

Human Performance Improvement #189

Title During ALARA job water repair, employee receives minor laceration

Event Date 10/25/2017

Close Out Date 12/29/2017

Performed On Accelerator Division, AD Deputy Org, Headquarters, Engineering, Mechanical Support

Led By Accelerator Division, AD Deputy Org, Headquarters, Engineering, Mechanical Support

Department Francisco Rios

Manager

Location MI-30 Section 302

ORPS No

Incident Unexpected Outcome

Category

Entered By Eric McHugh 11/08/2017 14:17

Updated By Eric McHugh 06/24/2020 10:31

Description Employee was performing shutdown maintenance on the Main Injector water system. This job was an ALARA job that was governed by a RWP and written ALARA plan. The employee was reaching to unthread a 1/4 pipe plug. The employee was not wearing gloves at the time. The employee was walking away from the area and noticed blood. The RCT overseeing the job reacted quickly and performed a radiation survey and transported the individual to medical for first aid treatment. No radiological issues were discovered during the survey.

What Happened? The employee and crew were responding to last minute water leaks that were discovered at the end of the shutdown. The shutdown coordinator quickly prepared an ALARA plan with consultation from the RSO. The crew commenced the work. The initial phase of the work consisted of draining the pipe of LCW water, cutting the pipe and brazing the pipe to repair the leak. The work was planned using an ALARA plan due to the activity in the area. The employee felt time pressure to complete the task due to the last minute nature of the job (last job before turning on the machine) and the ALARA nature of the job that limits time in an area. The employee took off his gloves to get better dexterity to remove the 1/4 pipe plug. The employee did not know he was cut until a short time later. The machined threads of the small plug were sharp and created a small laceration. The ALARA plan was created quickly before the job started. The ALARA plan looked closely at the steps of the job to limit the exposure to the personnel. A Hazard Analysis was not supplied at the time of writing the ALARA plan.

Immediate Job was stopped, employee escorted to medical.

Actions Taken

Why Did It Make Sense At The employee and supervisor did not recognize that a HA would be required for these tasks. The employee and supervisor did not recognize that an injury in an ALARA task carries heightened sensitivity and precautions. During the creation of the ALARA plan, it was not recognized by the shutdown

The Time coordinator (creator of the ALARA plan) that a HA was also required and was not supplied by the workers. It is also expected that the supervisor or task leader already has an HA for this work or will create one for this work that works in conjunction with the ALARA plan if necessary.

Topic(s) Communication | Documentation | General Management | General Safety | Radiological Protection | Risk

Lead Reviewer McHugh, Eric 13747N (ES)

Review Team Schoell, Maddie 16344N (ES)

Involved De Leon, Jesse, Jr. 14891N (AD)

Person

Involved Delao, Jose 04175N (ES)

Person

Involved Gattuso, Consolato 08022N (AD)

Person

Involved Rios, Francisco 09378N (AD)

Person

Organizational Procedure Development or Use: The hazard recognition was LTA. No HA was created for this task or for any other time this routine task has been completed. It was not recognized by the supervisor or the employee that a HA was required. The ALARA plan creators and reviewers also did not recognize the work crew did not have an HA for the job.

Error Task Demands / Time Pressure: Last second planning of the task. Water systems are not filled and tested till the last minute of the shutdown due to work **Precursor** on the systems and efficiency.

Causal Codes

Item ID	Causal Code	Narrative
98093	A3.B1.C01 Check of work was LTA	Check of work less than adequate, employee did not wear gloves as prescribed for ALARA activity. The hazard recognition was LTA. No HA was created for this task or for any other time this routine task has been completed. It was not recognized by the supervisor or the employee that a HA was required. The ALARA plan creators and reviewers also did not recognize the work crew did not have an HA for the job. The lack of gloves and not recognizing that the threads can be sharp contributed to the event. The job was an ALARA job that contributed to the severity of the event.
98093	A4.B3.C11 Inadequate work package preparation	There was no written job plan, procedure or hazard analysis written for the job. The ALARA plan was written and adequate for the job, but did not include the general hazards encountered nor the PPE certification for the job.
98093	A5.B3.C01 Lack of written communication	There was no HA written for this task. The PPE was not certified for this task.
98094	A3.B1.C01 Check of work was LTA	The lack of gloves and not recognizing that the threads can be sharp contributed to the event. The job was an ALARA job that contributed to the severity of the event.
98094	A4.B1.C01 Management policy guidance/expectations not well-defined,	Management guidance not adhered to as prescribed in RWP Need Causal Narrative

	understood or enforced	
98094	A4.B3.C11 Inadequate work package preparation	There was no written job plan, procedure or hazard analysis written for the job. The ALARA plan was written and adequate for the job, but did not include the general hazards encountered nor the PPE certification for the job.
98094	A5.B3.C01 Lack of written communication	There was no HA written for this task. The PPE was not certified for this task.
98095	A3.B1.C01 Check of work was LTA	The lack of gloves and not recognizing that the threads can be sharp contributed to the event. The job was an ALARA job that contributed to the severity of the event.
98095	A4.B3.C11 Inadequate work package preparation	There was no written job plan, procedure or hazard analysis written for the job. The ALARA plan was written and adequate for the job, but did not include the general hazards encountered nor the PPE certification for the job.
98095	A5.B2.C08 Incomplete/ situation not covered	Opportunity for improvement in communication between HA and ALARA process.
98095	A5.B3.C01 Lack of written communication	There was no HA written for this task. The PPE was not certified for this task.

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 Resol
98093	Wong-Squires, Mayling	Non-Conformance	Less than adequate hazard analysis preparation, PPE less than adequate.	During the HPI interviews it was not clear to the supervisor when an HA would be required for routine tasks or other tasks that might involved outside personnel. ESHQ to provide guidance and educate on when an HA is required.	30-MAR-18	Closed	79892	30-MAR-18	30-MAR-18	General HA's for routine maintenance tasks		AD/MSD d General Ha: (https://www.msdfinal.gov/admin/deptID=45& these HA's : HA's of rou has been co department
98094	Wong-Squires, Mayling	Non-Conformance	Less than adequate hazard analysis preparation and communication, lack of PPE certification	An HA or procedure was not developed for this task. The PPE required for this task was not certified per OSHA and Fermilab requirements, which is easily met if an HA or procedure had been created. During the HPI interviews it was not clear to the supervisor when an HA would be required for routine tasks or other tasks that might involved outside	30-MAR-18	Closed	79891	30-MAR-18	30-MAR-18	General Hazard Analysis for Fluids Tasks drafted	AD/MSD has drafted a General Hazard Analysis for General Fluids Tasks (https://www-esh.fnal.gov/pls/cert/iTrack.fdetail?fid=98094). Use of this general HA as a template for future fluids tasks has been communicated to the AD/MSD/Fluids Group	AD/MSD h Hazard Ana Tasks (https://www-esh.fnal.gov/pls/cert/iTrack.fdetail?fid=98094). as a templat has been co AD/MSD/F

				personnel. ESHQ will provide guidance, as necessary, to develop the HAs and/or procedures.							
98095	Gattuso, Consolato	Management Concern	Opportunity to improve the connection between the ALARA planning for shutdown tasks and the Hazard Analysis process.	During the HPI interviews it was not clear that there was a connection between the ALARA reviews and a request for the other portion of the job planning, an HA or procedure.	15-MAR-18	Closed	79815	15-MAR-18	15-MAR-18	ALARA planning for shutdown tasks and the Hazard Analysis incorporation into planning	We are taking approach to MSD is view of the HA's work tasks : work list en HA and AL ALARA pl and being in planing easi better.

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