

Human Performance Improvement #149

Title Improper Move of Radioactive Material

Event Date 02/01/2017

Close Out Date 04/10/2017

Performed On Directorate, Deputy Chief Operating Office, Facilities Engineering Services Section, Logistics & Property Control

Led By Directorate, Deputy Chief Operating Office, Facilities Engineering Services Section, Logistics & Property Control

Department Jack Kelly

Manager

Location Railhead

ORPS No

Incident Unexpected Outcome

Category

Entered By Jemila Adetunji 02/07/2017 13:40

Updated By Maddie Schoell 08/12/2020 10:54

Incident Description On February 1, 2017, a member of the Accelerator Division called ESH&Q's Rad Safety personnel to inform them of the possibility that radioactive shield blocks were delivered to the MC-1 area, and that the area was not appropriately posted. A Radiological Control Technician went to investigate and noticed that the blocks were spray painted with "Class 1". The RCT then surveyed the blocks and found them to be radioactive. The RCT spoke with an RSO and the area was posted as a 'Radioactive Material/Control Area'.

What Happened? Cory Crowley initially requested some shield blocks from the Railhead on 1/30/17. Craig Rogers is the point of contact for shield blocks and was in charge of coordinating the transfer from the Railhead to the MC-1 area. Craig then went out to the Railhead and spoke with Tom Miller. Craig showed Tom which shield blocks he wanted. Instead of then completing an MMR, Craig then called Dave Myers in the Property office to arrange for the move, thinking this was the most efficient process, since he had already discussed the blocks with Tom. Dave then created a job ticket, which would be his next course of action. However, Dave did not realize the blocks were radioactive, and a job ticket does not address this question of radioactivity (unlike an MMR). Craig assumed that Dave would know that the blocks could be radioactive and where they were located within the Railhad. Tom then staged the blocks in the South hardstand, but did not survey them for radioactivity, because there was not an MMR that would have instructed him to do so. On (DATE?) a driver showed up at the Railhead unexpectedly to pick up the blocks. That particular day was also very busy at the Railhead. Tom and the driver loaded the blocks on the truck and the driver headed to MC-1 and dropped them off. This is when Dan Vrbos noticed the blocks, and due to the Class 1 painted on one of the blocks determined that radioactive materials were located in an unposted area. He then called Joel Fulgham, ESH&Q rad safety.

Immediate Actions Taken Members of ESH&Q went to the area where the blocks were located. The blocks were identified and surveyed. The area was appropriately posted. The job tickets for the blocks were located and reviewed.

Why Did It Make Sense At The Time Craigs actions made sense because he had already spoken with Tom about which blocks he needed. Since Craig knew the blocks were most likely radioactive, he assumed Dave would know and Tom would perform a survey, even without an MMR. Daves actions made sense, because when he is called to arrange for a material move, he then creates a job ticket, not an MMR. Toms actions made sense, because he didn't receive a notification to perform a survey. The large amount of activity at the Railhead on the day the blocks were picked up, and the driver arriving unexpectedly prevented Tom from realizing that he had only staged the blocks and not yet performed a survey and should have an MMR. The blocks arrived at MC-1 and the area was not appropriated posted immediately, because nobody in AD was notified of their arrival.

Follow Up After an MMR has been completed and the materials have been identified as being radioactive, Radiation Physics Engineering Personnel should be notified. This will also prevent the materials from being delivered to an unauthorized or unposted area. This can be done through an automated email notification system

Topic(s) Communication | Documentation | General Management | Process | Radiological Protection

Lead Reviewer McGimpsey, Susan 12359N (ES)

Review Team Borton, Scott 06244N (FE)

Review Team Fulgham, Joel 09634N (ES)

Involved Person Cons Gattuso ()

Involved Person Corey Crowley ()

Involved Person Craig Rogers ()

Involved Person Dan Vrbos ()

Involved Person Dave Myers ()

Involved Person Tom Miller ()

Organizational Weakness Communication: Communication breakdown within verbal request of blocks and lack of communication with ESH&Q Rad Safety regarding the delivery of radioactive materials (blocks)

Procedure Development or Use: An MMR process is in place but was not followed

Error Human Nature / Assumptions (inaccurate mental picture): The verbal communication was not sufficient due to assumption regarding

Precursor the status of the blocks

Human Nature / Complacency / Overconfidence: A habitual process was followed versus the actual procedure (verbal communication)
Individual Capabilities / Imprecise communication habits: Initial communication did not provide sufficient details for request; lack of MMR

Task Demands / Simultaneous, multiple tasks: A lot of work activities were happening at the Railhead, during the time that the driver came to pick up the blocks

Work Environment / Changes / Departures from routine: The MMR Process was not followed

Work Environment / Distractions / Interruptions: Another task that was considered to be high priority served as a distraction to routine tasks

Causal Codes

Item ID	Causal Code	Narrative
96870	A3.B2.C03 Too much activity was occurring and error made in problem solving	Multiple activities were occurring at the Railhead on the day that the driver showed up to pick up the blocks. This contributed to Railhead personnel failing to realize that an MMR was absent. The lack of an MMR resulted in the survey not being performed before loading the blocks onto the truck. Personnel did not effectively follow the established MMR process. There was a failure in communicating the need for a survey to be performed prior to the movement of the materials.
96870	A5.B4.C01 Communication between work groups LTA	Railhead personnel relied on the requestor to have completed an MMR. The requestor just assumed that since he had spoken with Tom at the Railhead, and Dave in the property office, that all necessary steps to move the block would still happen, even though an MMR was not completed. The requestor also assumed that since he knew the blocks were radioactive, that the property office would also know this information. Personnel did not effectively follow the established MMR process. There was a failure in communicating the need for a survey to be performed prior to the movement of the materials.
96871	A3.B2.C03 Too much activity was occurring and error made in problem solving	Multiple activities were occurring at the Railhead on the day that the driver showed up to pick up the blocks. This contributed to Railhead personnel failing to realize that an MMR was absent. The lack of an MMR resulted in the survey not being performed before loading the blocks onto the truck.
96871	A5.B4.C01 Communication between work groups LTA	Railhead personnel relied on the requestor to have completed an MMR. The requestor just assumed that since he had spoken with Tom at the Railhead, and Dave in the property office, that all necessary steps to move the block would still happen, even though an MMR was not completed. The requestor also assumed that since he knew the blocks were radioactive, that the property office would also know this information.

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
96870	Borton, Scott	Finding	Action to provide further communicate or training on the MMR Process at the Railhead	Personnel must always fill out an MMR when requesting items from the Railhead, and Railhead personnel must ensure there is an MMR and survey performed of the materials before they are allowed to leave the Railhead.	11-APR-17	Closed	77767	31-MAY-17	11-APR-17	Revisit MMR process with the LPC personnel		CAP Resolution received from S. Borton on 4/11/17: all LPC personnel involved in the railhead operation have been spoken to, concerning all shipments coming into or going out of the railhead must have an MMR. All outgoing material must be surveyed before departing the railhead, and if required the survey information must be completed before a Job	Closed

Ticket is created. The majority of the material shipped from the railhead is non-radioactive, and the requestor completes the hazardous and radioactive portion of the MMR based on process knowledge. MMR0037383 is an example of this procedure, where Craig Rogers requested 4 C-Blocks. Before this incident Dave Myers was submitting a ghost MMR and completing the radioactive and the hazardous portion, that is no longer the case. Dave no longer creates MMRs for material going to or coming out of the railhead. Also, we implemented a change in our procedure that our team has to generate MMRs so that we are always selecting one of our qualified teammates to conduct the radiation survey before releasing the material. We have also informed the dispatch team that they cannot create a job ticket if someone calls asking for their assistance, referring them

											to the property office for assistance.		
96871	Borton, Scott	Finding	Review MMR Process at the Railhead to ensure proper communication to RPE	After an MMR has been completed and the materials have been identified as being radioactive, Radiation Physics Engineering Personnel should be notified. This will also prevent the materials from being delivered to an unauthorized or unposted area. This can be done through an automated email notification system	26-APR-17	Closed	77768	30-JUN-17	26-APR-17	Develop automated email notification	The automated email notification system is currently in development, and should move into production sometime late April, early May. This will notify Maddie Wolters, Sue McGimpsey, Joel Fulgham's team, along with Dave Hockin that radioactive material is being relocated.	When an MMR is filled out and it indicates that radioactive material(s) are being moved, an email notification is now sent to the members of the Radiation Physics Engineering Dept. and the Hazard Control Technology Team. Also, we created an enhancement within service now that once a job ticket is generated and that the job ticket and MMR are closed that the radiation safety team that Maddie selected receive an email notification. We tested this in one of our test environments and Maddie and others on her team received the notification allowing us to proceed with making the changes into our production system.	Closed

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