

## Human Performance Improvement #243

**Title** Dosimeter Issued to Minor

**Event Date** 05/29/2019

**Close Out Date** 07/18/2019

**Performed On** Environment, Safety and Health Section

**Led By** Environment, Safety and Health Section

**Department Manager** Lori Limberg

**Location** WH Comm Center (Ground Floor)

**ORPS** No

**Incident Category** Unexpected Outcome

**Entered By** Kathy Vuletich 06/25/2019 00:00

**Updated By** Bridget Iverson 07/14/2020 15:25

**Incident Description** A dosimeter was issued to a minor (person under 18 years of age) by the Comm Center. This is the sequence of events that occurred leading up to and including the issuing of the dosimeter on 05/29/2019. 5/23/2019 Age verified of all student collaborators The PPD contact for the Abilene Christian University (ACU) collaboration inquired with the university about the age of all students that are part of the collaboration and was assured they were all over 18. There were 5 students planning to arrive at Fermilab on Tuesday 5/27/2019. An ACU professor currently onsite at Fermilab confirmed the students were all over 18; to the PPD contact in an email, noting that 3 students were new and had never been onsite at Fermilab, and the other 2 were returning students that had been to Fermilab previously. 05/28/2019 Request for Training On 05/28/2019 the onsite ACU professor asked ESH Training for space in the next day's Practical Factors class, noting that 3 students needed to take the class. (The 2 returning students had taken Rad Worker in 2018 and were still current on their training and were not required to retake the training.) 05/28/2019 - 05/29/2019 Training completed The 3 new students needing Rad Worker and Practical Factors completed the training on 5/28/2019 and 5/29/2019. 05/29/2019, 5:30PM Dosimeters obtained from Comm Center The 3 students went to the Comm Center to obtain dosimeters. When the 3 students who had just completed their training obtained their dosimeters, an automatic email was sent out to their ITNA contact, RSOs and the dosimetry program personnel indicating that they were current on training to get the dosimeter but that the ITNA Contact needed to update their ITNA to indicate their required training is documented. At the same time, another automatic email was generated and sent to dosimetry@fnal.gov indicating that a dosimeter was issued to a minor. It included the minor's name and the Comm Center employee who issued it. After the dosimeters were issued, a message appeared on the computer stating that a dosimeter was issued to a minor. 05/29/2019, 7:00PM Verification the minor did not enter Radiation Areas The ESH Radiation Physics Operations Manager was notified by ESH Rad personnel later that evening. The manager went to NM4 and Building 327 (where the other project offices are located) to see if they could locate the minor or the dosimeter issued, but was unsuccessful. ESH Rad personnel verified with the Main Control Room (MCR) that the minor had not been issued any enclosure key, so they had not yet entered any Radiation Areas. ESH Rad personnel then asked the MCR to be aware and not issue a key if the minor were to request one over the evening, before training could be officially revoked. 05/30/2019, 10:30AM Training Revoked and dosimeter returned to Comm Center ESH Training revoked the Radiation training classes 5/30/2019 in the morning (confirmed in a 5/30 10:37am email). The minor returned the dosimeter 5/30/2019 in the morning to the Comm Center, and ESH Admin retrieved it (confirmed in a 5/30 1:00pm email).

**What Happened?** Minor - The same day the dosimeter was issued to the minor was the same day they received their Fermilab Badge. During that process the minor was asked to produce a driver's license/ID, and they were asked to have their parents sign a parental consent form. The minor's parents signed the form, and at this time the minor believed that everything was taken care of to be able to perform the work being asked of them by the collaboration - with the completion of the training that was still outstanding. During the interview it was mentioned that they were not notified of any restrictions placed on minors, and had they been aware of these restrictions they may have decided to take another offer with a different project. Fermilab Contact - The Fermilab contact indicated that previous situations caused them to ask collaborations prior to arrival if any members are under 18 years of age because no official notification is given to them from internal at Fermilab or externally from the University. Information received from those at the University must be asked for. Information from the users office is not passed along to the Fermilab contact, so they are left to their own processes to inquire about specific details on collaborators coming to Fermilab. Until the collaborator receives an ID badge, the Fermilab Contact cannot do anything. Onsite Professor - It was the end of a semester when the onsite professor received an inquiry email from the Fermilab contact asking about the ages of the collaborators coming to Fermilab. The professor indicated that they knew all students coming for the collaboration had finished at least one year of college, and quickly looked at the applications. The professor replied indicating all students were 18 or older. The professor stated that a deeper look at the birthdates on the applications should have occurred and was an oversight on their behalf. On the day of the incident, it was unclear to the professor why it took so long for the minor to get their ID badge. The professor proceeded to get the students signed up for training they needed. Comm Center - Minor was the last of 3 students to obtain dosimeter. No issues during the issuing process, but noticed the pop-up window after the process was complete. The pop-up window was a notification that the last student was a minor. No indication occurs otherwise that says a person is a minor. If any of the students had not been up to date on their training, a warning notification would have occurred before the dosimeter was issued requiring RSO approval. In this case that was a non-issue. The Comm Center has also noticed cases where people have tried to get a dosimeter even when their ID badge has expired. The Comm Center does turn them away, but there is nothing in their training on how to handle these situations or those when a minor comes to apply for a dosimeter.

**Immediate Actions Taken** ESH Training revoked the Radiation training classes 5/30/2019 in the morning (confirmed in a 5/30 10:37am email). The minor returned the dosimeter 5/30/2019 in the morning to the Comm Center, and ESH Admin retrieved it (confirmed in a 5/30 1:00pm email). Service Desk tickets have been submitted to change the system used to issue dosimeters so that the age verification window comes up before the dosimeter is issued (and not after as is the process now).

**Why Did It Make Sense At The Time** The Fermilab contact had verified with the Onsite Professor that all the collaborators coming to Fermilab were over 18 years old. Employees were working under the assumption that the collaborator ages had been verified prior to coming on-site at Fermilab, so there was no indication leading up to issuing the dosimeter that one collaborator was under 18 years of age. The internal system used to issue dosimeters did not have an automatic reminder or warning while the process of issuing a dosimeter was occurring. Only after the dosimeter was issued did the system say that this particular person was a minor, so the employee issuing a badge was working under the assumption everyone was of age. There were no indications through the process or notifications that there was an under 18 collaborator present...

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

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**Person**

**Organizational Weakness** Communication: A Memo communication that had been sent to D/S Heads and Chiefs about minors would not have been received by the PPD collaboration contact.

Organizational Interfaces: WDRS, Users Office lack interfacing with points of contact.  
 Supervisory Involvement: Point of contact for users/collaborators is just that, a point of contact which leaves them in a position where they have no authority over the user/collaborator. Many POCs also have too many users/collaborators assigned to them to feasibly keep track of.  
 Training: No training exists for supervisors for how to handle people under 18 years of age (non-summer students). Training only exists for how to handle people under 18 years of age for managers of summer students.  
 Values, Priorities, Policies: FESHM Chapter only applicable to employees or summer students, does not include collaborators/Users. Policy on under 18 workers is set but not adequately implemented (no consistency across organizations at the lab). Collaborators/Users are only provided w/ Global Services website (via Users Office), no other policies are provided. ITNA contacts are not held accountable for people they are responsible for (large volume usually assigned to one person).

**Error Precursor** Human Nature / Assumptions (inaccurate mental picture): The Fermilab onsite professor assumed all collaborators were over 18 because they all had completed at least 1 year of college. Employees at Fermilab assumed all collaborators were over 18 because they assumed there was a process check in place within internal laboratory systems.

Task Demands / Lack of or unclear standards: The FESHM Chapter 1010 is written so that it is only applicable to employees and is not applicable to sub-contractors and users (collaborators).  
 Task Demands / Time Pressure: The age verification request was received by the Fermilab onsite professor at the end of a semester. They indicated there was time pressure to get work completed and verification of the ages was rushed.  
 Task Demands / Unclear goals, roles and responsibilities: It is unclear what responsibilities the NM4 Facility Manager/host for collaborators (or in general any host of a collaborator) had in regards to supervision of collaborators.

**Causal Codes**

Item ID	Causal Code	Narrative
101799	A4.B1.C01 Management policy guidance/expectations not well-defined, understood or enforced	FESHM 1010 Policy on under 18 workers, sub-contractors / collaborators was not enforced by management. Training prohibition was not implemented in TRAIN to stop underage workers from taking prohibited training. Management communication is unclear on expectations for how the laboratory is to handle underage people.
101799	A4.B1.C07 Responsibility of personnel not well-defined or personnel not held accountable	The Fermilab Contact inquired about the age of the collaborators based on his prior experiences but was NOT directed to do so per responsibility communicated to him from management or other means.
101799	A5.B3.C02 Not available or inconvenient to use	A current memo includes all restrictions for under 18 minors and gets sent to chiefs and division heads, but Fermilab Contact would not have received this communication. (Communication not made readily available to those who needed to see it).
101799	A6.B1.C02 Training requirements not identified	No training for supervisors of general people (non-summer students). ITNA/TRAIN system does not verify under 18.
101806	A5.B1.C06 Instruction step/information in wrong sequence	The warning message on the system used to issue the dosimeter occurred at the end of the process instead of at the very beginning. This left the person issuing the dosimeter in a position where they have no way to stop the process.

**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 Descr
101799	Vulecich, Kathy	Non-Conformance	FESHM 1010 Scope not applicable to all minors performing work at Fermilab	Federal and state regulations prohibit all minors from conducting certain types of work. FESHM 1010 does not specify that the restrictions listed in section "2.12 - Employees Under the Age of 18 and their Supervisors" apply to all minor performing work at Fermilab. The chapter only lists minors who	31-OCT-19	Closed	83790	31-OCT-19	16-DEC-19	Revise FESHM 1010	Revise 1010's includ minor's perform work a laborat Submi

				come to the laboratory through the Education and Outreach Office.							revisio lab-wi review approv
101800	Kofron, Joel	Opportunity for Improvement	ITNA Process to verify age of worker	To help enforce the policy that is specified in FESHM 1010, an opportunity exists to update the ITNA process to verify age when performing an ITNA, and alert the ITNA contact that the person they are performing the ITNA for is a minor that per FESHM 1010 has work restrictions that must be adhered to. An opportunity exists to also update TRAIN to prevent minors (persons under 18 years of age) from taking tests and receiving credit for a course until they are no longer minors.	30-JUN-20	Closed	84409	30-JUN-20	07-MAY-20	ITNA Process to verify age of worker	Service Ticket submit reques EAG c make e to TR/ would minors enrolli course taking online for a c that th not all compl to age
101801	Lopez, Griselda	Opportunity for Improvement	Design new watermark for badges for minors	To help enforce the policy that is specified in FESHM 1010, and to better identify badged individuals as minors, an opportunity exists to design a watermark for badges issued to anyone that is a minor regardless of status (employee, user, sub-contractor).	31-JAN-21	Closed	83990	31-JAN-21	18-JUN-21	Design new watermark for badges for minors	Will cr new w for all age pe: System trainin require vendor the sys SME l lab. 9/ Purcha new be printer schedu trainin Octobe schedu system by late Octobe 12/3/21 Trainin schedu mid-D 1/7/21 Decer trainin delaye technic and Cc Resche for 1/2 2/16/21 not be to com installk the nev softwa some imple setbacl COVII are try finaliz project end of Februa
101802	Lopez, Griselda	Opportunity for Improvement	Users Office communication to Users - include restrictions for minors	To help communicate the policy specified in FESHM 1010 regarding restrictions for minors at Fermilab, there is an opportunity to add a communication from Users Office and Global Services to incoming users and collaborators to make them aware of any limitations and restrictions for minors before they come to the laboratory.	31-OCT-19	Closed	83989	31-OCT-19	12-SEP-19	Users Office Communication to Users - include restrictions for minors	Assist commu the pol specifi FESH! regard: restrict minors Fermil adding



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101806	Vincent, Michael	Non- Conformance	System used for issuing Dosimeters verifies age at incorrect step	The current system for issuing a dosimeter has a warning message regarding minors, but the message appears after the dosimeter is issued. This is in violation of FESHM 1010 which restricts minors from performing rad work.	31-OCT-19	Closed	83751	01-JUL-19	01-JUL-19	Modify Temporary Dosimetry Badge Request Form System to Prevent Issuing Badges to Minors	
101807	Charles, Sandra	Recommendation	WDRS assess usage/process for Parental Consent Form	The HPI investigation looked at the process for how minors come to the laboratory and requirements for onboarding. Part of the process, which is not consistently implemented is the completion of a Parental Consent Form <a href="https://get-connected.fnal.gov/users/accounts/documents/">https://get-connected.fnal.gov/users/accounts/documents/</a> . The Users Office has received no instruction on what to do with completed forms. It is recommended that WDRS assess the process and use of this form to ensure it is clearly communicated what the expectations are for the form, and that it is consistently implemented through all channels by which minors come to work at the laboratory (including Users Office, Summer Student Programs, Sub-Contractors, etc.)	01-DEC-20	Closed	86749	01-DEC-20	01-DEC-20	WDRS assess usage/process for Parental Consent Form	9.28.20 further t think t belong Educat Public Outrea organi: and the Office. ESH (I is revis the cur form a update revisec will be availat the organi: respon on-boa minors organi: have b instruc send c forms Medic:
101808	Charles, Sandra	Opportunity for Improvement	Provide ESH Medical Office with copies of all signed Parental Consent Forms	The ESH Medical Office has indicated they do not receive copies of all Parental Consent Forms for minors working at the laboratory. The form ensures the Medical Office can provide timely treatment in the event of an emergency. In order to improve processes for the Medical Office, copies of all completed Parental Consent Forms for minors should be sent to the Medical Office to keep on file.	30-SEP-20	Closed	84541	30-SEP-20	28-SEP-20	Send parental consent forms to Medical Office	

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