

**AMENDMENTS FOR PART 23: OIL AND GAS
IN THE OCCUPATIONAL HEALTH AND SAFETY REGULATION**

GENERAL REQUIREMENTS

- Handling pipe 23.18**
- (1) Pipes or tubular goods must be restrained from uncontrolled movement.
 - (2) Deck pins used to restrain pipes must
 - (a) be at least 45 cm (18 in) high, and extend beyond the centre line of the pipe closest to the pins, or
 - (b) if the pipe is tiered, extend one pipe diameter above the pipe closest to the pins.
 - (3) Deck pins are not required if specialized dunnage is used.
 - (4) Pipes or tubular goods must be adequately secured before restraining devices are removed.
 - (5) While pipe is being loaded, unloaded or transferred, workers must not be on top of an unsecured load, between the load and the pipe racks or tubs, or in any other area made hazardous by potential pipe movement.
 - (6) When pipe is being transferred between pipe racks, catwalks, or trucks, temporary supports or skids must be constructed, placed and anchored so that they will support the load placed upon them.
 - (7) When transferring drill collars, tubular goods or other similar materials which are not provided with shoulders, pick up subs or other appropriate pipe handling equipment must be used.
 - (8) A nubbin must not be used to pick up drill collars, tubular goods or similar materials unless the nubbin is equipped with a wire rope safety line and swivel for attachment to the elevator bails.
 - (9) A trailer used as a pipe rack during drilling, servicing or pipe salvaging must have a guard, along the full length of both sides of the trailer, designed and constructed to ensure that when a pipe is hoisted into the derrick, the lower end of the pipe will not roll off the trailer.
 - (10) ~~Pipe loading, unloading and transferring operations must be undertaken only from the pipe ends.~~
 - (11) Pipes must be loaded on or unloaded from a truck one layer at a time.
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Explanatory Note:

Section 23.18(10) was a prescriptive requirement that had been in place for many decades. It mandates that pipe loading, unloading and transferring operations must be undertaken only from the pipe ends. The current industry practice for these operations is to use mobile equipment with a “pipe clamp” that grabs the pipe approximately at the midpoint. This provides a safe way to load, unload and transfer pipe, and has the advantage of not requiring crew to be working at heights on transport trucks and on pipe racks to attach and remove rigging at the pipe ends. Typically the injuries arising from such rigging activity would be from falling or from getting hands, arms or legs crushed by moving pipe sections when working with rigging near the ends of the pipes.

The OHSR should not preclude the use of safer means for handling pipe. Section 23.18(10) has been repealed as it is redundant. This permits the industry to use their established safer methods for handling pipe without being in violation of the OHSR. WorkSafeBC officers had not been enforcing the provisions specified in section 23.18(10) because the newer methods used were considered significantly safer.

GENERAL REQUIREMENTS

- Driver training 23.22** A vehicle driver in the oil and gas industry must, **before operating a vehicle with a gross vehicle weight rating greater than 5 500 kg (12 000 lbs.),**
- (a) be certified in the applicable Enform Canada driver training course acceptable to the Board, or**
 - (b) have completed driver training providing skills and knowledge for safe driving equivalent to or better than those required by paragraph (a).**
- ~~(a) before operating a vehicle with a gross vehicle weight (GVW) rating greater than 5 500 kg (12,000 lbs.) be certified in the Petroleum Industry Training Service (PITS), General Oilfield Driver Improvement Course (GODI) or other appropriate training, and~~
- ~~(b) before operating a vehicle with a GVW rating greater than 15 000 kg (33,000 lbs.) be certified in the Petroleum Industry Training Service, Heavy Hauler Course or other appropriate training.~~
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Explanatory Note:

Section 23.22 has been updated due to changes in the oil and gas sector. In 2005, the Petroleum Industry Training Service (PITS) became part of Enform Canada, and section 23.22 now reflects this change.

Enform Canada is the training, certification and health and safety services organization established by and for the upstream petroleum industry. It was created in 2005 by the merger of PITS and the Canadian Petroleum Safety Council.

A certification for driver training from PITS or Enform is valid for three years. A person who was certified under the PITS driver training program is considered to have driver training equal to Enform driver training until the expiration of their PITS certification. This will not likely be an issue as by the time this change to the OHSR comes into force at least three years will have passed since the transformation from PITS to Enform.

Also, the provision has been reworded to reflect that the driver certifications available through Enform will, in the future, cover more than just the “General Oilfield Driver Improvement course” (or “GODI” course) and the “Oilfield Hauler course” (which was previously known as the “Heavy Haulers course”.) Enform is developing certification programs for other specialized vehicles, such as a “Bulk Haulers course” that is applicable to drivers of tanker trucks. The rewording will accommodate the development and recognition of new specific driver training courses from Enform once such courses are determined to be acceptable by WorkSafeBC. WorkSafeBC will publish a guideline listing the Enform driver training courses acceptable to the Board.

Section 23.22(b) allows an employer to provide driver training in a manner other than through the Enform driver training courses, provided the driver training covers at least the skill and knowledge elements of the Enform courses. For vehicle types where there is no applicable Enform driver training course, the employer must ensure completion of driver training that covers at least the skill and knowledge elements of Enform driver training courses acceptable to WorkSafeBC as well as any additional elements necessary to ensure the person driving that vehicle type can do so safely.

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GEOPHYSICAL OPERATIONS

Breakout tongs	23.30	Pipe wrenches used as breakout tongs must be equipped with a suitable guard on the pipe wrench handle.
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Explanatory Note:

Section 23.30 has been repealed.

Breakout tongs are devices used to tighten and loosen connections between the sections of pipe or drill stem used by the drilling rig. Many years ago, the drill rigs used in geophysical operations did not have breakout tongs and pipe wrenches were used to tighten and loosen the connections of the pipe or drill stem. Drills in use today come equipped with breakout tongs and pipe wrenches are no longer used for this task. Section 23.30 was obsolete, and has been repealed.

DRILLING AND SERVICING RIGS

- Emergency escape systems**
- 23.39.1** A drilling or service derrick must have an emergency means of escape from the racking board that complies with section 23.39.2 or 23.39.3.
- Auxiliary escape system 1**
- 23.39.2** (1) Each drilling and servicing derrick must have a specially rigged and securely anchored line as an auxiliary means of escape which
- Emergency escape system 1**
- 23.39.2** A drilling or service derrick must have a specially rigged and securely anchored line as an emergency means of escape that
- (a) provides a ready means of escape from the principal working platform above the drill floor **from the racking board**,
 - (b) consists of a wire rope not less than 13 mm (½ in) diameter,
 - (c) has a length twice the vertical distance between the ground and the point at which it is attached to the derrick,
 - (d) is effectively anchored and able to withstand a load of 13.3 kN (3,000 lbs), and
 - (e) is kept free of obstructions.
- (2) Equipment must not be placed, and vehicles must not pass, under the last 15 m (50 ft) of the escape line.
- (3) A safety buggy of a design acceptable to the Board must be installed and operated on the escape line.
- (4) The safety buggy **required under subsection (3)** must be
- (a) kept at the **racking board** ~~derrick and's principal working platform~~,
 - (b) provided with an effective brake and means to prevent the trolley from coming off the escape line, and
 - (c) inspected by a qualified person at least once a week.
- (5) The escape line must be tensioned so that a ~~worker~~ **person** seated in the safety buggy will touch the ground at a safe distance from the derrick, not less than 6 m (20 ft) from the ground level anchor.
- [Amended by B.C. Reg. 312/2003.]
- Emergency escape system 2**
- 23.39.3** (1) A drilling or service derrick must have an emergency means of escape that
- (a) **is available for use at the racking board whenever a person is working at that level during drilling or well servicing operations,**
 - (b) **is able to simultaneously and safely transport all persons from the racking board level, either individually or as a group, to a location at ground level removed from the source of danger,**
 - (c) **shields the persons using the system from any danger coming from the well bore during the descent or separates the persons using the system from such danger during the descent,**
 - (d) **has a means to keep the persons using the system from falling out of or off of the emergency means of escape during descent, and**

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- (e) has a means, either automatic or manually controlled, to control the rate of descent to a speed that minimizes the risk of injury to the persons using the system when they near ground level.
- (2) The placement of equipment and the movement of vehicles in the area under the emergency means of escape required under subsection (1) must be controlled so as to ensure the emergency means of escape can be safely used.
- (3) The emergency means of escape required under subsection (1) must be inspected and tested in accordance with the manufacturer's instructions
 - (a) each time the derrick is erected, before a person works at the racking board during drilling or well servicing operations, and
 - (b) at least once each month when the rig is being used for drilling or well servicing operations and a person is working at the racking board.
- (4) Each person assigned to work at the racking board during drilling or well servicing operations must
 - (a) have demonstrated proficiency in the use of the type of emergency escape system installed on the rig, and
 - (b) participate in drills and receive retraining as necessary to ensure ongoing proficiency in the use of the escape system installed on the rig.

Explanatory Note:

Section 23.39 was a prescriptive requirement that has been in place for many decades for oil and gas well drilling and service rigs. Equipment meeting this requirement is commonly referred to as a "Geronimo". The Geronimo-style equipment is considered by some industry stakeholders to be primitive and dangerous to use in an emergency. Some consider it too dangerous for workers to use to do practice runs from the racking board as part of training for use of the equipment. Other industry stakeholders feel the Geronimo-style equipment is reasonably safe for use, including for practice runs as part of training, provided the user is given the opportunity to learn to use it properly. Workers have been injured using a Geronimo, both during training and when using the device to escape from the derrick in an emergency. The industry is working to develop alternative escape systems. Some of the alternative systems are of different designs from the Geronimo-style. Some provide for a controlled descent without the occupant needing to activate a brake system.

While the newer systems are considered by some people in the industry to be safer than the Geronimo-style escape systems, use of one of the new systems under the provisions of section 23.39 requires a variance. Section 23.39 has been substantially retained as new section 23.39.2 and a new section 23.39.3 is added to provide an alternative performance-based requirement to accommodate the newer escape system designs. This provides flexibility for a choice of escape systems. The escape systems available to replace the Geronimo are relatively new and have seen limited service in the field. Some industry stakeholders want more time for the new systems to be proven serviceable and for cost to be more clearly established before they consider switching from the Geronimo to an alternative system for escape from the derrick. In the meantime, the proper use of the Geronimo-style device, including the user being secured with a personal fall arresting system to the Geronimo device during use, is considered acceptable practice and will continue to meet the requirements of the OHSR.

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Regarding section 23.39.3(1) (b), on some large drilling rigs there are occasions when two or more people are required to work on the racking board. In these cases, the emergency means of escape must be able to allow all the people at the racking board level to immediately leave the platform in an emergency. This can be achieved by providing a "one person escape system" for each person or by having an escape system that allows the people to leave and travel to ground level as a group.

Regarding section 23.39.3(3), this provision covers inspection and testing of the system, not worker training for use of the system. It specifies the system must be installed and tested in accordance with the manufacturer's instructions each time the rig is set up and prior to a person being required to work at the racking board level during drilling or servicing operations. The system should be initially tested using a test weight rather than having a worker ride the system. Once this initial test has been successfully done, subsequent tests are to be done in accordance with the manufacturer's instructions.

Regarding section 23.39.3(4), it is imperative a person assigned to work at the racking board be proficient in the use of the emergency escape system installed on the derrick. Proficiency means a demonstrated ability to use the system. It is not necessary that the person ride the system installed on the rig to achieve this. The person may have received training including actual use of substantially the same type of system elsewhere, such as at a training facility. Alternatively the system for the rig could be temporarily set up, during rig up, for "low level" practice prior to being installed in its regular position before the start of drilling or servicing operations. Such practice, coupled with regular drills and the occasional practice run on the system would generally be sufficient to ensure proficiency in use of the system.

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DRILLING AND SERVICING RIGS

**Riding
hoisting
equipment**

- 23.51** (1) A worker must not ride the travelling block hook, or elevators, nor slide down any pipe, kelly hose, cable or rope line.
- (2) In an emergency an injured worker may be lowered from the derrick by means of the travelling block or a tigger if the rotary table is stopped, and a qualified worker operates the controls.
- (3) If the hoisting equipment to be used under subsection (2) is not rated by the hoist manufacturer for hoisting personnel, training with the equipment must be done without suspending or supporting a person with the load line of the hoisting equipment.**

Explanatory Note:

Section 23.51(2) permits, in an emergency, for an injured worker to be lowered from the derrick of a drilling or service rig using the travelling block or a “tigger” hoist. The industry does regular training for this type of evacuation of an injured worker, and refers to the process as rig rescue. There was no requirement to limit training with a worker suspended on the hoist to only hoists that are rated for lifting personnel.

Section 23.51(3) establishes a requirement that a hoist that is not rated or certified by the hoist manufacturer for lifting personnel must not be used suspend or support a worker during training for the process of lowering an injured worker. Effective training would include practice using the hoisting equipment to rig and lower a “test weight” that approximates the weight and size of an adult person.

**DRILL STEM TESTING, SWABBING, CEMENTING, WELL SERVICING AND
STIMULATION**

**Snubbing
operations**

23.64.1

**A snubbing operation must be carried out in accordance with
recognized industry safe work practices.**

Explanatory Note:

Snubbing is an upstream petroleum industry operation using specialized equipment and qualified people to control well pressure and the movement of jointed tubulars (pipe) and tools in or out of a well bore using snubbing equipment.

During the operating life of an oil or gas well, it is occasionally necessary to “rework” the well to enhance, maintain or continue the production of hydrocarbons. This process frequently requires the removal and cleaning, or replacement, of tubing (piping) or other apparatus in the well bore. Where practicable, the well will be “temporarily killed” by filling the well bore with high density fluids, doing the necessary reworking, and then removing the high density fluids and bringing the well back into production. However, sometimes the conditions in the well and reservoir do not allow the temporary killing of the well as the high density fluids may damage the hydrocarbon bearing formation and render the well no longer productive. Snubbing is a process that allows the reworking of a “live well”, and may even involve the continued production of hydrocarbon from the well during the reworking process. Snubbing is being done more frequently in BC’s oil and gas production sector. Snubbing is a specialized operation due to the potential for the release of hydrocarbons, which means a potential for a fire or explosion, or exposure to an atmosphere which is oxygen deficient or contains toxic gases (such as hydrogen sulfide) making the atmosphere immediately dangerous to life and health.

The oil and gas industry in western Canada has developed and published an “industry recommended practice” (IRP) for safe snubbing operations, Industry Recommended Practice (IRP) Volume 15-2007 Snubbing Operations. WorkSafeBC was a participant and contributor to the development of this IRP. The Enform IRP is not being specifically adopted or referenced in the OHSR as the industry stakeholders were not in agreement with such adoption.