Hudson

RADIATION SAFETY NONCONFORMANCE REPORT 2008 JAN 10 AM 8:06

Nonconformance Report No: 07-01 **Issue Date:** 3-12-07

Location – Holtec Manufacturing

Initiated By: Rick Allen / Lou Hass – RT Safety Program Officers Problem Date: 1/19/2007

INCIDENT BACKGROUND

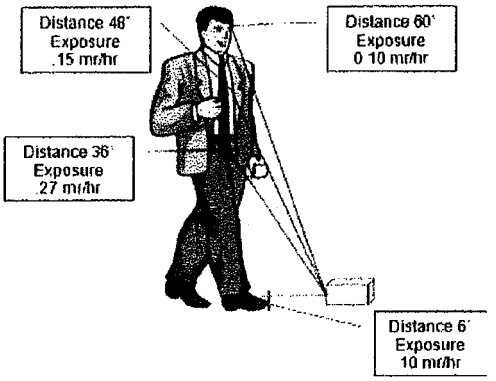
On Monday, January 19 2007, Hudson dispatched a two-man Radiography crew to Holtec Manufacturing. After completion of the required work the Radiographer began to develop the radiographic film in the darkroom. The assistant radiographer began to deconstruct the work-site. After the camera concealing the radiographic isotope had been locked the Assistant Radiographer carried the source, in its secure container out of the pit which is designated for radiography at Holtec. At this time the Assistant radiographer placed the Source container and Survey meter down and retrieved additional film cassettes. After retrieving the cassettes the Assistant Radiographer proceeded to the darkroom with the cassettes while in the process lowering the radiation ribbon and failing to return it to the position that would restrict access to the source camera. In the process of the aforementioned actions the Assistant Radiographer left the source container out of his direct line of sight, in clear violation to the Hudson Global Resources Radiation Operating and Emergency Manual.

During the time that the source was left unattended Holtec personnel accompanying visitors on a facility tour entered the radiography area and encountered the radiographic source container and survey meter that was left unattended by the Assistant Radiographer. The Hudson Radiography Team had already disconnected the control cable and source guide tube thereby eliminating any potential for the source to be removed from the camera.

ACTUAL IMPACT OF INCIDENT

Through interviews with the radiography team and as verified through direct interviews with the customer representative, it was determined that the nearest personnel to the source container could have been as close as six inches away from the source container. At the time of the incident the survey meter reading was 10 milli-roentgen per hour (mr/hr) at a distance of six inches form the outside of the survey container indicating that the source was in its safe storage condition and safely contained within the camera.

Further, based on this survey meter readings verified by the customer at the time of the incident and later recreated using the actual devices that were in use at the time of the incident, it can be ascertained through calculations that the maximum exposure rate at the feet was 10 mr/hr, the pelvis area was 0.27 mr/hr, the chest area was 0.15 mr/hr and the head area was 0.10 mr/hr (see illustration). The maximum allowable regulatory exposure limit is 2 mr/hr whole body dose for a non-radiation worker.



The actual exposure to each individual was substantially less than these values based upon the limited time (approximately 1 total minute) that the personnel were in close proximity to the camera. Based on this information it can be determined that the exposures would be .16 mr to feet, 0.0045 mr to the pelvis area, 0.0025 mr to the chest area and 0.0016 mr to the head area. A whole body dose exceeding 2 mr/hr was not a possibility, even if the individuals had remained stationary in the area for one continuous hour.

POTENTIAL IMPACT OF INCIDENT

The potential impact of the incident was limited to the loss of control of the camera and source by the authorized handlers of the camera and radioactive source. The potential impact was diminished due to the fact that the radiation source was locked in a camera that is a USNRC Certified shipping container. There was no potential for radiation exposure to non-Hudson personnel beyond acceptable and established regulatory limits.

Customer Notification Required: (X) Yes ( ) No

Customer Notification Completed: (X) Yes ( ) No

Corrective/Preventive Action Recommended:

Through this report and the reenactment of the incident, the customer personnel involved in the incident will be provided objective evidence that they had not been exposed to any unsafe level of exposure to the radiation field and to the safe operating condition of the source storage device.

These actions are in clear violation to the Hudson Global Resources Radiation Operating and Emergency Manual. The incident will be reviewed and documented with the Hudson personnel who comprised the radiography team. Records of the incident will be made part of their permanent personnel files. Retraining to the Hudson Radiation Safety Control Program will be provided to these individuals prior to their performance of any additional radiographic work. Time frames for the remedial training shall be established by the Senior Hudson Radiation Safety Officer. In addition to the individual training, the RSO shall also make a determination as to the extent and timeframe for review of the incident with all other members of Hudson's radiography inspection team members.

Approved By: Mark Fenske – Senior VP Energy Services Date: 03/15/2007

Acknowledged By: Louis C. Hass, Radiation Safety Officer Date: 03/16/2007

Corrective/Preventive Action Taken:

The radiographer that led the two-man crew is no longer employed by Hudson. A letter was placed in the former employees personnel and radiation safety file regarding the incident. In the event that the Radiographer would become employed by Hudson in the future he will not be able to perform radiography until he has received the issue specific training. The Assistant Radiographer has been retrained to the specifics of the incident to the satisfaction of the Radiation Safety Officer. The Assistant Radiographer has been released to perform duties under the direction of a Hudson Certified Radiographer. The records of the training have been placed in the Assistant Radiographers personnel and radiation safety file. In addition to the individual training a model of the incident will be presented to all radiographer at the annual radiation safety training session. The training session is scheduled for January 2008.

Approved By: Louis C. Hass, Radiation Safety Officer Date: 4/2/2007

Acknowledged By: Nicholas DeSantis, QA Manager Date: 4/2/2007

Corrective/Preventive Action Taken Verification:

Acceptable (X) Rejectable ( )

Comments:

Performed By: Louis C Hass Date: 4-2-07

Approved By: Louis C Hass Date: 4-2-07

Final Approval By: Louis C Hass Date: 4-2-07
Radiation Safety Officer

Hudson

RADIATION SAFETY DEPARTMENT

TRAINING ATTENDANCE LOG

SUBJECT: HOLTEC VNCR #134 / Hudson RT Safety NCR #07/01

DATE: 4/2/2007 DURATION: 2 hours

INSTRUCTOR: Louis C. Hass, Radiation Safety Officer Louis Hass

Reginald N. Barnes.

1. Reginald N Barnes 7. _____

2. _____ 8. _____

3. _____ 9. _____

4. _____ 10. _____

5. _____ 11. _____

6. _____ 12. _____

TRAINING SUMMARY FOR RT SAFETY NCR 07/01

- HOLTEC VNCR #134
- Operating and Emergency Manual Compliance
- Compliance with 10CFR Parts 20 & 34
- Posting of Barriers
- Access to radiation areas
- Protection of general public
- Constant control of radiation areas
- Constant control of radioactive materials

Hudson

TO: File

FROM: Louis C. Hass
Radiation Safety Officer

DATE: April 2, 2007

RE: Larry Fabian/RT Safety NCR 07/01

On January 19, 2007, Larry Fabian was the lead Radiographer on assignment at Holtec Manufacturing. During the scheduled work scope the two-man crew left the radiographic camera unattended. During the time the camera was unattended personnel from Holtec, and Holtec guests walked upon the camera.

Since the incident Mr. Fabian has left the employ of Hudson. Due to the seriousness of the incident re-training was required before Mr. Fabian would be able to perform Radiography duties. However, Mr. Fabian and Hudson separated prior to this training being conducted. In the event that Mr. Fabian would become re-hired by Hudson in the future he must have the required incident specific training before he could perform any radiographic duties.

The intent of this memo is to allow Hudson to have traceable means to close the NCR and ensure that Mr. Fabian's radiography work would be in compliance to the NCR if he would become re-hired by Hudson.

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