

**WorkSafe Services**

PO Box 160  
Saint John NB E2L 3X9  
Phone 506 632-2200  
Toll free (Claims) 1 800 222-9775  
N.E. Regional Office 1 800 561-2524  
Web www.whscc.nb.ca

**Services de travail sécuritaire**

Case postale 160  
Saint John NB E2L 3X9  
Téléphone 506 632-2200  
Sans frais (Réclamations) 1 800 222-9775  
Bureau de la Région du N.-E. 1 800 561-2524  
Web www.whscc.nb.ca



October 2, 2006

"The Employer"

The Chief Compliance Officer is writing in response to the employer's email dated September 15, 2006 requesting a deviation from Section 278(1) of the General Regulation 91-191 under the *Occupational Health and Safety Act*. More specifically, what the employer is requesting is a deviation from Section 278(1) to enable hot tapping and related welding work at the employer's premises.

Section 278(1) of Regulation 91-191 requires that flammable and explosive substances be drained from the containers before heat is applied to the container. In addition, Section 279(1)(b) states that "*An employer shall ensure that welding, cutting, burning or soldering operation is not undertaken on a container or pipe ... containing ... explosive and flammable substances*".

To support the employer's request, the employer has provided a Design Work Sheet that indicates the following:

#### Justification

1" lines that are thermal relief lines connect directly to tank outlet are below ASME B31.1 Code and must be replaced. An environmental spill may result. It is not practical to completely drain these lines. The repair can be accomplished safely without personnel risk.

#### Technical Background

Pre-inspection UT to verify wall thickness is above 0.25" on all main nozzles complete.

Safe Hot Tapping Practices in the Petroleum and Petrochemical Industry reviewed.

Job analysis flow sheet determined this method of repair.

Burn through prevention mitigated by using 3/32 1718 rod.

Piping P1 to P1 weld, min wall to be 0.25" to be able to weld hot; 6.2.

Two 6:sch 40 piping – wall is 0.280; one 14" Sch 40 piping wall is .428"; three 16" sch 40 piping wall is 0.500; per Crane Technical paper.

The employer's Welding procedure to be used in.

Low – hydrogen E7018 3/32 electrode

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Post inspection of all welds is required.

Welding with qualified welder.

### Safety Requirements

Flow in all pipe lines

Nomax Coveralls and PPE on workers

Fire blankets below and around piping and at least two fire extinguishers

Fire Monitors poised

Communication with Control Room

Hot work permit

Tail Board Form completed

### Installation of new 1" piping off main lines

1. Pre fabricate six spool pieces made of sockolet 1", a 3" nipple and an approved ball valve with metal seats and locking handle, API specification.
2. PT or UT inspection of welds on spool pieces.
3. As per operational procedure; "ensure flow is occurring in pipe being welded", weld the sockolet to the pipe per approved welding procedure above.
4. Inspect this weld via UT or PT.
5. Continue until all sockolets are installed.
6. Drain the bunker Tank.
7. Remove the existing 1" thermal relief valve and line, cold cut at the main line, unscrew RV.
8. Once the existing 1" pipe is cut drill out with a 7/16 drill and tap with ¼-18 NPT and install a pipe plug with Teflon paste.
9. Install the balance of piping for the associated spool piece with proper isolations to the relief valve.
10. Make sure each relief valve is installed correctly and seal welded around threaded area after connections are made.
11. Inspect welds via UT or PT.
12. As per operational procedure; "ensure flow is occurring in pipe being welded", weld the pipe cap to the lines that were plugged; per approved welding procedure above.
13. Inspect welds on Capt per PT or UT.

In addition, the Acting Safety Officer indicated to the Chief Compliance Officer during the telephone conversation on September 22<sup>nd</sup> that a qualified welder F4-Licence issued by Technical Inspection Services Branch-Province of New Brunswick was to carry out the work described above. According Technical Inspection Services Branch welders who possess an F4 licence are qualified to carry out safely the work described above.

As a result of the information provided, and as confirmed in the Chief Compliance Officer's September 22<sup>nd</sup> telephone conversation with the employer, a deviation from Section 278(1) of Regulation 91-191 under the *Occupational Health & Safety Act* is granted for welding on the relief valve line Tank with the following conditions, some of which the employer has provided for in the employer's procedure:

1. The Health & Safety Staff must take part in the planning and execution of hot tapping. It may also be appropriate to involve the Joint Health & Safety Committee as well.
2. A safe and easy access and egress must be provided from the work location for the hot tapping crew, including an alternate means for emergency evacuation.
3. Staff performing the hot tapping operation must be competent in all of the procedures involved in the process, including emergency and evacuation procedures.
4. The equipment and material involved in the process must meet the appropriate safety codes and standards including those outlined in the API Recommended Practice.
5. The MSDS's for the pipe/tank contents including temperatures and pressures of the vessels to be hot tapped must be reviewed with the staff involved in the operation.
6. Appropriate protective clothing must be provided and worn by the staff performing the operation.
7. A means of communication must be established between the hot tapping crew and the emergency response staff.
8. Fire watch and extinguishing equipment must be available in the work area.
9. A means of shutting off power locally must be available.
10. Personnel working in the areas of hot tapping must be notified of the type of work being undertaken and advised of the appropriate emergency procedures. The immediate area must also be cordoned off.
11. Finally, the employer is to advise the Chief Compliance Officer when the hot tapping operation is to take place.

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

Regards,

Chief Compliance Officer