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November 5, 2007

"The Employer"

The Chief Compliance Officer is writing in response to the employer's email dated May 17, 2006 requesting a deviation from Sections 263(1)(a)(b)(c)(d)(e) and 263(3)(a)(i) of the General Regulation 91-191 that states:

263(1) Where an employee is about to enter into a confined space, an employer shall appoint a competent person to verify by tests that

- (a) the concentration of airborne chemical agents or airborne dust in the confined space is not hazardous to the health or safety of the employee,
- (b) the concentration of an airborne chemical agent or mixture of chemical agents or airborne dust in the confined space does not exceed 50% of its lower explosive limit,
- (c) the level of physical agents in the confined space is not hazardous to the health or safety of the employee,
- (d) the percentage of oxygen in the atmosphere in the confined space is not less than 19.5% by volume and not more than 23% by volume,
- (e) the concentration, level or percentage referred to in paragraphs (a) to (d) is able to be maintained during the period of proposed occupancy of the confined space by the employee,

263(3) The competent person referred to in subsection (1) shall in a written report

- (a) set out
 - (i) the results of the tests made under subsection (1),

The employer's request is in regard to internal maintenance of concrete ready-mix truck drums. In the employer's email of August 24, 2007 the employer provides the Chief Compliance Officer with further documentation to support the employer's request.

The employer indicates, in the employer's email of May 17, 2006, that during the regular course of the ready-mix delivery operation there is a gradual build-up of product on the inside of the drums that has to be periodically chipped away and removed. The employer provided the following factors for the Chief Compliance Officer's consideration:

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1. *Mechanical ventilation is provided for all work inside ready-mix drums. This removes the atmospheric contaminants (dust) from the ambient atmosphere. Note that the ventilation flows through the drum from the lower hatch to the upper opening.*
2. *The employer has conducted tests in various operational situations for levels of concrete dust and respirable crystalline silica and are confident that levels of same in the ready-mix drum maintenance application are normally within the applicable threshold limits.*
3. *Considering that #2 above is not continuously monitored, entrants wear appropriate respirators for which they are trained and fit-tested. This also provides escape protection in the contingency of failure of the mechanical ventilation.*
4. *Considering that this work is not conducted in extremes of temperature, the only physical agent affecting this work is noise, for which the entrants wear appropriate protection.*
5. *The employer has conducted countless tests over the years and all have verified that levels of oxygen, carbon dioxide, and carbon monoxide were at normal atmospheric levels.*
6. *Concrete dust is not explosive, thus there is no applicable LEL.*

The employer stated that the employer was in the process of reviewing the employer's ready-mix drum maintenance procedures and had identified the hazards and appropriate controls for this work. The employer has enclosed a draft Safe Work Procedures, providing the Chief Compliance Officer with an overview of this maintenance operation.

The deviation the employer requested is that the employer be exempted from the requirements for atmospheric testing for purposes of ready-mix drum internal maintenance based on past experience that strongly supported the position that the atmospheric conditions found in past testing would not vary significantly in future operations.

Following the meeting at the owner's premises on July 6, 2006 to review the application and to observe the environment inside a ready-mix drum, the Chief Compliance Officer has requested the following information:

1. Air tests (respirable crystalline silica) to be conducted
2. Noise level tests to be conducted
3. APRMCA JSA as discussed

The employer has enclosed the following for the Chief Compliance Officer's review:

1. Safe Work Procedure *Interior Concrete Drum Maintenance and Repair*. The employer indicates that this is the most recent draft and has been developed through review of other similar procedures and in consultation with ready-mix workers and supervision.
2. Respirable Silica Analysis by RPC of a sample taken November 17, 2006. The employer also has indicated that although the test was conducted under realistic representative conditions and the results indicate exposure levels at less than the recommended TLV (<0.022 mg/m³ vs TLV of 0.025 mg/m³), the employer cannot be certain that, from time to time, these levels could not be exceeded. As such, the procedure calls for use of a full-face respirator with a P-100 filter. Other samples were taken but not analyzed because the workers had used water spray to control dust levels and the results would likely be less than the sample provided.

3. Noise Level Testing Results taken on July 13, 2006. These results (114 dBA-123dBA) indicate that double hearing protection is required for this activity. Although not consistently followed, workers often trade off working inside and outside the drum. This practice reduces exposures and time-weighted averages.
4. Procedure/JSA developed in 2001 by Atlantic Provinces Ready Mix Concrete Association in association with Nova Scotia Construction Safety Association. The employer has indicated that this document excludes the requirement for atmospheric testing.

In addition, the employer has verbally reported that the task takes four (4) hours on average to complete.

Based on the information the employer has provided, the Chief Compliance Officer is prepared to grant a partial deviation from the requirements of Sections 263 (1) a-e and 263 (3) a. Outlined below is the rationale for the Chief Compliance Officer's decision:

1. The procedure (*Interior Concrete Drum Maintenance and Repair*) the employer has provided appears to address the requirements for safe work by persons entering the drum (i.e. training, PPE, lockout, ventilation), the requirements for a Stand-by person trained in first aid and CPR, and the requirements for rescue personnel in the event a rescue is required. As required by Section 266 (1) (f) of the General regulation 91-191. The Chief Compliance Officer trusts that the rescue personnel would be located in the immediate vicinity of the work being carried to ensure a prompt and successful rescue should the need arise. The Chief Compliance Officer has attached a copy of a WHSCC legal interpretation on "immediate vicinity".
2. Regarding the requirements to test for silica dust, based on past testing that have demonstrated that the concentration of silica dust does not vary significantly, the Chief Compliance Officer accepts that provided that there are no significant changes in work practices and conditions, testing for silica dust would not be required every time workers enter the drum to carry out the assigned work (removing concrete). Also, the respiratory protective device (full-face piece respirator with P-100) filters provided to workers carrying out the work will provide sufficient protect from over exposure to silica dust provided that it is accompanied with an effective Respiratory Protection Program as required by the Regulations.
3. Regarding the requirements to test for explosion hazards (LEL), based on the information the employer has provided the Chief Compliance Officer accepts that there likely does not exist an explosion hazard due to excessive airborne concentrations of cement dust. As result, a deviation from Section 263 (1) (b) is granted.
4. Regarding the requirements to test for noise, based on past testing that have demonstrated that the noise levels do not vary significantly and that noise is likely the only physical agent encountered while carrying out such work, the Chief Compliance Officer accepts that provided that there are no significant changes in work practices and conditions, testing for noise would not be required every time workers enter the drum to carry out the assigned work (removing concrete) and therefore a deviation from Section 263 (1) (c) is granted. Also, the recommendation that workers wear double hearing protection (ear plugs and ear muffs) would provide to workers carrying out the work sufficient protect from over exposure to noise provided that it is accompanied with an effective noise control program as required by the Regulation. In addition, as outlined in the CSA Standard Z94.2 Hearing Protectors Occupational Health and Safety (Appendix A-see table below), which is currently sited in the General Regulation 91-191 (Section 48), workers exposed to noise levels greater then 110dBA should have their exposure to such levels limited. The duration of exposure should be determined by the employer. Consultation with an outside expert may be required if the employer does not have the expertise to decide on an appropriate job rotation.

**Taken from CSA Standard Z94.2-94 Hearing Protectors
Table A1
Selection of Hearing Protectors**

Maximum equivalent noise level, dBA	Recommended class of hearing protector
Leq less than 85 dBA Leq up to 89 dBA	No protection required Class C
Leq up to 95 dBA	Class B
Leq up to 105 dBA	Class A
Leq up to 110 dBA	Class A plug + Class A or Class B muff
Leq more than 110 dBA	Class A plug + Class A or Class B muff and limited exposure

Note: The values in this Table include a nominal 5-10 dB derating factor to account partially for differences between laboratory-rated and observed real-world performance of hearing protectors.

- Regarding the requirements to test to oxygen, carbon monoxide and carbon dioxide, the Chief Compliance Officer accepts that testing for carbon dioxide may not be required (excessive exposure to carbon dioxide is not an inherent danger of the work being carried out) and as result, a deviation from Section 263 (1) (a) is granted for testing of carbon dioxide. However, the Chief Compliance Officer believes that testing for Oxygen and Carbon Monoxide should be conducted prior to entry into the drum as the Chief Compliance Officer is not satisfied that no hazard exists for both of these substances prior to entry. As the employer is aware, a competent person using a properly calibrated direct reading instrument can easily conduct these tests. As a result, a deviation from Section 263 (1) (a) is not granted for the testing of Carbon Monoxide and a deviation from Section 263 (1) (d) is not granted for the testing of Oxygen.

Finally, as testing for oxygen and carbon Monoxide is required prior to entry and on-going while the work is being carried out, a deviation from Section 263 (1) (e) and 263 (3) (a) (i) is not granted for oxygen and carbon monoxide.

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

Yours truly,

Chief Compliance Officer