

Hi Kim,

Here are some comments for consideration. Most of my concerns are regarding references to CSA standards. I am involved with CSA; attend meetings regularly, volunteer for working groups and submit comments and recommendations on a regular basis. The mandate of CSA is to establish a minimum standard and many of the clauses pertain to inland construction. CSA standards may be altered or amended at any time and many of the CSA offshore clauses have been directly paraphrased from HSE or IMCA. The CSA guidance framework does not guarantee what is written as a CSA standard today will continue in subsequent editions. Their minimum standard ideology directly conflicts with the expectation for contractors to adopt and employ best industry practise. Alternatively IMCA guidance and standards strive to promote best industry practise and are developed for offshore operations. IMCA provides detailed guidance specific to the offshore industry along with comprehensive accident reporting and updating of safety flashes. Many companies currently are IMCA members and rely on this robust system.

Comments:

“Nitrox” means a breathing mixture of nitrogen and oxygen.

“Nitrox” (Oxygen Enriched Air/OEA) is a compressed breathing dive mix consisting of nitrogen and oxygen with oxygen concentrations greater than 22%.

477. In planning the dive activities, the Dive Contractor must conform to the time limits for saturation exposure limits outlined in CSA Z275.2 *Occupational Safety Code for Diving Operations*.

CSA 275.2 (9.4.10.1 General) is the standard referenced. This standard paraphrases the HSE document Diving Information Sheet No. 7 (rev1). It is even given as a link within the CSA standard. It seems onerous for a contractor to have to join a Standards association to view a standard they may have been legislated to follow for years. (See below taken from CSA 275.2-15). CSA offers no unique Canadian guidance regarding Bell run times and as stated earlier this standard can be amended at anytime. Drink breaks for divers should be legislated in the normal course of an 8 hour bell run.

1. iii) Times from HSE Diving Information Sheet No. 7 (<http://www.hse.gov.uk/pUbns/dvis7.pdf>).

486 2) Notwithstanding the above, for saturation programs, a minimum of two dive supervisors must be on shift at all times during active diving activities. In situations where breaks are required, a minimum one supervisor and one additional competent person shall be in dive control at all times.

Suggested change (for saturation programs) to all diving programs. This change would reflect the intent of this document to promote best industry practise. Many Air/Nitrox operations also involve complex tasks with Simops, SurDo2, Golden Gate diving, Vessel & Crane movements etc. The safety of an Air/Nitrox diver is no less important than a Saturation diver. If a campaign should only require intermittent diving with long periods of rest between short dives it would not be unreasonable for a contractor to request a variance for the specific campaign however such circumstances would be rare.

489. Each position in the dive team, and any ROV pilot, where ROVs are deployed in the diving operation, must conform to the competencies outlined in CSA Z275.4 *Competency Standard for Diving, Hyperbaric Chambers and Remotely Operated Vehicle Operations*.

This clause seems redundant, clauses 490 - 492 capture basic certification responsibilities and have measures in place to ensure a certification standard would meet the approval of the Petroleum boards CSO. The CSA "Competency" standard is a document outlining the requirements for entry level certification. Offshore regulations originally outlined the requirements from a Cat 1 diver up to DSS. Dive Schools and the CSA have over time allowed amendments to the Offshore Regulatory training requirements. These changes have helped Dive Schools to facilitate approx. 17 certification categories that are unrelated to the offshore; and it is unclear if the Petroleum boards were made aware of or approved any reductions to diver training. The basic certification standard for diving personnel starting at Cat 1 should remain within the control of the Petroleum boards and its accredited Canadian certifying agency as per the existing offshore regulations. CSA and dive schools should not have the ability to amend or reduce the requirements for certification or (Competency) without the consent and approval of the boards. International organizations also have existing MOU's with the accredited Canadian certifying agency, these should be respected and direct communication regarding amendments to training curriculum conveyed. Presently CSA can change their standards at anytime without the need for Government, Petroleum Boards or accredited certifying agency approval. The CSA Competency 275.4 standard also has many discrepancies that are inconsistent with current industry practice. I will provide two examples: from CSA 275.4:

CSA 275.4-31 Oxygen-Enriched-Air diving supervisor (both scuba and surface-supplied). Clause (b) requires the diving supervisor to hold a diving certification in the category being supervised. Many supervisors do not hold dive medicals nor dive any longer this clause does not reflect an industry standard.

CSA 275.4-23.9 Practical Field Experience for ALST: it is required that an ALST hold a Bell Divers Certificate. Once again this does not reflect an industry standard an ALST is a surface oriented position why would a Bell Divers certificate be required?

I have worked with Canadian divers both nationally and internationally. Many of our divers are career divers, highly skilled and extensively trained some of the best in the industry. They are highly mobile and many may jump from Saturation to Air/Nitrox inland construction or salvage to Supervising to being a DSS. They should not have artificial barriers imposed upon their certifications and competencies.

498. The Dive Contractor shall ensure a means exists that permits a diver's location to be constantly known in the water.

This clause requires clarification; is it being suggested diver locator beacon's and ancillary equipment for surface supplied Air/Nitrox operations are required?

513. A breathing mixture supply system used for a dive must be appropriate for the depth and circumstances of the dives, but at minimum, any calculations for diver gas consumption shall be set no lower than 42.5L per minute.

Another clarification question. A breathing consumption rate of 42.5 L/min is usually associated as an emergency or Bail-out gas consumption rate. Would an umbilical excursion limit be associated with this clause. Industry standard suggests 1 minute of bail-out for every 10 meters of umbilical excursion.

The Norsok: Bail-out standard requires: The bail-out system should in general have sufficient capacity to allow the diver to reach a place of safety. As a minimum the bail-out system shall provide the diver with

gas for 10 min based on an average consumption of 62,5 l/min, correlated to the ambient pressure and temperature of 37 °C (see NORSOK U-101).

IMCA breathing rates suggest: Using open circuit equipment the value varies between 20 to 60 litres (0.7 to 2.1 cu ft) per minute depending on the type of work. A mean value of 35 litres (1.25 cu ft)/minute can be assumed for normal work. Using reclamation systems a mean value of 5 litres (0.18 cu ft)/minute can be assumed. When breathing in an emergency the diver's consumption will increase and it is necessary to use an elevated value. A mean value of 40 litres (1.5 cu ft)/minute can be assumed for an emergency scenario breathing rate.

The 42.5 l/min breathing rate for Bail-out consumption is industry standard however this stand alone breathing rate may impact the total amount of open circuit gas obligations required for Surface Supply operations.

515 – 4.) A means of analyzing the divers breathing mixture must be available at the last point on the dive panel prior to being supplied to the divers. At a minimum the breathing mixture must be constantly analyzed for oxygen and carbon dioxide content. The analyzers must have an audible high and low level alarm function.

Another clarification question is the Carbon Dioxide monitoring only required on reclaim systems and would Carbon Monoxide monitoring be required if H.P. or L.P. compressors are utilized?

517 a) A wet bell with a secondary system for deploying the standby diver,

Suggested concept to be captured: (Not sure why Basket was removed)

Wet bells /Baskets must be designed to carry at least two divers safely, have internal handholds and a gate/bar to prevent divers from accidentally falling out. A method of preventing the wet bells/basket from spinning or tipping is to be included. All associated rigging, winches, including secondary recovery winches are to be approved for "Man Riding". Should the primary winch fail there must be a secondary system to prevent the wet bell/basket falling to depth; this is normally a clump weight system which is positioned as close as is safe to the Wet Bell/Basket depth and which is capable of acting as an alternative means of recovery. The Wet Bell/Basket will have sufficient on board gas with associated plumbing to supply the diver/s a safe environment and accessibility to the onboard gas in the event of an emergency.

I will provide further documentation for consideration regarding diver certification in a follow up email for your working group. If any of the comments are unclear as to their intent please feel free to contact me regarding a more detailed explanation. You may not have been requesting comments at this time however as I will only be attending the upcoming meeting by telephone my intent was to share some concerns.

Kind Regards
David Prokipchuk
416 806-8395
prok@hotmail.com