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April 14, 2010

"The Employer"

The Chief Compliance Officer is writing in response to the employer's letter dated February 19, 2010, in which the employer requests a deviation from Section 40(1) of General Regulation 91-191 that states:

> ***40****(1) On a project site, an employee shall use Class E, Type 1 headwear that conforms to ANSI standard ANSI Z89.1-1997, "American National Standard for Industrial Head Protection" or a standard offering equivalent or better protection.*

In the employer's request the employer indicated the following:

- This deviation is requested to allow employees to progress work safely in specifically defined work areas, for specifically designed tasks, while (1) not wearing a hard hat and (2) wearing an alternative means of head protection selected in line with the associated risks, as defined by Regulation 40(1);
- The feeder cabinets are two areas located in the building above the reactor, which feed water through the calandria for the exchange of heat. Feeder tubes are connected to four headers in each cabinet. There are a combination of 360 feeders in each cabinet, along with 3/8" OD sensor tubing and associated electrical installations.
- The work sequence requires that the feeder tubes be installed first, followed by the tubing, and lastly the electrical components. As each tube and supplementary connection is made, the work area shrinks in available workspace. The connections are also made more difficult in that the connection points are at times within the bundles of feeders. The hard hat restricts the employee's ability to reach the reactor components as required.
- The specific work areas and task for which the request for deviation is being made are detailed below:
    - Under normal installation, all work will be conducted with an approved hard hat worn by all workers as per Regulation 40(1). Specific areas and job tasks that cannot be performed while wearing a hard hat are listed below, for the Chief Compliance Officer's review:

<u>Delayed Neutron (DN and Impulse Tubing Installation):</u>

- The DN and Impulse Tubing Install work force generally will not need to remove their hard hats while performing their work objectives except:
    - When installing a specific Impulse Tube Support that attaches to tubing located deep between Feeders Tubes.
    - After a complete Header Assembly and all associated tubing has been installed and "Punch Out" verification is required. This would require the worker to lie on his back and look up between feeders to see if any tubing needs adjustment due to interferences or close proximity to adjacent feeders/tubing. Adjustments may require the worker to remove the hard hat to allow arms and head to get close enough to the tubing to execute the task.

Electrical Installations

- The electrical installation workforce generally will not need to remove their hard hats while performing their work objectives except:
    - When installing new clamp assemblies at four header locations over the next three week period. In these locations, the feeders have previously been installed, so workers need to position themselves between the feeders (approx. 10") in order to install the clamp assemblies on to the top three feeders. Hardhat removal may be required. To date the employer has completed clamp installation as follows:
        - On 6 of 21 banks at header 5
        - 1 to 11 banks at header 1
        - 10 of 21 banks at header 3 and
        - 0 of 4 banks at header 7
- The employer hopes to have these completed in three weeks. All other clamps will be installed with feeder installation, where hardhat removal will not be required. There is one more occasion when hat removal may be required, which is when inspections are done (3/4" obstruction clearance) of the completed installation. This will be done over a one-day period for each header when it is complete installed.

Upper Feeder Installation

- The feeder work force has a situation that may require personnel to remove their hardhats to perform their duties as listed below:
    - During the possible repair to hanger rods and seismic blocks, there may be an occasion where personnel may require the removal of their hard hats. This is necessary to get their hand close enough to the work to manipulate the materials and tools inside/between the feeders. This is also a static job, as no movement about the platform is required.
- The employer proposes to deviate from the requirement for wearing of a hard hat for the above tasks only, which are all static in nature. At all other times, and for movements following the completion of the specified tasks noted, hard hats are required. It has been made abundantly clear that the disciplinary procedures of the respective companies will be enforced should violations be observed.
- Evaluations of these tasks clearly show that workers heads are in close proximity to contacting structures in the spaces that they must access. The associated risks include sharp edges, metal banding material, and stainless tags with the potential of causing minor bumps and scalp lacerations and abrasions.
- In order to progress work safely, the employer's strategy is as follows:
    - Alternative head protection which can best be portrayed as being an "aviators" hat made of substantial leather to provide protection against sharp objects and contact points is being sourced and secured. This would be employed only for the occasions where access is necessary to perform work. In addition, once an area is assessed for potential contact points, the employer may also use "softeners" to cover potential contact points, as well as employ a spotter to eliminate distractions or contact with other workers accessing the feeder cabinets;
    - Along with direct supervision, these areas are under constant monitoring by cameras. Although in place for the purpose of worker safety in regard to radiation protection, they do provide the opportunity to observe workers at all times for personal safety;

  - During this work, there will be what may be considered overhead work in parallel. This would represent the only risk of a falling object. That work is the refurbishment of the feeder cabinets themselves, i.e. the removal and reinstallation of insulation. This provides the opportunity for bits of loose insulation and/or tools to fall.
  - Worker protection at that time will be provided by scheduling work in quadrants so that no work can be performed under the insulator; a height of approximately 5‘. This work is also performed on scaffold platforms with full planking and tarps. The tarps are for two reasons, to prevent falling objects and to provide a level of Foreign Material Exclusion (FME) during the installation. In addition, barrier tape and tags will be used on the platform to keep workers below accessing the area where overhead work is taking place.
  - There has been extensive review and discussion to evaluate the work planning so as to ensure that this work must proceed as detailed above. Where access can be gained by working above the tubing, this will be done. The current status indicates that there is approximately 25%-30% of the work remaining that will require the alternative head protection noted above.
- The employer believes the above considerations are sufficient as to provide equivalent worker protection given the work environment.

On February 22nd the Chief Compliance Officer met with the employer.

During the meeting the following comments were made:

- The area where the work is being performed is encumbered with feeder tubes.
- Hard hats will only be removed during static work and as a last resort.
- It is possible to provide a spotter when employees are required to remove their hard hats.
- There is no overhead hazard in the area where employees would be required to remove their hard hats.
- To date, there has been one medical aid incident where an employee, working in the feeder cabinet, sustained a cut on the ear. The employee was wearing a hard hat at the time of the incident.
- Some hangers may need to be installed by two employees due to limited access.
- An aviation style leather cap, which would cover the employee’s ears, would be worn when hard hats are removed.

For the Tubing Installation work, employees will be required to remove their hard hat on less than five percent (5%) of the installations. This will occur on the outlet side only and should limit the removal of hard hats to less than twenty (20) times.

With respect to the electrical installation, employees will be required to remove their hard hats when working on a certain number of rows of feeder tubes or sixty percent (60%) of the installations. This will occur on the outlet side only and should limit the removal of hard hats to approximately 230 times. In addition, during the inspection phase of the electrical installation, one person will be required to temporally remove his/her hard hat during the four-day inspection process.

Finally, with respect to the Upper Feeder Installation, there was no indication of the frequency or the duration that employees would be required to remove their hard hat. The need to remove their hard hat would depend on the location of the repair to be made.

Joint Health and Safety Committee members, employee representative for the following trades: electrician, plumber and pipefitter, boilermaker and welders, were asked if they had any objections to removing their hard hat and wearing alternative head protection. All trades represented indicated that they did not have any objections when working in the feeder cabinet area.

Following the meeting, a visit to the feeder cabinet area was organized. The Chief Compliance Officer met with a boilermaker on the east side of the feeder cabinet and an electrician on the west side of the feeder cabinet. These employees explained the tasks they are required to perform. The electrician demonstrated how the hard hat rested against the pipes when the employee tried to reach the upper rows of tube. The use of the hard hat reduced the employee's reach by as much as eight (8) inches, enough that the employee could not reach certain pipes.

Based on the above, a deviation is granted for work to be performed on the top three rows of tubes provided that the following conditions are adhered to:

- The aviation style leather cap used by the employees covers the forehead and ears,
- Any sharp corner where an employee could get cut shall be covered with softeners, and
- No work shall be carried-out overhead while the employees have their hard hats removed.

By copy of this letter, the Chief Compliance Officer has advised WorkSafeNB staff of the decision.

Yours truly,

Chief Compliance Officer