount of time in which to make an assessment. It is interesting to note that in calendar year 2005 FESS received the award for the most improved division/section in regards to injury statistics.

The Panel reviewed two externally provided training programs. The first, *Safety Competencies for Managers and Supervisors*, was developed by the National Safety Council. The Panel felt that there was little substance to this program. The principle it put forth, that of applying supervisory and management practices to safety, is already strongly emphasized at Fermilab. The Panel felt that the DuPont Operations Managers Training is already well established and received at Fermilab. Since the DuPont training was modified specifically for Fermilab, it is a better choice for training its supervisors.

Another potential training program was identified by the CD SSO when she attended a professional conference. The dynamic speaker put forth the concept that safety should not be a separate entity and addressed separately, but rather be a part of and integrated into normal operations. CD made arrangements to bring the speaker to Fermilab to present a session on *Fermilab Leadership Essentials*, which most of the Panel members were able to attend. There was not a lot of new

information, but the presenter did make some good points and in an interesting fashion. The feedback from the CD supervisors was somewhat mixed. Again the Panel feels that the same results can be achieved through the DuPont training along with some modified supervisory training that will be recommended later in this report (See Finding #3).

The Panel reviewed the human performance classification system employed by the Institute of Nuclear Power Operators (INPO) for the classification of injuries. All Fermilab injury data (DART, TRC, first aid) for calendar years 2004 and 2005 was analyzed using the INPO classification system. The Panel found that 70% of all injuries were caused by either poor work planning or poor work practices. The Injury Illness Prevention Subcommittee had previously addressed poor work planning through revisions to FESHM 2060 (Hazard Analysis for Fermilab Employees), which included modifying the hazard analysis form to incorporate a checklist of items on the first page, a pre-job briefing and a job site walk down before starting the job, and a post-job review to determine if improvements could be made to future jobs. The Panel did identify a recommendation for addressing the poor work practices issue which will be presented later in the report (See Finding #5).

Brookhaven National Laboratory (BNL) has been in the process of working towards certification in ISO/OHSAS 18000, an international occupational health and safety management system that is in the same vein as ISO 14000 (environmental) and ISO 9000 (quality). Mary Logue traveled to BNL to look at what the lab has done to implement ISO 18000 and reported back to the Panel. Mary reported that most of the programs that have been implemented at BNL for ISO 18000 have already been incorporated into the ES&H program at Fermilab. The one major exception was that of performing risk assessments at BNL. Risk codes of one (lowest) to five (highest) are established for activities that are based on three factors: 1) frequency of activity or use of a piece of equipment, 2) the severity of a possible injury from the activity or use of equipment, and 3) the probability of injury. The three factors are then multiplied together to come up with a risk code. Any activity or use of equipment that generates a risk code of 80 or higher is deemed too hazardous, which then requires a modification of the activity or use of equipment. The major drawback to this activity is that it is labor intensive and time consuming. The Panel feels that risks are being adequately addressed at Fermilab through the hazard analysis process, which is not used at BNL. The focus of the hazard analysis/job planning process is to mitigate hazards to lower the risk to the lowest level possible, which the Panel feels is a better approach.

The Panel looked at Intel's safety model, whereby the world's leading innovator in silicon technology strives for world-class safety performance. Intel is safety data driven, where the right data in a real-time format gives them the tools and the power to achieve the safety performance that is desired. The Intel safety model focuses on among other things: 1) the timely reporting of all incidents, 2) first aid cases, 3) recordable cases, 4) and a "progressive" indicator that is the ratio of first aid cases to recordable cases. The purpose of the progressive indicator is that a first aid case could be a leading indicator of a poor work practice or poor work planning that at some future point could lead to a more serious injury. Fermilab

recently revised its policy to require that first aid cases be investigated and entered into the CAIRS system. Previously the requirement was only that recordable and DART cases be entered into CAIRS. Although the *Employee ES&H Handbook* requires that all injuries be reported, no matter how minor, the Panel learned through its interviews that not all employees across the lab are necessarily following this policy. The Panel will have a recommendation in this regard later in the report.

A major portion of the Panel's activity was devoted to conducting employee interviews as outlined in Section II. Using the model developed by Exxon-Mobil "Cold Eyes" Review, the Panel developed a series of questions for the different levels of employees to be interviewed, i.e. worker, supervisor, department head, top level manager and ES&H. These served as a guide for the interviews. A team of two Panel members was formed to interview designated employees within a Division/Section. A Panel member did not conduct interviews within their own Division/Section. The interview process started with the worker level and worked up towards the Division/Section Head as the last interview. Once the interviews for the Division/Section were completed, the interview team then summarized the results of the answers to their interview questions, as well as any suggestions or comments that they had received. The Panel then met as a whole to condense the interview results further into a number of major findings which are included in the next section of this report (See Finding #7).

IV. Positive Aspects of the Fermilab ES&H Program

Through the interview process, and in comparison to outside activities that were reviewed, the Panel concluded that overall Fermilab has a sound safety program. Employees believe that Fermilab management is committed to safety as a priority, and employees overwhelmingly feel that they have the necessary resources at their disposal to work safely. Employees generally feel empowered to bring their safety concerns to the attention of their supervisors and managers.

There are several positive aspects to the safety program that the Panel classifies as "improving". For example, employees generally stated that pressure, whether real or perceived, does not keep them from working safely. Some employees stated that the pressure tends to be more self-induced, because they know there are other lab personnel anxiously waiting for them to complete their task. Every employee with whom this was discussed, however, stated that they would not work faster if they felt it would be unsafe to do so. In many instances, it was mentioned that supervisors did a good job supporting employees in this stand.

Another positive aspect that is improving is the "Stop Work" authority. Every employee interviewed understood their right and responsibility to stop work they felt was unsafe. Many employees cited examples of having acted on this authority. They also reported their willingness to stop work and/or speak to personnel within their work groups that they consider to not be working safely. Yet some employees remain less comfortable when dealing with those outside of their own work groups. In these instances, the Panel found that the employee will usually, but not always, seek out their supervisor or safety personnel and inform them of their concern.

V. Findings and Recommendations

As stated in Section IV, the Panel concluded that overall Fermilab has a sound safety program. In many instances the Panel's recommendations are based on a good safety management practice it found in one area of the lab that it feels should be implemented throughout the lab.

1) Involvement by lab management in the safety program ranges from very involved to little involvement.

The Directorate, Division/Section Heads and Department Heads all need to be actively involved in the safety program. This sends a clear message to employees that management is engaged and cares about their safety. The involvement of management ranges from actively involved in the safety program almost on a constant basis, to becoming involved only when there is a scheduled assessment. Taking those positive aspects from the Division/Sections where management is actively engaged, the Panel offers the following recommendations for management at all levels of Fermilab:

- Conduct walk through tours of their areas to talk to employees about safety and how work is planned. It is very easy to turn these into workplace inspections, but that should be left to the ES&H professionals on staff. The Panel feels that this should be a management performance goal in the appraisal process.
- Attend safety classes as required for "regular" employees. Employees spoke highly and positively about those managers that attended classes with them. It sends the message that this training is truly important. It also eliminates any excuses for not being able to attend a training class when your manager has found time to be there in person to take the same training.
- Ask for and listen to suggestions from employees. Respond promptly to these suggestions, even when they cannot be acted upon or implemented. The Panel found that employees will respect a management decision to their suggestion as long as they at least receive an explanation.
- When Division/Section Heads conduct scheduled staff meetings, incorporate safety into the agenda and include the SSO in the discussions. The Panel is not recommending that Division/Section Heads conduct meetings, but rather to include safety as a topic and the SSO as a participant if they do hold such meetings.

2) Inconsistent enforcement of safety rules or lack of consequences for safety rule violations.

Fermilab employees are looking for enforcement of safety rules, but one of the frequent observations by employees was that there was very little enforcement, or the enforcement was inconsistent. The Panel recommends that management demonstrate to employees that safety rules are not subject to interpretation and demand compliance from all employees. An individual's job title or deemed importance to the lab should not be a determining factor in instituting disciplinary action. This could be accomplished by management setting the example, making sure that they are observing workplace rules. Counseling of employees for non-compliance with rules should take place. It could be that there is a reason for the non-compliance that needs to be addressed by management. It could also be that progressive disciplinary actions may be warranted.

3) Supervisors do not always provide concrete guidelines or expectation for employees to work safely.

The Panel found that in some instances supervisors are not providing much direction to their employees beyond the stock phrase "be careful". This is not necessarily the fault of the supervisor. Fermilab has not always provided adequate tools for the supervisor with which to work. The Panel recommends that additional training be developed that goes beyond the DuPont Operations Manager training and the current supervisory training. The Panel recommends an expansion of the current ES&H portion of the new Fermilab Management Practices Seminar (FMP), to include more information on the tenets of human performance improvement. This training should be required of all supervisors. A separate course number should be assigned. Credit should be not allowed for those supervisors who have taken previous versions of the Supervisory Development Class. Because of the time constraints that supervisors are under, the Panel recommends that this training be made available on-line, which would allow the supervisor to work at their own pace as time is available. . It is suggested that the development of this training be performed by the ES&H Section with input from supervisors and SSOs.

There are some things that supervisors could begin to do immediately that would help in providing direction to employees. The Panel found that those work groups that hold job briefings with employees at the start of the shift, before any work begins, have done an excellent job of ensuring that employees understand their assignments, and have the necessary tools to complete their assignments safely. These work groups have successfully demonstrated their ability to work safely through their extremely low injury rates. This is also a requirement of construction subcontractors working at Fermilab, and its success has been demonstrated there as well.

Supervisors also need to clearly communicate area safety rules to those employees that do not normally work in their areas. If an area in which a supervisor works has gone beyond lab policy to implement slightly stricter safety rules, then the supervisor must ensure that personnel coming into that

area are aware of and understand these rules. Supervisor need to enforce these rules as well.

4) Many employees feel that some lab managers are more focused on the numbers than on the safety of the employees.

The Panel feels that this is where its recommendation for management walk through tours can be a valuable tool in dispelling this myth. The walk through tours send the message that management is interested in the well-being of the employees, particularly if the manager takes the time to talk to employees. As several employees, including managers, pointed during the interview process, “Actions speak volumes”. This is a vehicle in which managers can get the word out that safety is as important as the lab mission. As the logo on the garments handed out by ES&H as rewards states: "Fermilab – First in Science & Safety”. To this end, Fermilab should consider modifying its mission statement to include a reference to safety. While this may seem like a trendy thing to do, a review of other Office of Science labs find that a reference to safety is found in their mission statements in some manner. This also creates a talking point for managers on their walk through tours.

The Panel has two additional recommendations that could go a long way towards impressing upon employees that it is not all about the numbers. The National Safety Council specifically mentions that management should 1) listen to employees and respond to their suggestions even if they cannot be acted upon or implemented, and 2) institute off the job safety programs as a step towards making safety more personal. The first item has already been mentioned in Finding #1. The Panel recommends that an off-the-job safety program, which focuses on working safely at home for the family’s sake be implemented. This may require the formation of another panel or committee to develop this program if this recommendation were to be accepted.

5) A large percentage of injuries at Fermilab are the result of poor work practices, lack of focus or complacency.

To address this finding, the Panel suggests that Human Performance Improvement (HPI), as espoused by INPO, be integrated into our incident investigation process. HPI is based on the studies that point to the fact that humans commit five to seven errors an hour. HPI states that when errors are made, investigation into the management systems be conducted to understand why those errors occurred. For example, an employee uses a broken ladder, falls and is injured. Analyzing the incident from an HPI perception would look at the reason(s) the employee chose that ladder. Did the employee know that it was broken? If not, why was it still in service? Perhaps the warning sign fell off. Perhaps a new ladder had been requested, but because of illness in the Purchasing Department, the order had not been completed. Perhaps the employee did not recognize the problem with the ladder. Perhaps the employee knew the ladder was broken, but had used it with his supervisor’s knowledge many times in the past.

The Panel recommends that this action be assigned to the Injury Illness Prevention (IIP) Subcommittee. ES&H has scheduled a training session to be held at Fermilab by an outside expert in this discipline sometime in August. It is suggested that the Injury Illness Prevention Subcommittee and selected supervisors review this training and provide recommendations on how best to include HPI in the Fermilab ES&H program.

The Panel also recommends that for ES&H courses that have a re-qualification period, greater emphasis be placed on work practices and lessons learned than on theory.

6) Few employees are aware of injury incidents, let alone their causes, at Fermilab.

The Panel recommends that sanitized incident reports be prepared and distributed to all lab personnel. A possible method for distribution could be a web link in *Fermilab Today*. There is some concern that this might discourage employees from reporting, but the Panel feels that if done properly, could serve as a valuable lessons learned to all Fermilab employees. The Panel understands that these sanitized reports would have to be written with great care. The Panel suggests that this be assigned to the IIP Subcommittee to determine an appropriate format.

7) In some areas of Fermilab personnel do not report to Medical with minor injuries as required by lab policy and stated in the *Employee ESH Handbook*.

A range of reasons were provided by employees as to why they would not report first aid injuries, such as:

- Concern over disciplinary action for being injured.
- Do not want to affect injury statistics of department, division/section, or lab.
- Do not want to deal with the injury investigation.
- Do not want to stop work to go to Medical.
- Would not go to doctor at home so why go to Medical at work.

The Panel offers a two-part recommendation. The first is that the difference among a DART injury, a reportable injury, and a first aid injury needs to be clearly explained to employees. In many instances management does not understand the differences. Some employees believed that any injury reported to the Medical Department was considered “reportable” and would affect injury rates at Fermilab.

The message also needs to be conveyed about the danger of not reporting first aid injuries, i.e. the lab is missing out on an opportunity to examine possible precursors to more serious injuries. In conjunction with this, the Panel’s second recommendation is that the lab institute a new leading indicator, that of the ratio of first aid cases to reportable cases. This ratio is used by Intel as

a progressive indicator, and they have established a goal of at least 9:1. A high ratio is desirable, because it means that employees are reporting first aid cases that can provide a larger data pool for statistically relevant analysis of problematic behaviors or processes. This ratio is based on the Heinrich model, which states that for every 300 near miss/first aid incidents, there will be 29 reportable incidents and one DART. By comparison, the ratio of first aid cases to reportable cases at Fermilab is well below this target:

- FY06 1.88
- FY05 2.78
- FY04 2.95

The Panel recommends that its suggestion for implementation of this new leading indicator be forwarded to the IIP Subcommittee for further follow-up action.

8) Individual employees are not recognized and/or rewarded for working safely.

Employees appreciate the annual group celebrations that occur within the Division/Sections, but few could point to examples of individual recognition for not being injured, coming up with outstanding safety suggestions, or completing an exceptionally difficult task injury free. The suggestions that follow came from employees during the interview process, and are being passed on to the Director:

- Have a safe person award similar to the Iron Man award, i.e. the employee receives a certificate identifying a year or years worked without an injury.
- A personal telephone call from the Division/Section Head, or even someone in the Directorate, on a job “well done”.
- Have a safety luncheon award at Chez Leon for exemplary safety performance in the same mode as that for service awards.
- Promote the use of R&R money to reward non-safety personnel for outstanding safety performance or safety suggestions.

9) Safety goals and performance measures are used infrequently and inconsistently in the Fermilab appraisal process.

The Panel feels that safety needs to be a component of the goal setting and performance appraisal process for all employees. The Panel therefore recommends that the performance appraisal form be revised to incorporate an area in which to address the safety performance of the employee. Each employee should also develop realistic and pertinent goals as a precursor to the performance appraisal as they do currently for other aspects of their work activity.

The Panel also recommends that a requirement be implemented for the mandatory annual updating of the Individual Training Needs Assessment (ITNA) and Work Activities Analysis Form (WAAF). Ideally the ITNA and

WAAF should be updated during the performance appraisal process. While the ITNA ensures that employees will have the correct training identified for their current activities, the WAAF is an important tool in preventing employees from being put into work situations that may exacerbate a pre-existing medical condition. This is particularly important when an employee transfers from one group to another. Because the ITNA and WAAF are the responsibility of the supervisor, the Panel recommends that the supervisory section of the performance appraisal form be revised to include this requirement. A simple check box may suffice.

10) There is an uneven structure of the ES&H function among the Divisions/Sections.

While at least one SSO reports directly to the Division Head, other SSOs are situated further down in the organizational structure of the division. The Panel observed that in these latter instances the authority of the SSO was not always obvious. In one instance one SSO is responsible for three Sections, and may therefore be spread too thin to adequately provide the support necessary. While the Panel is not recommending any particular organizational structure within the Division/Sections, it is recommending that at least on a functional level the SSOs report to their respective Division/Section Head, and that each SSO functionally report to the Fermilab ES&H Director. The Panel also recommends that the SSOs have scheduled meetings with their respective Division/Section Head and with the ES&H Director to ensure that all parties are apprised on ongoing issues and there is consistent implementation of lab ES&H policy.

11) There still exists much confusion over the requirements of NFPA 70E.

Despite the significant effort spent by the Laboratory in the past 10 months on NFPA 70E, employees reported continued confusion of its requirements. It is recognized that this standard is complex, and that perhaps multiple iterations of the material is necessary before it is fully understood. The Panel recommends that this issue needs additional attention by the Electrical Safety Subcommittee, possibly through:

- A list serve of all those that have attended NFPA 70E training to provide updates and additional information as needed.
- Additional Town Meetings to discuss NFPA 70E with Fermilab personnel. This venue could be used to provide an overview of NFPA 70E issues and would serve as a forum for questions and answers for employees that do not need the NFPA 70E training but have an interest in learning about NFPA 70E.

VI. Summary Recommendation

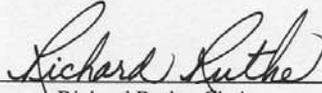
In summary, the Panel feels that many of its recommendations break down into two key issues: 1) Communication up and down the management chain, and across work groups; and 2) Visible involvement in safety by lab management at all levels. After review and acceptance of this report, and the recommendations

contained therein, the Panel suggests the following implementation plan. These actions, it is felt, will set the stage for addressing these two key issues.

1. The Laboratory Director should meet with his direct reports and perhaps the Division/Sections Heads to present this report and discuss its findings and those recommendations that he has accepted. He should seek input from this management team into approach and assignment of responsibility. Members of the Safety Panel are available to provide detail, background and any other assistance that may be needed.
2. After the discussions with his management team, the Laboratory Director should direct the development of an action plan, with implementation dates to address the recommendations that he has accepted. Like any assessment, the findings and resulting action plans should be entered into ESHTRK. This will allow management to track completion of actions.
3. The report, its recommendations, and follow-up actions should be shared with employees. This could be accomplished through a presentation to the Laboratory Safety Committee (LSC), and a series of *Fermilab Today* articles.
4. The Laboratory Director should expect routine status reports of the follow-up actions. This could possibly be done through his weekly scheduling meeting or the monthly LSC meetings.
5. The Laboratory Director should conduct on-going follow-up surveys with employees to gauge the impact of these actions.

Respectfully Submitted

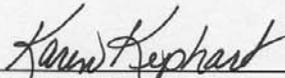
Director's Panel on Injury Reduction



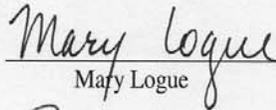
Richard Ruthe, Chair



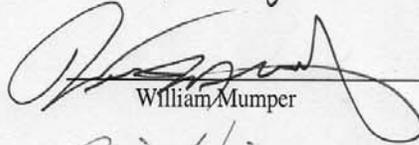
John Anderson



Karen Kephart



Mary Logue



William Mumper



Brian Niesman



Randy Ortgiesen