

Human Performance Improvement #203

Title RWP & PPE Violations

Event Date 03/20/2018

Close Out Date 04/02/2018

Performed On ESH, SAFETY & ENVIRONMENTAL PROTECTION

Led By ESH, SAFETY & ENVIRONMENTAL PROTECTION

Department Manager Maddie Schoell

Location MI-20--MI-62 Enclosure and Main Control Room

ORPS No

Incident Unexpected Outcome

Category

Entered By Maddie Schoell 04/18/2018 17:24

Updated By Dave Baird Jr. 07/14/2020 21:32

Incident Description During a scheduled accelerator maintenance period (3/20-21/2018), the assigned RSO took two members of the Fermilab Site Office (FSO) on a tour of the MI-20--MI-62 enclosure, which was in controlled access mode at the time. While in the enclosure, two individuals were found to not be wearing gloves, which is required PPE while in the MI-20--MI-62 enclosure during a controlled access as noted on the RWP. Individual #1 was driving a cart, so could not be addressed in the moment. Individual #2 was standing in an alcove so the RSO reminded them that they needed to put gloves on as the tour group walked past. Once the tour group left the enclosure, the RSO looked at all of the RWP sign in sheets for the controlled access made in all beamline enclosures during that access day and found several additional issues: 43 instances of individuals not filling out the sign-in sheet correctly - most leaving the LSM number column blank, 4 instances of individuals not writing down the correct Enter key barcode number on the RWP, 107 instances of individuals indicating Level 1 PPE (gloves and shoe covers) when their job description was something other than "tour" or "walkthrough" or "inspection" (Level 1 PPE is appropriate for walking and looking but not touching, and Level 2 PPE is needed for any work. Since these instances said something other than tour/walkthrough/inspection, they may have been doing work that required Level 2 PPE), and 2 instances of the same individual (Individual #3) writing something inappropriate and unprofessional in the job description column.

What Happened? Individual #1 - not wearing gloves, driving the cart This individual was performing "as-found" surveys of a kicker in the MI-52 region of the MI-20--MI-62 enclosure, and was working on the computer (brought from their office in the DZero Outback, not in the enclosure during beam operations) while their partner was moving their SMRs (reflectors) to various points on the kicker. Both individuals put Level 1 PPE on the RWP because they would only be touching the material brought from their offices and not actually touching the beamline components. Both were wearing shoe covers, and the partner moving the SMRs was wearing gloves. Individual #1 had gloves in their pocket in case they needed to help their partner with something, but since they only worked on their computer they never put them on. This was not recognized as an issue because they have years of experience entering the enclosures and not getting contaminated. Individual #2 - not wearing gloves, standing in the alcove This individual was working in an alcove by MI-52 and helping work on stands that were brought in the enclosure from MI-60 Service Building. Indicated Level 1 PPE on the RWP and wore gloves and shoe covers into the enclosure. While working on the stands, their gloves were loose and kept getting caught/pinched and tore. Individual #2 didn't leave the enclosure to get new gloves for several reasons: the equipment they were working on came from a service building and was not contaminated; if it were to be contaminated, since their gloves tore their hands would already be contaminated and they didn't want to touch keys, door, etc.; and they knew they would have to controlled access out once they were done and wanted to limit the number of controlled accesses. Individual #3 - inappropriate/unprofessional job description on RWP This individual was doing water leak checks and repairs in multiple enclosures during the access days. Individual #3 remembers filling out the multiple RWPs, indicating Level 1 PPE, and reminding several people to remember to fill in the LSM column. Individual #3 also remembers writing something "silly" down as the job descriptions, because a few weeks earlier an RCT told him that it didn't matter what's written down because no one looks at it.

Immediate Actions Taken While in the enclosure on 3/20/2018, the assigned RSO and FSO personnel noticed Individual #1 not wearing gloves while driving a cart in the opposite direction. The RSO wrote down Individual #1's name with a note to follow up after the tour. Also while in the enclosure on 3/20/2018, the assigned RSO was able to remind Individual #2 to put on gloves while continuing the tour with FSO personnel. The RSO did not stop to talk, but gave Individual #2 the reminder as the tour group was passing by. The RSO noticed Individual #2 acknowledge the reminder and start to get gloves. After the RSO/FSO tour was complete, the RSO reviewed all of the controlled access sign-in sheets for the accesses made on 3/20/2018 and noticed several errors: 43 instances of individuals leaving sections blank (mostly LSM numbers), 107 instances of individuals indicating Level 1 PPE when their job description was not "tour"/"walkthrough"/etc. and suspect that Level 2 PPE should have been worn, and 6 instances of the wrong key number being written down (mostly individuals writing down the 2-digit key number instead of the 4-digit barcode number). After discovering this, the RSO spoke with the Shutdown Coordinator and the AD DSO, and brought all of the issues up to the AD Division Head. After more discussion, it was decided that the AD Division Head should send an email to AD & other groups working in the enclosures on the 2nd day of the maintenance period alerting them to the numerous errors found on the 1st day, and reminding them of the requirements. This was completed later that evening.

Why Did It Make Sense At The Time Individual #1 - not wearing gloves, driving the cart Not wearing gloves made sense at the time because Individual #1 was only working on a computer brought into the enclosure from their office area - thought that there was no chance their hands would come in contact with potential contamination. Individual #2 - not wearing gloves, standing in the alcove Not leaving the enclosure to get new gloves made sense at the time because Individual #2 was working on equipment brought into the enclosure from a service building - thought that there was no chance their hands would come in contact with potential contamination. Also, after initial pair of gloves ripped, thought that if the material was contaminated their hands would already be contaminated after the gloves tore and they didn't want to touch keys/doors/etc. any more than necessary - meaning only once as they exited when job was done. Individual #3 - inappropriate/unprofessional job description on RWP Individual #3 believed the comment that no one reads the RWP sign in sheets, and thought that it didn't matter what they wrote down.

Topic(s) Communication | Documentation | Process | Radiological Protection | Training

Lead Reviewer Schoell, Maddie 16344N (ES)

Review Team McHugh, Eric 13747N (ES)

Review Team Murphy, Marty 11576N (AD)

Involved Person Anderson, Kris 15447N ()

Involved Person Clemons, James, Jr. 11341N (AD)

Involved Person O'Boyle, Michael 05027N ()

Involved Person

Organizational Planning and Scheduling: Time pressure to turn beam back on resulted in a two day controlled access. Accesses this long have otherwise been under **Weakness** supervised access conditions.

Values, Priorities, Policies: All three individuals valued their own opinions about their decisions that the rules didn't apply to them, instead of correctly discussions with ESH&Q to see if they could get approved for an exception.

Error Human Nature / Assumptions (inaccurate mental picture): Individual #3 believed that the controlled access sign-in sheets were not reviewed, and **Precursor** decided that it didn't matter what was written as the task description.

Human Nature / Habit patterns: Individual #1 regularly doesn't wear gloves when only working on the computer.

Human Nature / Inaccurate risk perception (Pollyanna): Individual #1 and Individual #2 made their own risk evaluation about the potential for coming in contact with contamination and made their own determination that gloves weren't needed, even though it was against the requirement in the RWP.

Causal Codes

Item ID	Causal Code	Narrative
99353	A3.B2.C04 Previous success in use of rule reinforced continued use of rule	Both individuals have not worn gloves while in the enclosure under controlled access conditions in the past without any issues - no contamination was ever found & were not questioned by coworkers/management when not wearing gloves.
99353	A3.B3.C03 Individual justified action by focusing on biased evidence	Both individuals have not worn gloves while in the enclosure under controlled access conditions in the past without any issues - no contamination was ever found & were not questioned by coworkers/management when not wearing gloves.
99353	A4.B4.C02 Progress/status of task not adequately tracked	In all cases, supervisors did not adequately check status of work to ensure individuals wore correct PPE. Also, ESH&Q's periodic check of the RWP Sign-in sheet is not frequent enough to catch issues with the RWP Sign-in sheet in a timely manner.
99353	A5.B1.C01 Format deficiencies	The multiple issues found with individuals not writing down LSM numbers can be attributed to the formatting of the RWP Sign-in sheets. Most individuals obtain LSMs in the MCR, next to the sign in sheets, so have no issues writing the LSM number down. However, some individuals meet with others who already have the LSM or are picking up an LSM from another location so they do not know the LSM number while in the MCR filling out the RWP Sign-in Sheet.
99353	A5.B3.C01 Lack of written communication	Individual #3 did not accurately write down their work/job description. Instead, they wrote a sarcastic description based on incorrect verbal communication (see A5.B4.C03).
99353	A5.B4.C03 Correct terminology not used	Individual #3 took a sarcastic comment as truth, and believed that the RWP Sign-in sheets were not reviewed so it didn't matter what was written down.
99355	A3.B2.C04 Previous success in use of rule reinforced continued use of rule	Both individuals have not worn gloves while in the enclosure under controlled access conditions in the past without any issues - no contamination was ever found & were not questioned by coworkers/management when not wearing gloves.
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iTrack Items

Item	Responsible Person	Category	Item Title	Item Description	Item Due Date	Item Status	CAP	CAP Scheduled Date	CAP Close Date	CAP Title	CAP Description	CAP Resolution	CAP Status
99353	Schoell, Maddie	Management Concern	Communicate Reminder about RWP & PPE	Communicate reminder about correctly filling out RWP sign-in sheets and the required PPE for Controlled Accesses.	20-MAR-18	Closed	80929	20-MAR-18	20-MAR-18	Communicate Reminders on RWP & PPE	Communicate reminder about correctly filling out RWP sign-in sheets and the required PPE for Controlled Accesses.	Communication was sent to AD All Hands and various other groups outside of AD as a reminder about PPE and the appropriate way to fill out RWP sign-in sheet.	Closed
99355	Schoell, Maddie	Recommendation	"Working Group" for RWPs	Set up "working group" to look into the RWP & sign-in sheet layouts for better clarification of the requirements on the RWPs and information that is needed on the sign-in sheets.	30-JUN-19	Closed	82656	30-JUN-19	18-JUN-19	RWP Working Group	Improvements to RWPs being rolled into new Work Planning & Control (WPC) tool. Once a working model of electronic RWPs in WPC exists, working group can begin.	RWP sign in sheets have been modified to better articulate what information needs to be included on sign-in sheet, with the continued use of paper RWPs. This is also being looked at in the development of the electronic RWPs in the WPC.	Closed
99356	Schoell, Maddie	Recommendation	"Working Group" for PPE	Set up "working group" to look into Controlled Access PPE levels to determine if they are still appropriate, need to be	30-SEP-19	Closed	82657	30-SEP-19	28-MAY-20	PPE Working Group	review PPE requirements	PPE determined to be required as necessary for contamination control	Closed

				reworked, or have intermediate levels added.									
99357	Schoell, Maddie	Recommendation	Consider Admin Assistance	Work with ESH&Q Admin for assistance with initial collection and review of the RWP Sign-in sheets on a more routine basis.	31-DEC-20	Closed	82658	31-DEC-20	22-MAY-20	Consider Assistance for RWP sign-in sheet collection and review	Still testing possible improvements. Admin not appropriate person to review documents, so not practical to add another step for them to collect. RSOs collecting & reviewing more frequently as time allows. More time needed to find best solution while still using paper document.	Electronic RWP system implemented. Will aid in reviewing signatures and reduce the frequency needed for paper collection.	Closed

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