SUBMISSION - on the proposed Plant, Structures and Working at heights regulatory reform

Submitted by the Forest Industry Safety Council (FISC) – 4 October 2019

About FISC

FISC was formally constituted in 2015 following the Independent Forestry Safety Review (IFSR) and is a pan-industry body with the mandate to work across the full plantation forestry sector, representing one voice in health and safety, with a focus on leading harm prevention. Its key focus areas include;

- Improving health & safety leadership capability
- Promoting and supporting worker engagement
- Improving understanding, assessment and control of risk, including health risks
- Sharing information and safety resources through the www.safetree.nz website
- Improving competency and standards though business and task certification
- Helping the sector adapt to the Health and Safety at Work Act 2015.

FISC has an independent Chair and a Council made up of all key sector stakeholder groups including workers, contractors, forest managers, forest owners, farm forestry, government agencies, union and others. A full time National Safety Director leads the work supported by an Operations Advisory Group and various Technical Action Groups

Funding for FISC currently comes from ACC, WorkSafe and the Forest Growers Levy Trust (FGLT) with a considerable amount of voluntary effort from many individuals supported by their companies and sector groups.

Industry Background

The New Zealand forestry industry directly employs approximately 8000 people. It has an estimated 1.7million ha of plantation forest [NEFD 2016]. A record 35.4 million m3 of timber was harvested in 2018, a 10% increase on the previous year and 85% increase over the last decade.

The forest industry's contribution to New Zealand's GDP is $3.55 billion; $1.39b from forestry and logging and $2.16b from downstream activity. [NZIER March 2017].

The industry's serious injury rate has steadily declined over the last twenty years (whether measured in raw numbers, as a ratio to harvest volume or as a ratio to sector employment). Within harvesting the injury rate has halved over the past decade [source IRIS]. In the last 6 years, injuries resulting in more than a week off work have declined 20%. [Worksafe Data Centre]. The dramatic improvement can, in part, be attributed to increased mechanisation – that is replacing high-risk manual work with lower risk mechanical systems such as grapple extraction and winch assisted harvesting systems.

Our submission

This submission has been prepared by FISC, the Forestry Contractors Association, the NZ Forest Owners Association and the NZ Farm Forestry Association.

FISC's submission is focused on the impacts on the forestry sector, that is tree growing and harvesting activities along with associated operations which include road engineering and log transport. We have not commented on the sawmilling and wood processing sector.

In preparing this submission the question used to focus discussion and formation of an industry position has been;

Is the time, cost and on-going compliance with the proposed regulation going to make a statistically significant reduction in plant, working at height and excavation related accidents and associated loss?

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Disclaimer,

This submission has been prepared by the FISC Plant and Structures regulatory reform Task Action Group (TAG). The group canvased for opinions via industry publications and sought the views of a representative sample of manufacturers, contractors, engineers, forest owners and contractors. It has been reviewed by both the FISC OAG and Council, and Forest Industry Contractors Assoc (FICA), NZFOA representatives and the NZ Farm Forestry Assoc. TAG representatives and associated parties also met with MBIE officials on 25 Sept to discuss aspects of the consultation document and broader government intentions. This submission is therefore based on a representative view of industry opinions. While every endeavour has been made to present a collective industry view, we must acknowledge that not all parties agree on all points. Every endeavour has been made to present a fair, accurate and proportionate response, FISC does not accept responsibility for any errors or omissions in this submission.

Section 2 - Protections for people working with plant

Because this section overlaps into Section 3 (Mobile Plant) there is an inevitable overlap of comments on forestry mobile plant design, manufacture, supply and operation. Due to the inter-twined nature of Sections 2 and 3 we have chosen to address each question, as set out in the consultation document.

Our submission on High Risk Plant (5) is covered later in the document

Discussion

The forestry industry has very little in the way of fixed plant, the exception being plant located at the occasional workshop, storage facility or tree nursery. However, it does employ a range of hand-held plant (hand and power tools) equipment, mobile plant and mobile plant fittings.

2.1 Should there be a default hierarchy of controls for guarding?

Support – we believe using the General Risk Regulation hierarchy of controls (substitution, isolate, engineering, administrative, PPE) for machine guarding is a sensible approach.

2.2 Should there be a mandatory requirement to ensure appropriate guarding?

Conditional Support – we support a mandatory requirement for appropriate guarding. However, we have reservations about regulation becoming overly prescriptive as there are often a range of solutions to isolate a person from the hazard and reduce or eliminate risk. Codes or good practice guidance are the best location for the detail and providing references to relevant standards.

We support PCBU accountability for the guarding system chosen and for them to implement solutions according to the hierarchy of control proposed in 2.1 and existing standards, codes or guidelines.

Where technology has yet to provide a 100% assurance of protection from a flying object (projectile), the forest industry requires an operator protective structure incorporating ballistic object resistant polycarbonate (front window) to fitted to the machine that is primarily exposed to the risk. Exclusion zones and controls such as site work plans, signage and dephasing of work (eg: separate loadout) are employed around the processing area. Mechanised log processing is a good example of this. Because topography dictates the size and shape of in-forest log processing sites (skids or landings), a degree of flexibility needs to be maintained, hence the need for a range of complementary protection solutions.

2.3 Should record-keeping be required for presence-sensing safeguarding systems?

No comment – very uncommon in forestry. We are aware of some developments in sonar-based and GPS proximity devices. While some show promise we understand some have limitations which could lead to unintended H&S consequences on a worksite.

2.4 Should there be requirements for emergency stop controls, operational controls, and warning devices on plant, and a requirement to ensure proper use of plant?

Conditional Support.
Ensuring emergency stop devices are fit for purpose and there is clarity around operational controls and the ability to prevent accidental activation makes sense. Warning devices deemed necessary, should be fit for purpose, including positioning.

We support training (second bullet - pg 36) but believe the requirements are adequately covered in the General Risk regulations (Sec 9) and additional regulation is not warranted. We therefore **do not support** additional regulation in the training space.

2.5 Should there be requirements for guarding and operational controls to ensure the safety of people cleaning and maintaining plant?

Support - Cleaning and maintenance of plant and attachments is an area requiring continued focus.

2.6 Should there be requirements on PCBUs managing or controlling plant, to address the risks from installing, constructing, commissioning, and decommissioning and dismantling plant?

While MBIE see this as a gap in existing legislation (HSAW Act) we feel Sec 38 and 43 collectively set an adequate framework of expectation on PCBUs and that additional regulation is not warranted. There are also the Management of Risk (30) duties.

2.7 Should there be a requirement to manage the risks of plant that is not in use?

Comment – providing clarity about what "not in use" means would be helpful. Is "not in use" time bound or is it plant that has been decommissioned, put in storage or disabled in some way?

We would consider a piece of stationary mobile plant that is idling is in use. In providing this comment, risks considered included hazardous substance release/spill or release from height of an object (eg: an excavator boom attachment).

In forestry, all mobile plant attachments are lowered to the ground when not in use. Log yarder ropes are lowered overnight/weekend.

2.8 Should there be a requirement to ensure plant is maintained, inspected and tested by a competent person either to the manufacturer's recommendations or otherwise according to a competent person?

Conditional Support – This really hangs on the definition of a **competent person** and level of risk associated with an item of plant.

Neither this consultation document, the HSAW Act or the General Risk and Workplace Management Regulations define a 'competent person'.

Sec 32 [GRWM] requirements relating to Exposure Monitoring includes the following description - *by, or under the supervision of, a competent person who has sufficient knowledge, skills, and experience in the appropriate techniques and procedures, including the interpretation of results.*

The Australian Model Regs include the following definition (chapter 1). *Competent Person: (g) for any other case - a person who has acquired through training, qualification or experience the knowledge and skills to carry out the task.*

The Cranes ACOP definition of a Competent person: *means a person who has acquired, through a combination of training and qualification or experience, the knowledge and skills to perform the task required.*

The Forestry H&S ACOP uses the following definitions;

■ Competency: *a measure of a person's ability to consistently demonstrate the skill required to carry out a job. Competency shall be supported by detailed documented evidence showing:*

› the task being carried out

› the situation the task was being carried out in

› the person who deemed the worker competent and their qualifications and/or experience

› how long the competency assessment took and when it was carried out

› what visual demonstrations were observed

› the process of assessment used to deem the person competent.

■ Competent person: *a person who can consistently demonstrate the skill and knowledge derived from experience and/or training for the type of work in which the person is employed and the approved code the person is required to work under.*

Another option may be to look at a "hierarchy of competence". This would relate to the complexity of the work to be done. For example;

1. Trade (or Unit Standard) qualification
2. CBIP equipment inspector (assuming relevant inspection discipline exists/is anticipated)
3. CPEng (in an appropriate discipline)

Question: Is it MBIE's intention to adopt or develop a **competent person** definition?

This is an important question as it has implications for many of the subjects and proposals raised in this consultation document. We are in **support** of MBIE developing a competence definition for inclusion in proposed regulation.

2.9 Should there be a requirement to ensure health and safety risks from plant are not created or increased by using plant for new purposes or altering it?

Conditional Support - Yes this makes sense. However, we would hope that the desired outcome could be achieved by an amendment to sections 39 & 40 of the Act, clarifying responsibilities when plant is modified, rather than by additional Regulation.

An example of this is introducing winch assist technology onto an excavator or bulldozer. The businesses doing this work today are designing and manufacturing to international standards using the services of a CPEng. As such they are meeting the requirements of the current Act.

2.10 Is it necessary to require a competent person to assess whether or not the proposed new use increases risks to health or safety?

Conditional Support - Yes provided the person assessing has the appropriate competencies. We believe this is happening in practice for forestry plant and in-line with the current duty to eliminate or minimise risks so far as is reasonably practicable.

2.11 – 2.13

No Comment - N/A to forestry -

2.14 Should there be specific requirements for plant that lifts or suspends loads?

This question raises several issues and challenges due to the range of plant employed in forests and the tasks they are engaged in, particularly on harvesting sites.

Discussion:

Over the last twenty years both type and application of forestry mobile plant has changed significantly. So too have the international standards to which this equipment is built. Various regulation, codes and, more lately, gazette notice variations have also sought to clarify requirements. To some extent this has cumulated in a degree of confusion about standards of compliance and inspection.

To summarise;

1999 - PECPR established a rather broad definition of a crane, with some exclusions (Schedule 2). The exclusions are;

- *Earth-moving and forestry equipment, not including such equipment being use as a crane*
- *Side-loading or end-loading transporters used to handle freight containers, **logs**, pallets, rubbish skips, or timber*

With respect to bullet 1, we understand this to mean purpose built harvesting equipment such as yarders, harvesters and standard excavators that are used for earthworks including road and landing construction, log shovelling and general skid work (ie: not as a crane)

2009 - The Crane ACOP crane definition [p.19] is the same as PECPR and would have captured most forestry equipment that raised or lowered loads. The Cranes ACOP scope includes Earthmoving and Forestry equipment. However, because PECPR excluded some earth-moving and forestry equipment this effectively means the equipment specifically excluded in the PECPR regulations is not within the Crane ACOP scope.

2013 (12 Dec), - A Gazette Notice with specific exemptions (with conditions) was published.

Items of mobile plant (including earth-moving equipment), not originally designed as a crane, and used for load-lifting incidental to their principal function are entirely exempt from the Health and Safety in Employment (Pressure Equipment, Cranes, and Passenger Ropeways) Regulations 1999 subject to the following conditions as applicable:
1. Lifting points and equipment used for rigging loads are to be certified by a Chartered Professional Engineer; and
2. in the case of new and used hydraulic excavators with an operating weight of 7 tonne or more, the following additional conditions apply:

a. the equipment is not to be modified to make it operate as a crane other than the provision of a lifting point; and
b. hose burst protection valves are required after 1 January 2016; and
c. operators and ground support personnel are to be adequately trained; and
d. operations are to be carried out in accordance with the Approved Code of Practice for Load-Lifting - Rigging; and
e. the equipment is to have a loading chart available to operators.

2015 (May) - an email document from Richard Steel (Worksafe) to FICA set out to clarify Worksafe's position on hose burst protection *(condition b.)* for forestry lifting equipment. The email reads as follows;

Regulatory requirements for Forestry Mobile Plant

There is a range of plant used in forestry harvesting to lift or carry suspended loads. Some of this equipment meets the definition of a crane under the Health and Safety Pressure Equipment, Cranes, and Passenger Ropeways regulations (PECPR), some of it is specifically excluded from these regulations and some is potentially captured by an exemption of equipment capable of load lifting gazetted by MBIE in 2013.

1. *All forestry equipment that meets the definition of a crane must meet the requirements of PECPR. For example, a self-loader when loading logs onto a truck by means of a truck mounted crane. Key requirements for compliance of this plant with PECPR are:*
    - *Design Verification*
    - *Annual load test, Inspection and Certification by an Equipment Inspector employed by an Inspection Body recognised by WorkSafe.*

   *This type of plant will **not** be required to have hose burst protection fitted by January 2016.*

2. *All forestry harvesting plant not being used as a crane is specifically excluded from the PECPR regulations under schedule 2 of the regulations. Examples of this type of equipment are:*
    - *Harvesting Equipment*
    - *Forwarders*

*This type of plant will **not** be required to have hose burst protection fitted by January 2016.*

3. *Forestry harvesting plant not subject to PECPR regulations and not originally designed as a crane but used for load lifting incidental to its principal function is not subject to the exemption of equipment capable of load-lifting gazetted by MBIE in 2013. For example, excavator (based equipment) with grapple used to lift logs on a skid site*

   *This type of plant will **not** be required to have hose burst protection fitted by January 2016 on the condition that:*

   - *No person shall be within 6 meters of the suspended load as required by section 16 of the Approved Code of Practice for Safety and Health in Forest Operations (ACOP)*
   - *Appropriate statements of performance are developed and implemented for all other instances*
   - *All truck trailers should have a suitable attachment to hold and position the chain eg a "pogo stick" to eliminate the need for the driver to be on the truck deck under or near the grapple*
   - *The truck driver should remain in the pre-determined safety position during the lifting operation before moving in to connect the trailer as required by section 16 of the ACOP.*

2015 (24 Sept) – Cancelled 12 Dec 2013 GN (above)

The following equipment will be exempt from the requirements of the Regulations, with effect from 24 September 2015:
Items of mobile plant (including earth-moving equipment), not originally designed as a crane, and used for load lifting incidental to their principal function are entirely exempt from the Health and Safety in Employment (Pressure Equipment, Cranes, and Passenger Ropeways) Regulations 1999 subject to the following conditions as applicable:
1. Lifting points and equipment used for rigging loads are to be certified by a Chartered Professional Engineer; and
2. in the case of new and used hydraulic excavators with an operating weight of seven tonne or more, the following additional conditions apply:

a. the equipment is not to be modified to make it operate as a crane other than the provision of a lifting point; and

b. the equipment is to have a loading chart available to operators; and

c. operators and ground support personnel are to be adequately trained; and

d. operations are to be carried out in accordance with the Approved Code of Practice for Load-Lifting – Rigging; and

e. except for load-lifting mobile plant used in forestry operations that do not involve the construction of forest roads, hose burst protection valves are required after 1 January 2016.

As you can see the final GN varied somewhat to the outcome of the Inspectors meeting in May of the same year. Those May 2015 Inspector meeting outcomes included a range of safe zone requirements to mitigate risk from a falling object. These are employed in forestry sites all around New Zealand and **we support** their continued use.

Of relevance to this discussion is that MBIE are looking to Australia to adopt components of the Australian Model Regs. We note that the AMR specifically exclude excavators from their definition of a slewing mobile crane.

> ***slewing mobile crane*** means a mobile crane incorporating a boom or jib that can be slewed, but does **not** include:
>
> (a) a front-end loader; or
>
> (b) a backhoe; or
>
> (c) an excavator; or
>
> (d) other earth moving equipment, when configured for crane operation.

So, the question we are inevitably left with is "what is different about NZ"?

Why would NZ regulation not also exclude excavators from the definition of a mobile slewing crane?

Controls:

Regardless of whether an excavator has hose burst protection fitted, the product being handled (in this case a log or logs) can escape from a grapple.

We submit that the most effective way to remove a worker from the risk of being struck by an object being handled by mobile plant is the continued use of a range of safe zone buffers or offsets.

In forestry, without exception, workers and suspended loads are managed using isolation techniques with the safety zone being dependant on the activity and risk. Refer to Sec 11.4 – Safety Zones, 11.8 Mobile Plant Assisted Felling, 13.1 Working on Landings and 16 Loading & Unloading (Approved Code of Practice for H&S in Forestry Operations).

With respect to yarder operations there has been a significant movement towards mechanical grapple extraction. In this case no persons are on the extraction face (other than a spotter from time to time who is stationed at a safe distance (greater than two tree lengths) with a good view of the extraction area). For manual breaking out in cable operations, current systems rely and establishing a breaking out plan for the day's work. The safe retreat distance can be altered according to the terrain and/or risk. The workers closest to the ropes are the ones signalling the movements (there are audible signals prior to all rope movements). As per European developments it is possible that in the future, breaker outs will be the persons controlling yarder movements directly from the hillside. Yarder interlocking systems are not employed (worker location relative to rope position), but systems to track workers in relation to proximity to the extraction corridor are being developed. Log processing, sorting, stacking and loading is a very safe operation. Tens of millions of logs are handled every year, yet the activity has an incredibly low accident rate. We cannot think of a single fatality in the industry in the past decade that has been caused by an event associated with the unintended release of a log or stem suspended by an excavator. There have been two events that might be considered loss of control but in neither case a hose bust protection non-return value would have changed the outcome. Those two events were;

1. *Loading logs onto truck with digger. Deceased leaned out through opening in cab where window had been. In doing so accidently pushed a joystick which caused the boom of the digger to lower rapidly, trapping deceased between the boom and cab of the machine.*

2. *Machine operator was struck by log. He was standing in a position behind trailer as front packet of trailer was being loaded by another operator. He was found 9 m from excavator and inside the loading zone.*

Relief Sought:

We **support** the continued use of CPEng or competent inspectors to carry out periodic inspection of cable yarders due to their complexity, age, variability and load stress.

We are exploring the value of incorporating a CPEng (in an appropriate discipline) or competent inspector inspection of winch assisted harvesting / traction assisted hardware. This would be independent of the equipment owner's responsibility to carry out maintenance and checks in accordance with manufacturer's recommendations.

We submit that the fitting of hose burst protection valves on earth-moving excavators that lift, suspend or process logs will achieve very little, when measured by a reduction in accidents. They may arguably prevent the sudden drop of a trailer when being unloaded and set-up to carry logs (property damage).

We do **support** the safe work practice position set out in the final four bullet points of the Worksafe NZ representative's email (May 2015) described on p.8 above.

We **support** the suggestion that excavators lifting or suspending loads have a loading chart available to operators and that the excavator is fit for purpose (suitable size and capacity).

We **do not support** additional regulation in relation to excavators. We are of the view that actions that must be taken to manage risks associated with working under raised objects under the GRWM Regulations, including application of the prescribed risk management process, are sufficient.

Globally, at present, purpose-built forestry equipment is not classified as plant that lifts or suspends loads and therefore is not subject to specific loading or suspended loads requirements (ie: hose burst protection devices). The majority of this equipment is excavator based. NZ regulation should be following global thinking here.

2.15 Do we need a specific requirement that, when plant is not specifically designed for lifting, it must not cause a greater risk to health and safety? Please consider what extra benefit or impact this would have in addition to what is proposed for all plant (refer to question 2.9) – that if plant is used for a purpose other than which it was designed, a person must ensure it does not have risks to health and safety (as assessed by a competent person).

Covered in 2.14 above and the mobile plant section.

2.16 Are the exemptions for stunt work, acrobatics or theatrical performances appropriate? Is there anything else that should be excluded?

No comment - N/A Forestry

2.17 Should an alternative control method be provided for tree-lopping?

Discussion:
While tree lopping is not defined, we are of the view that Forestry Tree Pruning is not tree lopping. Tree Lopping should be defined and constrained to arboriculture type work.

Relief Sought:
We **request** the inclusion of a definition for Tree Lopping in the proposed regulations and that it specifically excludes forestry tree pruning. Also see Sec 6 – Working at Heights

2.18 Is it necessary to refer in regulations to AS/NZS 1891 for harnesses?

No Comment

2.19 "Plant that lifts or suspends loads" is not defined in the Australian Model Regulations. Should this be defined in our regulations?

Conditional Support – We support defining "Plant that lifts or suspends loads" but not any unjustifiable raising of the bar due of controls that are already in place that have proven effective via historic lack of incidents recorded.

For forestry, the insertion of a table into the Forestry ACOP (perhaps as an appendix) that outlines requirements for specific plant and applications would be the best method to convey the information to PCBUs.

2.20 – 2.21 Industrial Robots

The consideration of additional controls for industrial robots, MBIE needs to proceed with caution.

Discussion:
Our main area of concern at Forest Growers Research Ltd (FGR) is in the designing, manufacturing, supplying, installing and commissioning of new plant and equipment in harvesting and log transport operations. The application of automation and robotics will undoubtedly increase in the forest industry over the next 5-7 years, particularly as the industry and government are co-funding a seven-year $29.3 million Primary Growth Partnership (PGP) programme. This programme, which commenced from 1 January 2019, is aimed at investment in the design, manufacture and commercialisation of new equipment and technology focussing on forestry automation and robotics to achieve significant improvements in worker safety and environmental outcomes and address growing labour shortages in the sector. The review of the regulations that sit under the Health and

Safety at Work Act 2015 should be cognisant of the design and development of remote controlled, teleoperated, autonomous and robotic machinery that will improve worker safety.

We submit that;

- It is likely that unmanned, autonomous or teleoperated machinery may in fact require more sensors (such as inclinometers, accelerometers, cameras, proximity sensors etc.) to maintain safe operation. The key message is safety by design.
- Australian & New Zealand Standards exist that technology developers and manufacturers must comply with when building remote control and teleoperation systems. These cover issues such as safety features, safe zones of operation, automatic stops, latency, loss of reception etc.
- The forestry environment must be noted. In many cases machinery is naturally isolated from indirect workers (not involved in the actual operation) or there are exclusion zones already in place via the ACoP (two tree length rule). Exclusion rules for robotics need to reflect the forestry environment.

We have found that there are already good resources and guidance available for designing and commissioning teleoperated equipment is forestry. Specifically, there is a NZ Standard for remote controlled mining equipment that we have found meets our needs. The Standard uses well established procedures for hazard management that are detailed in other standards.

In short, the key message is set a broad but flexible framework that allows innovation to thrive, while ensuring fail to safe design is promoted and unintended consequences avoided.

2.22 – 2.25

No comment - N/A Forestry at this point in time

2.26 Should PCBUs managing or controlling plant be required to apply the Prescribed Risk Management Process when managing risks from plant?

Conditional Support – subject the points raised earlier in this section and Sec 3 (because mobile plant is considered a subset of plant) we support the application of a single PRMP.

2.27 Would education and guidance on the risk management process alone improve PCBUs' ability to identify and manage risks from plant?

Yes.

While the Act sets out the duty, there is confusion about the 'doing' aspects of applying a risk management process to worksite risks. Education and guidance could also look at alternative risk assessment and monitoring methods that are used.

2.28 Are there any further requirements needed, in addition to the Prescribed Risk Management Process, to specifically manage risks to health from the use of plant?

No

2.29 Based on the proposals in this section on protections for people working with plant, are there any significant costs and/or benefits that will affect you or your organisation?

Refer to 3.23

Section 3 - Protections for people working with mobile plant

For the purposes of this discussion, MBIE's consultation document defines Mobile plant as *"plant that is powered or self-propelled, such as vehicles and equipment, e.g. mobile cranes, bulldozers, quad bikes, elevating work platforms, forklifts, and vehicles such as cars, vans, and trucks used for work".*

3.1 We are proposing to apply the Prescribed Risk Management Process to plant (see Section 2 of the discussion paper). When applying the Prescribed Risk Management Process, should it specify the key risks of mobile plant? (The keys risks from mobile plant are overturning, falling objects, being thrown from the plant, mechanical failure of pressurised elements, and collisions).

Conditional Support with reservations about adding a level of complexity. Our concerns are around balance and ensuring that, when risks are assessed, the risk associated with how the plant is used at the task or job level is the focus, and less so the item of plant in isolation.

We have concerns that if each piece of mobile plant on a site requires an individual risk assessment, in isolation to the task, we may be setting workers up to fail. We agree there is no excuse for operating a piece of plant that is in an unsafe state and that periodic inspection of plant to ensure it remains fit for purpose is important. However, in our experience the mobile plant itself rarely causes an accident – it's the way in which it is operated that is the key contributor.

As such believe a more appropriate approach is to look at the work. What are the potential causes of harm? How significant are the risks (consequence and likelihood)? - then apply suitable controls to mitigate. Invariably this will require a collective examination of the task (environmental factors, the people, the site and the plant/equipment). In forestry there are already restrictions on where plant can and can't operate and operator protection requirements are codified.

3.2 Do you think the Prescribed Risk Management Process should not apply to any of these key risks?

Support the application of the Prescribed Risk Management Process to overturning, falling objects, being thrown from the plant and mechanical failure of pressurised elements

Unless a degree of flexibility is allowed, **Oppose** the application of the Prescribed Risk Management Process to the management of collision risks (specifically in forestry).

Discussion:

Orange flashing lights on mobile plant will not make forestry worksites safer. In many cases there are three (sometimes more) machines carrying out complementary functions in pre-planned work areas where routinely no ground workers are present. These pieces of plant are large and easy to see. The visual pollution created by these strobe-like lights outweighs the benefits and due consideration needs to be paid to the operators working in this type of environment.

Mobile plant on forestry worksites also generate their share of noise. We submit that adding additional noise by mandating track movement alarms will provide little added value in terms of a

warning that the machine is on the move and may even add risk by creating confusion and annoyance for site workers who constantly hear the alarms but who are not in the danger zone.

These items of plant are all diesel powered and sufficiently audible. Adding a higher pitch/frequency noise would serve little more than adding to noise pollution on-site. Yarder movements are planned and have the full focus of a crew. Excavators, harvesters and forwarders (tracked or wheeled) are slow moving (<5kph) machines. Harvesters work in isolation from other workers. Wheeled loaders generally operate in yards or super-skids where ground workers are absent.

There is also the potential to inadvertently create additional risk where items of plant emit different types of warning sound. On top of this ground workers will often be wearing ear-protection because their work involves the use of a chainsaw.

Our understanding is that two different standards could apply [to construction sites]:

- If the alarm is considered as 'auditory warning signals' then ISO 7731 would likely apply, requiring the level of the signal to be 15 dB above the background noise level in the area, not to exceed 112 dB and recommending the alarm to have dominant tones.
- For movement alarms on earth moving equipment, then ISO 9533 would likely apply, requiring the alarm to be at least as loud as the engine under full power.

This is a consider level of additional noise.

We understand that OHS regulations in the other states of Australia are essentially the same as for NSW and only require an effective warning device be incorporated but not that it needs to be an audible alarm. [source: NSW beeper alarm research]

We concede you could make a case that wheeled loaders should have movement sensors on the basis that they are capable of higher speeds and forward view can be obstructed with a suspended (multi log) load in the machine's beak.

Recent Worksafe advice with respect to noise exposure has been along the lines of were noise is of a level that presents a risk of hearing loss to workers, hearing protection is not enough. PCBU's need to be looking further up the PRMP at isolation/engineering controls to reduce noise. PCBU's also have a duty to monitor exposure to noise. We submit that any proposal to increase noise duration or intensity is unacceptable. In addition, while our activities are predominantly rural, we do receive neighbour complaints about noise (machines and yarder talkie-tooters) when working near boundaries.

Controls

In poor light, there is already a regulated requirement for the site to be well lit. Mobile plant used in forestry operations are fitted with and use LED lights for this purpose.

As described in 2.14 above, man/machine interaction is managed using isolation techniques, the safety zone being dependant on the activity and risk. Refer to Sec 11.4 – Safety Zones, 11.8 Mobile Plant Assisted Felling, 13.1 Working on Landings and 16 Loading & Unloading (Approved Code of Practice for H&S in Forestry Operations). We do accept that these controls are administrative. We do not accept the application of orange flashing lights and reversing beepers (engineering controls) will make a material reduction to collision risks.

All visitors to a forestry worksite must be inducted onto the worksite. If the purpose of their visit exposes them to a collision risk, the conflicting work is suspended until such time as one of the tasks is completed or adequate separation is achieved. Most frequently we see this around service agents and fuel deliveries.

Log truck drivers have three forms of safe zone refuge available to them. Refer to 16 Loading & Unloading (Approved Code of Practice for H&S in Forestry Operations) and Log Transport Safety Council (LTSC) Industry Standards. On occasions a harvesting contractor will limit the option to just one (in the cab) due to the risks on that site.

https://logtruck.co.nz/industry-standards/

https://www.environment.nsw.gov.au/resources/noise/beeperalarm.pdf

3.3 Should there be specific requirements for operator protective devices on all mobile plant?

Support operator protective devices on all mobile plant.

Discussion:
The industry has been well served by Operator Protective Structure Code of Practice (1999).

We do have a couple of suggestions to improve its effectiveness.

The Code is in need of review. The forest aspects that require revision include;

(a) Outdated regulatory references *(Clearly define the standards that apply, the use of outdated standards only leads to inconsistency and confusion. Consistently including certifier credentials)*
(b) Table 1B – guidance on protective windscreens (polycarbonate or similar) is required.
(c) Emergency escape hatches *(should be application based and consistency required)*
(d) Multi point operator harness and seatbelts (should also be application based)
(e) Certification plate consistency *(consistency is the biggest issue here and this is very much linked to (a). We require consistency from CPEng with regard to design and certification standards, re-certification processes and the time frames applying to certifications)*
(f) Imported forestry specific OPS
(g) Review (removal) of COPS G3 and a shift of focus to internationally recognised standards. It is a hangover from the days when excavator specific standards were not available. This change would make required standards clear, opens opportunities for local manufacturers in off-shore markets and eliminates the need for time-based re-certification. This would need to be introduced in a reasonable time frame and not be made retrospective. This would also require more discussion and analysis.

https://worksafe.govt.nz/dmsdocument/1679-operator-protective-structures-on-self-propelled-mobile-mechanical-plant

We submit that MBIE support for a revision of and continued use of the OPS Protective Structure Code would be of more value than regulation that sets out to achieve the same outcomes. Design and manufacture to internationally recognised standards should ensure performance requirements are met. The advantage of a Code (either approved or industry managed) is that it can be kept up to date for engineering practices, plant innovation and updated standards.

3.4 Is it appropriate for PCBUs to determine what is a suitable combination of operator protective devices?

Yes - With the assistance of a Code (see 3.3)

3.5 Are there any types of mobile plant that require specific kinds of devices?

Yes - With the assistance of a Code (see 3.3) or Good Practice Guide we would like the following points to be considered.

Winch Assisted Machines (WAM) require specific emergency management devices. These include anchor movement monitors, visual confirmation of rope drum integrity, emergency stop systems, rope tension monitoring, slope monitoring and so forth. Emergency egress (3 types) for tracked machines operating on steep slopes is seen as a base requirement (certainly for new deployments)

It could also be worth looking at automatic fire suppression systems, both from operator, plant and forest asset protection perspectives.

3.6 What other kinds of operator protective devices are appropriate for the mobile plant you use or manage at work?

- Multi-point harness fitted in plant operating on slopes > a specified slope (eg: 18 deg), provided the seat type allows such a device to be safely fitted.
- Means to accurately assess operating slopes if working above 18 degrees (eg: clinometer, machine sensors or slope maps/GPS)
- Windscreen protection from projectiles if operating a Processor (revisit min polycarbonate thickness)

From time to time there has been discussion around whether specific items of mobile plant (rollers and graders) used in road construction and maintenance require Falling Object Protection (FOPS) to prevent branches etc falling into the cab. All machines have ROPS. However, there is a case to say that plant like graders/rollers, which are working on formed roads, are no more at risk than light vehicles or logging trucks travelling in the same roads and as such should not require FOPs. The better control is removing the hazard (road-lining sufficient width) or leaving the site in windy conditions.

3.7 Should there be a requirement to ensure plant does not collide or to ensure warning devices, because of the extra risk of harm?

Not supported

Refer to discussion points in 3.2 above

3.8 Should there be a requirement to ensure an adequate field of vision?

Yes, should be achieved by designing and building cabin structures to appropriate current ISO standards. This would assist with consistency on this matter. The use of the current ISO standards as

the reference would make the requirements transparent for all. We do not support mandatory installation of “adequate devices” to improve the operators’ vision. The wording is far too subjective for regulation.

3.9 Are other requirements needed to manage risks from collisio*n?* (For example, requiring that mobile plant is switched off when operators are not in the cab to avoid it moving unexpectedly).

Not supported

Refer to discussion points in 2.7 and 3.2 above.

Furthermore, mobile plant attachments are lowered to the ground when not in use. All mobile plant has braking systems. Requiring that plant be ‘switched off’ when operators are not in the cab does not necessarily prevent a wheeled vehicle from moving if brakes were not applied properly or fail.

3.10 Should information on traffic management be included approved codes of practice or other guidance?

Support - option 3 “Include traffic management around mobile plant in guidance or approved codes of practice for specific plant or industries”.

We **do not support** Option 1 (AMR) & Option 2 (UK approach).

3.11 Do you agree that passengers should have the same level of protection as operators when on mobile plant? For example, there may be situations where you think it would be safe for passengers to have more or less protection than the operator.

N/a for the majority of mobile plant on a forestry work site as it is single seat, enclosed cabin and not designed for passengers.

Vehicles such as cars, vans, and trucks used for work – passengers are afforded the same level of protection (seatbelts).

ATV use is limited in forestry. They are used for transportation in some operational management activities. They are also used to transport boxes of seedlings for planting (single person operation). Side by sides are increasingly replacing ATV’s and have rollover protection and seatbelts.

3.12 Do you think passengers should be expressly banned unless mobile plant is specifically designed to carry them? If yes, is this general or are there specific examples that should be covered. If not, why?

Support– in the case of ATV’s designed for single person use. If the piece of mobile plant is stationary for training purposes (eg: a log yarder or excavator) than a 2nd person (trainer) must be permissible.

Some purpose-built forestry machines have room in behind the seat for someone to stand. In a benign environment (eg: processing on a skid) this is a good option for training that we've used and would like to continue to use.

3.13 Do you agree with the suggested definition of "mobile plant" (i.e. plant that is provided with some form of self-propulsion that is ordinarily under the direct control of an operator)?

Conditional Support - We believe vehicles used on the public road network and subject to WOF and registration (cars, utes, vans and trucks) should be excluded from the definition of mobile plant. If such vehicles that have modified for use and no longer warranted or registered, they should be included in the definition of mobile plant and subject to associated regulatory requirements.

3.14 If we follow the flexible approach in the Australian Model Regulations, are exemptions for specific types of mobile plant necessary?

No Comment

3.15 If we follow a less flexible approach, for example, field of vision or banning passengers, are there any specific types of mobile plant that should be exempt from any of the requirements?

Discussed in 3.8 & 3.12

3.16 Vehicles less than 700kg are currently exempt from roll-over protection and seatbelt requirements. Are there any vehicles under 700kg that you think should be exempt from the approach in the Australian Model Regulations for mobile plant?

No comment

3.17 Are there any types of mobile plant that require specific types of requirements additional to those discussed already for all mobile plant? Please give examples.

Discussed in 3.5

3.18 – 3.22

N/a for Forestry

3.23 Based on the proposals in this section on protections for people working with mobile plant, are there any significant costs and/or benefits that will affect you or your organisation?

In summary, we submit that MBIE support for the continued use of a revised Operator Protective Structure Code for Self-Propelled Mobile Mechanical Plant ACOP would be of more value than additional regulation that sets out to achieve the same outcomes.

We have an open mind on whether we go this alone or in conjunction with the construction sector but do prefer a Forestry OPS Code. That could be stand alone or incorporated into the existing Forestry H&S in Forestry Operations ACOP. This approach would allow us to move forward on risk-based solutions for mobile plant risks as opposed to on overly prescriptive regulatory approach. This approach would also assist the industry to clarify inspection requirements and standards.

We would have concerns if there were any moves to retrospectively apply any Regulation change. While the industry doesn't have a mobile plant census as such, we estimate there are possibly as many as 3500 items of mobile plant operating in NZ forests. We do know there are approximately 300 yarders and 120 WAMs. The figure of 3500 includes machines used for road and landing construction and maintenance, land preparation and production thinning. But by far the greatest percentage are used in harvesting to fell, extract, process, sort, stack and loadout logs.

Depending on the change, any retrospective change could add significant cost to businesses. A day in the forest auditing and inspecting plant (including costs of travel and follow-up) would be in the order of $1000. The cost of physical changes – well that would depend on the degree of change but clearly could be very expensive.

We should also make the point that mobile plant variability (tracked or wheeled), the task to which the machine is applied, additional support arrangements (winch assisted or not), the operating conditions and an operator's skill set are all factors that influence risk factors (going beyond the piece of plant in isolation). Hence, we feel an industry led solution (by way of a Code) is likely to give the best outcome in terms of communication of requirements, consistency of application, management of risk and flexibility to incorporate new designs and standards.

Again, ball park figures but if 1500 items of plant are earthworks excavators used to stack and load logs and unload trailers then there would be a significant cost to bear if these machines required an annual CPEng Inspection (load test) or Certification by an Equipment Inspector employed by an Inspection Body. For excavators, **we would far prefer** the proposal put forward by Worksafe in 2015 (see 2.14) to apply.

- *No person shall be within 6 meters of the suspended load as required by section 16 of the Approved Code of Practice for Safety and Health in Forest Operations (ACOP)*
- *Appropriate statements of performance are developed and implemented for all other instances*
- *All truck trailers should have a suitable attachment to hold and position the chain eg a "pogo stick" to eliminate the need for the driver to be on the truck deck under or near the grapple*
- *The truck driver should remain in the pre-determined safety position during the lifting operation before moving in to connect the trailer as required by section 16 of the ACOP.*

Section 4 – Designers, Manufacturers, Importers, Suppliers, Installers of Plant or Structures

No comment

Section 5. High-risk Plant

Scope: Our Section 5 submission focuses on the proposal's impacts on the forestry harvesting sector and to a lesser extent tree growing and road engineering operational activity. Log transport is not affected. We have not commented on the sawmilling and wood processing sector.

Discussion
The purpose of this discussion section is to highlight aspects of questions included in the Consultation document that will specifically impact on the forestry industry.

We have chosen to begin this section with a general discussion about concepts and issues then have split our response into two sections. Sec 5.1 looks at the specifics of Winch Assist Machines (WAM) / Traction Aid (TA) plant and Sec 5.2 at cable yarders. We have taken this approach because each has different characteristics and risks.

Australian Model Regulations (AMR) and High-risk plant
The proposed adoption of components of the AMR are of concern to us. These regulations contain a range of risk based mandatory controls for different classes of high-risk plant. These include "*maintenance and inspection requirements, licensing of operators, record keeping and notably, requirements for a plant and equipment register and operator licence register".* We believe adoption and application of these requirements to some forestry plant, should it be classified as high-risk, will have a significant impact on PCBU's without a commensurate reduction in risk or noticeable impact on harm prevention.

Defining High-Risk Plant - firstly and importantly any discussion on proposals in this section must start with a definition of high-risk plant. Without a definition or schedule, what's in or out of scope becomes very subjective. What appears high risk to one person or entity may indeed be low risk to another due to the latter's closer understanding of the risks, design features and applied controls.

The consultation document [p.88 – para 2&3] refers to the AMR high-risk plant characteristics (ie: *"plant that presents a **potential** for serious injury or death to operators and/or users)*. We note that the AMR does not actually provide a definition of high-risk plant. Instead it provides a schedule of plant (Part 1 Schedule 5) requiring registration of items of plant and plant designs.

We note that the AMR high-risk schedule contains no plant commonly operated in NZ forests.

Referring to the previous paragraph, if ***potential*** is a combination of Consequence and Likelihood of an event occurring, it's our belief that the forestry plant, which has been proposed for classification as high-risk in this consultation document, has a high (but not very high or extreme) Consequence and very low Likelihood *for serious injury or death to operators and/or users.* Unlike cranes, which operate in residential or commercial spaces (where failure has the potential to not only impact on the operator but also the public and others property), forestry's risk is contained to the site and in most circumstances the operator. In all cases the operator is protected by a codified protective structure and, with respect to Winch Assisted Machines (WAM), fail to safe features are built into the design.

There are also a range of engineering and administrative controls employed to address risks with plant that currently have a component of CPEng inspection. These include breaking out plans and steep slope operational plans, industry qualifications (NZ Certificates or unit standards) and best

work practices. Engineering controls include emergency stop systems, rope tension monitoring, slope monitoring and so on. Operational standards are also monitored.

The consultation document talks of high-risk plant can have *"catastrophic consequences"* [p.87]. In a risk management sense, Catastrophic consequences are generally accepted as being those with the highest level of Consequence (multiple fatalities and serious injuries) where there is a more than minor Likelihood of occurrence.

In the context of the 'catastrophic consequence' test we believe the forestry industry currently has no plant (fixed or mobile) that should be defined as high-risk plant and thus subject to the proposed design and inspection regulation.

The use of the term CPEng in Q 5.18

MBIE have stated a preference to adopt many of the AMR requirements *with appropriate modifications for the New Zealand context.*

With respect to the NZ context, MBIE have proposed classifying some forestry plant (that currently requires CPEng inspection) as high-risk and apply a regime of regulated controls. This would include yarders (which are currently excluded from PECPR (Schedule 2) but subject to a codified inspection requirements (ACOP p.92) and Winch Assisted Machines (WAM) which are not covered by PECPR, but subject to design and manufacture standards, CPEng inspection on deployment and regular inspection as set out in Operating or Machine manuals and the Worksafe Factsheet.

The consultation document includes the following two statements [p.104].

… the Aust Model Regs include a range of lifting and access equipment that are currently excluded from PECPR Regs" and

… we are also aware that codes or guidance recommend that some items of forestry plant be inspected by CPEng. We suggest that this equipment should be registered as items of plant.

Firstly, with respect to the AMR statement, neither an excavator or harvester (which are part of a WAM harvest system) are included as an item of lifting equipment in the AMR. An excavator is specifically excluded as a type of slewing mobile crane [see p.9 above]. Incorporating them in any new regulation is going beyond the AMR. If we then apply a NZ context lens, if the AMR does not include specialised forestry equipment (ie: log yarders and winch assisted harvest machines), why would the NZ regulator include them given the risk associated with the plant is the same across both jurisdictions and industry accident statistics don't support the high-risk tag?

We believe the inclusion of yarders and winch assisted harvest machines is unwarranted and cannot be substantiated based on the AMR or accident or incident data [see 5.1 below]

Secondly, by suggesting that CPEng inspected plant needs design and item registration (by regulation) is effectively creating three classes of excavator – one that is used for winch assist operations (either as an anchor machine or operating on slopes) and subject to CPEng requirements, those that are purpose-built forestry machines used for felling or processing and conventional excavators that are used for log loading and earthworks.

Finally, when the Forestry ACOP was revised and approved (2012) the future consequences (in terms of Regulation) of the use of the acronym 'CPEng' could not be envisaged. CPEng requirements were included in the Code because the industry acknowledged the need to have appropriate standards in order to self-manage identified risks. We see this as an industry led solution that has and continues to serve us well. With respect to WAM, the Code established a set of requirements around safety critical components [6.5.2] which the industry has diligently followed. Incident data tells us the industry is managing this activity very well and that redefining this plant as high-risk, with associated regulatory requirements, is not warranted.

5.1 Winch Assist / Traction Aid Machines

Further to the point on CPEng inspection, in June 2016 Worksafe NZ released the **Winch-assisted Harvesting on Steep Slopes factsheet**. It provides guidance on compliance with HSAW Act, how ACOP requirements should be seen under the Act and additional guidance to PCBUs on eight aspects of WAM activity. PCBU's have embraced this guidance and incorporated into design, manufacture, operating manuals, training and monitoring of work. The Forest Industry Safety Council (FISC) has recently established a Technical Action Group (TAG) to advance the production of a NZ Steep Slope Harvest BPG which will be based on designer, manufacturer, operator and forest managers experience, practices and guidance. Worksafe has been invited to contribute. Again, we believe this demonstrates further commitment to industry led continual improvement and sound risk management.

This discussion also needs to consider imported plant. To date the majority of WAM plant operating in NZ has been designed and manufactured in NZ. More recently we've seen the arrival of imported plant, principally from Europe and North America. This plant is typically referred to as Traction Aid (TA) and has been designed and built to a range of internationally recognised standards. TA is a working method in which a forest machine is uses a rope to support the machine's own tractive or braking effort by a regulated pulling and/or braking force. This force is kept constant or regulated according to the slip or other traction defined parameters. The supported machine, when stopped, remains stationary on the slope travelled on without any further rope assistance. TA plant manufactured in Europe may incorporate a European Certification (CE) mark. CE marking involves self-certification and registration with a notified body (non-government). The manufacturer must take certain obligatory steps before the product can bear CE marking. These include a conformity assessment, technical file establishment and the completion a declaration. Associated documentation must be made available to authorities on request.

In principle, this process is not too dissimilar to the design and manufacturing processes used in NZ (without the CE mark – NZ is too small to run a similar system). The designing engineer designs to appropriate standards, the manufacturer builds the machine and the plant is subject to verification before deployment. With respect to information supply, Sec 40 & 41 (HSAW Act) places various duties on the supplier and manufacturer. Sec 168 provides powers of entry and inspection should the regulator require or wish to seek additional information.

Note: The TA winch standard ISO 19472 (Machinery for Forestry - Winches - Dimensions, Performance and Safety — Part 2: Traction Aid Winches) is currently under development. Notably it includes a working coefficient for the rope. *This shall be at least two related to the pulling force of the winch.* For example, if the maximum pulling force is 10t, the rope must have a breaking strength of at least 20t.

The System in its Entirety - when it comes to managing risks associated with plant involved in steep slope harvesting it's important to stress the importance of the 'whole system' and not just an item of plant in isolation. For example, successful winch assisted / traction aid harvesting is dependant not only on the specialised anchor machine or winches integrated into or onto a harvester and/or extraction machine but also on the rope(s), fittings, fixtures, controllers, safety devices and operational practices and techniques. Designers and manufacturers are providing training and producing operator manuals and maintenance schedules to support owners and operators of these 'systems'. To date this is being done well in NZ, despite there being no specific high-risk plant regulation.

With respect to winch assisted harvesting, not a single work-related death is attributable to this activity. We are aware of a single serious injury which was initiated by a failure in a winch component on a bulldozer anchor. The injury occurred when the operator made a fight of flight decision and elected to flee the harvester's protective cab as the anchor machine rolled towards his machine.

Australian experiences – A NZ designer and manufacturer of forestry plant that we spoke to, who has sold a number of items of plant into Australia, has said that with respect to the design regulations, on what they have seen and after talking with contractors, it is the general view that the additional regulated requirements in that jurisdiction are thought to be ineffectual, and have added cost with no commensurate safety benefit.

Question: Does MBIE have any data that confirms that AMR design and item of plant registration regulations have contributed to a measurable reduction in harm in Australia?

European experiences – There have not been any legal regulations for using a traction aid winch in Austria. The German testing system KWF has only issued auxiliary guidelines to the users. These say one should not operate steeper than 60% and the machine must be able to stand alone on the slope without rope. They attach great importance to soil conservation. In public tenders, the usable machines are described and controlled. There are no controls in the private sector. So far there have been no known rope support accidents. For this reason, a regulation was not so important. All are now waiting for the ISO standards [source: Ecoforst].

Balance - we believe that any discussion around high-risk plant requires balance. It needs to consider risks associated with how the plant is used (operating practices) and not just the risks posed by plant per se.

We believe the industry has, over the last decade, successfully self-managed risks associated with tethered mobile plant. We are strongly of the view that non-regulated, self-managed processes using competent persons and risk focused inspections achieves the same outcomes that are being sought by proposed regulation.

It is also important to recognise that soundly designed and manufactured mobile plant, in particular WAM / TA harvesting, is proven and is removing a large percentage of high-risk manual work such as manual felling and manual breaking out for cable operations. So, in essence, high-risk manual tasks are being replaced by deployment of **lower risk** specialised harvesting plant and equipment.

Inspection Bodies – we **support** the concept of and recognise the value in having Chartered Professional Engineers (of an appropriate discipline) or other persons deemed competent by a

national body such as the Certification Board for Inspection Personnel (CBIP), inspect specific forestry plant.

We believe that designers and manufacturers of forestry plant and importers and suppliers of plant are best placed to provide direction and guidance on key design elements and operating elements that should be incorporated into any formalised regular inspection. Their responsibilities are already established within the HSAW Act and we believe an additional layer of regulated requirements is unwarranted.

WAM industry representatives have agreed that periodic formal inspection of machines is a positive step. This has already been proven to work informally with current manufacturer's supporting their customers by establishing an inspection regime in conjunction with their CPEng and reinforced by additional guidance provided in the Worksafe factsheet. We would prefer seeing an industry led WAM inspection regime that is based on the current yarder inspection model, as opposed to adopting the AMR registration and licencing approach. To this end an on-going inspection framework is currently being explored by industry.

Operator Licencing – we are concerned that if a selection of forestry plant was selected for design and individual item of plant registration, we are surely as small step away from operator licencing. This would have a significant impact on forestry businesses. As stated earlier there are some 300 yarders and 120 WAM in NZ. Introducing an operator licence regime would create significant consequences harvesting businesses, lead and backup operators and their replacement if leaving a business at short notice.

We note that AMR Schedule 3 – High-risk work licences and classes of high-risk work (p.433) does not include forestry work. Given that position, we do not believe operator licensing is needed in forestry in NZ. There is already a requirement on any employer to ensure that an operator is suitably qualified and "competent" to operate a machine. If they are not deemed competent then they fall under several classes of training depending on risk and actual competency. Most principals these days are doing due diligence on contractors and require copies of training and qualification records for the operators on their jobs.

We are **strongly opposed** to operator licencing and see no added value in regulating this area.

Conclusion – WAM and TA plant has been deployed successfully in many countries and due to the technology and standards used, has significantly reduced the risk profile associated with manual felling and extraction of trees.

On balance, we believe industry is best placed to manage on-going inspection of WAM / TA plant which has, for consultation purposes, been identified as high-risk by MBIE. We are **not in favour** the regulated registration of specific items of forestry plant, their designs (and modifications) and potentially licenced operators as a necessary or necessarily positive step forward.

We do **support** the concept of and recognise the value in having Chartered Professional Engineers, or other persons deemed competent by a national body such as the Certification Board for Inspection Personnel (CBIP), inspect specific forestry plant where the risk warrants it. As such we put forward an alternative inspection and monitoring option for WAM.

5.1.1 Alternate Proposal

The industry has demonstrated its ability to self-manage current log yarder inspection requirements. The industry has agreed, in principle, that similar inspections for Winch Assisted Machines (WAM) and Traction Aid (TA) would be a positive step it should take to manage risks associated with these operations.

The following is an outline of an industry led system to manage risks associated with WAM or TA operations;

1. PCBU's who design, manufacture, import and supply WAM/TA continue to meet their statutory obligations as set out in Sec 39-42 (HSAW). This includes customer support for new plant.

2. PCBU's that control plant must have systems for monitoring the condition of plant and work practices. They must ensure appropriate training is given and that plant is operated competently. A NZ Steep Slope Machine Operations BPG is developed to support WAM / TA practices and requirements.

3. PCBU'S controlling the worksite or requesting the work, must ensure work is planned and risks are assessed, and that capability and operating limits of the plant and operator competency are considered in such plans.

4. The CPEng / competent person inspection processes are brought under a recognised body (eg: CBIP). A register of inspectors is maintained to ensure inspectors are available to complete inspections as required.

5. WAM / TA inspections are completed in accordance with the aforementioned BPG [under development] and the manufacturers' maintenance schedule. The use of modern electromagnetic testing equipment to assess wire ropes in a non-destructive manner, should be considered.

6. Inspection findings are fed back to designers, manufacturers, owners and operators.

7. The website (currently with FICA) that is maintained for yarder tower inspectors is expanded to incorporate WAM / TA. This will support inspectors operating within the system to share information among themselves for the purposes of improving the general condition of the cohort of yarder towers and WAM inspected and/or serviced by them.

8. The digital development work that has been initiated by FICA (on-line inspection forms and data collection work) is supported by industry.

9. The Operator training and qualification framework that is in place (Level 4 or higher unit standard and/or NZ Certificates) continues to be supported by employers. FISC will investigate to option to add WAM operator certification to its independently assessed on the job professional certifications.

10. An effective distribution network exists to facilitate the sharing of hazard alerts and learnings from any incidents.

We believe the industry deserves credit for the safety and productivity advances it has achieved through the design, manufacture and implementation of mechanised steep slope harvesting systems. This has all been achieved in the absence of regulation. It's been done to make our work places safer, to reduce losses associated with accidents and at the same time improve productivity.

5.2 Yarders

The System in its Entirety - with respect to log yarders, the various rigging, anchoring and extraction attachments are all part of system and a source of risk. To focus on the yarder in isolation would be a mistake.

To the best of our knowledge we are not aware of a single fatality or serious injury due to a yarder plant failure. Industry records show 7 of the 19 work related deaths in the forestry sector between 2008-2017 [referred to in the Consultation document Overview] were associated with cable extraction. Of those, five were the result of being struck by an object on the extraction face (wire rope, shackle or stem), one was the result of a fall into a root plate hole created when a corner block stump failed and the final event was a fall on a yarder deck. While all are tragedies, none are the consequence of a failure of the primary mover - the yarder.

Balance - we believe that any discussion around high-risk plant requires balance. It needs to consider risks associated with how the plant is used (operating practices) and not just the risks posed by plant per se. We believe the industry has, over the last decade, successfully self-managed risks associated with yarders. We are strongly of the view that non-regulated, self-managed processes using competent persons and risk focused inspections achieves the same outcomes that are being sought by proposed regulation.

It is also important to recognise that soundly designed and manufactured plant attachments (ie: a grapple used for log extraction in yarding) are removing a large percentage of high-risk manual breaking-out work. As a consequence, high-risk manual tasks are increasingly being replaced by the deployment of lower risk specialised harvesting plant and equipment.

Inspection Bodies – we **support** the concept of and recognise the value in having Chartered Professional Engineers, or other persons deemed competent by a national body such as the Certification Board for Inspection Personnel (CBIP), inspect specific forestry plant.

All yarder tower inspectors, who do not hold a degree in engineering and an IPENZ practicing certificate, are required to use an industry governed system that consists of biennial peer-review competency checks from an independent assessor. There is also a process for on-boarding new inspectors. Current inspection processes require records of inspections and issue of certificates to be kept. On-line systems are being developed to further increase efficiency and effectiveness of these processes. Biennial inspector workshops are also held.

Aging Yarder Fleet

We do concede that the NZ yarder fleet is aging and that is of some concern. Older plant is constantly subject to repair and maintenance. Periodically a yarder will be taken out of service and critical components replaced or refurbished. Such work is then subject to re-certification.

More recently yarders have been subject to additional scrutiny with respect to appropriate guarding to separate workers from risks associated with moving ropes and drums, and engine parts.

We are starting to see a few imported yarders arriving on our shores. These are a valuable addition to the fleet. The industry acknowledges that it is important that these individual pieces of plant meet NZ H&S standards and to this end some pressure needs to be applied to designers, manufacturers, importers and suppliers to ensure necessary standards, particularly around guarding, are met.

We **support** the need for continued annual inspection of cable yarders and five yearly certification of the operator protective structure on anything other than new machines (10 years). We also believe there is scope to consider expansion of the inspection scope based on inspection report findings (trends) as time goes by. There may also be a case for the use of modern electromagnetic non-destructive testing equipment to assess parts which are not viewable to the eye on a periodic basis.

Event Notification - we **reject** the notion that Yarders be regulated because the current definition of notifiable incident, with respect to plant failure, is limited to *"the collapse, overturning, failure, or malfunction of, or damage to, any plant that is required to be authorised for use in accordance with regulations". (***Authorised** *meaning authorised by a licence, permit, registration, consent, certificate, or other authority).*

As such, because Yarder use does not require authorisation, a tip over or structural failure does not require notification, unless a person is injured or the incident meets one of the other reportable criteria. If Worksafe NZ believe the definition is inadequate, then we suggest the focus should be on addressing the definition, not additional regulation.

References

Link to ACOP
https://safetree.nz/wp-content/uploads/2015/02/forest-operations1.pdf

Link to Factsheet
https://worksafe.govt.nz/dmsdocument/701-winch-assisted-harvesting-on-steep-slopes

Worksafe NZ HSWA Bulletin - *Inspection and certification of protective structures on forestry yarders*
https://worksafe.govt.nz/dmsdocument/4113-bulletin-inspection-and-certification-of-protective-structures-on-forestry-yarders

Link to Maintenance of Yarder BPG
https://docs.wixstatic.com/ugd/4bfe64_c96a26a0d0074948b30f7a0f0808be8c.pdf

Comments on specific Consultation points

5.1 Should amusement devices and plant currently regulated under the Pressure Equipment, Cranes, and Passenger Ropeways Regulations be regulated under a single set of provisions for high-risk plant?

Yarders and WAM/TA mobile plant are excluded from PECPR regulations by way of the Schedule 2 exclusion *"Earth-moving and forestry equipment, not including such equipment being use as a crane".*

We are of the view that items of plant requiring CPEng inspection, under current ACoP or BPG requirements, will continue to be successfully undertaken by industry. We concede that the various Approved Codes that impact on this process do require an update and would ask that MBIE support a process to update these.

We also concede that the NZ yarder fleet is aging and that is of some concern. Older plant is constantly subject to repair and maintenance. Periodically a yarder will be taken out of service and critical components replaced or refurbished. Such work is then subject to re-certification. We would be open to further discussion with MBIE as consultation progresses on the best method to achieve assurance that yarders are in sound condition and present minimal risk to those operating or working around them.

We **support** the need for continued annual inspection of cable yarders and five yearly certification of the operator protective structure on anything other than new machines (10 years). We also believe there is scope to consider expansion of the inspection scope based on inspection report findings (trends) as time goes by. There may also be a case for the use of modern electromagnetic non-destructive testing equipment to assess parts which are not viewable to the eye on a periodic basis.

5.2 N/a – forestry

5.3 Will the proposed registers of plant improve the transparency of the regulations and improve conformity in the manner outlined above?

We can see no direct benefit or reduction of risk for Forestry. We believe an adequate yarder register can be maintained via CPEng annual inspection arrangements. With WAM / TA plant design evolving, rigorous design and manufacture standards already in place and proposals to initiate industry led inspection, we do not see benefit in including such plant on a government register.

5.4 Do you agree with the approach to the use of Standards that is proposed?

Support – we agree that professionally qualified engineers who design new or modify plant will be well aware of the standards to be followed for such work. The standards used can be added to plant plates, certificates or manuals. We do not see benefit in regulation that requires registration of a set of design standards (and amendments) or individual items of plant.

We support the statement "*although this places some significance on the credentials and competency of engineers and designers, we consider the engineering professions in New Zealand to be well developed and able to continue this approach".*

5.5, 5.6, 5.7 - not relevant to Forestry

5.8 Should there be a new central register of plant designs, maintained by WorkSafe or a delegated agency?

Not Supported – we so not support the inclusion of forestry plant designs on a new central register. The industry has and continues to demonstrate we can self-manage risks associated with mobile plant.

We have concerns about currency of a proposed register. WAM design refinements are constantly evolving and feedback we've received it that a design would barely have completed the registration requirements phase before a design modification comes along. There would be copyright issues, a large administration cost and no added safety benefit.

We believe it is better to focus efforts on owners and operators to ensure maintenance and inspections are being kept up to date and that manufacturers continue to conduct period time or use based inspections. As such, and as started earlier, we do **support** the concept of and recognise the value in having Chartered Professional Engineers (of a related discipline), or other persons deemed competent by a national body such as the Certification Board for Inspection Personnel (CBIP), inspect specific forestry plant where the risk warrants it.

5.9 What types of plant should be included (based on, but not limited to, the list in *Annex One*), with attention to the inclusion of pressure piping, cylinders, refrigeration systems, model engineering, heritage boilers and new types of plant discussed at p 92?

Not supported – p.92 lists *forestry equipment, including for mechanical harvesting and cable logging.* We believe the case to include this plant in a central register of designs and registration of items of plant is not strong enough.

5.10 What standards should apply, and what regard should be had, to seismic performance when registering designs, as distinct from individual items of plant?

N/A – seismic performance not relevant forestry plant but does have relevance to structures (roads and bridges)

5.11 Is an "alteration that may affect health or safety" an appropriate threshold for requiring alterations of designs to be verified/re-registered?

See 5.8 – the central register concept for forestry plant is not supported.

5.12 What threshold(s) should apply to the registration of designs of heating/cooling equipment?

N/A – design of heating/cooling equipment not relevant forestry

5.13 Should designs of model engineering and/or (full scale) heritage boilers be required to be registered?

N/A - forestry

5.14 Should designs registered on Australian state registers be recognised in New Zealand?

We would add that European CE marked plant would also need MBIE's consideration.

5.15 Would you expect benefits from alignment and interoperability with the Australian state registers?

We are not enthusiastic about this. On the one hand MBIE appears to be keen on many aspects of AMR but then, in a forestry context at least, must be prepared to accept that the Australian regulator has not included forestry plant within its high-risk schedule.

5.16 Do you support the introduction of a centrally held register of individual items of high-risk plant currently subject to the Pressure Equipment, Cranes, and Passenger Ropeways Regulations?

We are not enthusiastic about this. The basis for our position on this has been conveyed earlier in this submission.

5.17 What types of plant should be required to be registered (based on, but not limited to, the list in *Annex Two*), with attention to the inclusion of pressure piping, refrigeration systems, model engineering, heritage boilers and new types of plant discussed at p 92?

No forestry plant – there is no risk to the public and if well managed well no risk of multiple injuries / fatalities to the workforce. Registration of plant design won't change this – it's sound work plans, operator competency, fit for purpose machinery and how the work is managed that dictates the H&S outcomes. Accident data tells us it's the way work is performed and failures in the broader system that are a larger contributor to accident causation. The focus must be on risks associated with the overall system not confined to the piece of plant.

5.18 Should forestry plant, like that recommended to be inspected by CPEng under forestry codes or guidance, be required to be registered?

Not supported for the reasons set out in the Discussion section above. We propose an industry led risk management approach for new WAM/ TA deployments as set out in the Alternative Proposal section above.

5.19 What scale or risk categories of pressure equipment should be required to be registered?

No comment – not relevant to Forestry

5.20 What threshold(s) should apply to the registration of individual items of heating/cooling equipment?

No comment – not relevant to Forestry

5.21 Should individual installations of model engineering and/or (full scale) heritage boilers be required to be registered?

No comment – not relevant to Forestry

5.22 Do you agree with the proposed requirements for registration?

Not supported – we believe the risks associated with forestry plant currently managed in a non-regulated regime do not warrant registration of design, items of plant and/or licences

5.23 Should registration be for a 5-year period for all items of plant or for a lesser period for different items of plant (refer to inspection requirements below)?

No Comment – not supported

5.24 What regard should be had, and what standards should apply to the seismic performance of individual items of plant?

No comment – not relevant to Forestry mobile plant

5.25 Should specified types of existing plant be required to be assessed for their "remaining design life" and/or should safety critical aspects of their design be reassessed as a precondition of their registration as items of plant?

Not supported – this can be achieved through non-regulated industry led inspection systems and processes. Inspection of safety critical aspects are included in inspections. Aspects associated with aging plant that have been identified by inspectors are given due consideration by the inspector group. Inspection sheets are updated to reflect emerging risks.

Yarders that are subject refurbishment require certification before re-deployment.

In addition, industry hazard alerts, from NZ and overseas relating to risks associated with specific plant are shared through existing networks. (Eg Madill top of tower issues).

5.26 Should other categories of existing items of plant be exempt from the requirement to be design registered before registration as items of plant?

Yes, forestry Yarders and Winch Assisted Machines / Traction Assist plant used in harvesting operations.

5.27 Should existing accreditation requirements for inspection bodies and inspection personnel be retained for equipment currently under the Pressure Equipment, Cranes, and Passenger Ropeways Regulations?

No Comment

5.28 Should the current requirement for a CPEng (or equivalent) to certify and inspect amusement devices be retained?

N/A - forestry

5.29 Should inspection bodies and personnel be able to maintain the register, based on their inspection work?

Supported - agree, as currently happens with yarder inspections although the process could be do with a tidy up (which industry is working on). Currently the Inspector and the machine owner both retain copies of inspections.

5.30 What level of detail should the regulations specify concerning the periods of inspection, the applicable standards, and the matters subject to inspection for different classes of plant?

No Comment

5.31 What level of detail in describing competencies should be included in regulations for high-risk plant?

We note that MBIE *propose to review the licensing and competency of operators of high-risk plant when developing separate regulations for high-risk work, but in the interim we are interested in your views on the level of detail in describing competencies that should be retained in regulations for plant and structures". P107*

We note that AMR Schedule 3 - High risk work licences and classes of high-risk work (p.433) does not include forest harvesting activities or plant.

It is important to note that industry has developed a qualification for WAM operators. This was developed for industry by Competenz and the first tranche of operators have just completed the units.

5.32 What inspection requirements should be contained in safe work instruments or approved of codes of practice?

Supported – the forest industry currently manages this using a Best Practice Guidelines for Maintenance Inspections of Yarder Towers. Similarly, a decision has been made to produce a BPG for Winch Assisted Harvesting. Work will commence on the in Q4 2019.

Industry would have no objection to including CPEng inspection requirements into a suitable code or BPG (as discussed earlier in this section)

5.33 – 5.35

No comment – not relevant to Forestry

5.36 Should the existing "type fault" provisions in the Pressure Equipment, Cranes, and Passenger Ropeways Regulations be retained in new regulations for high-risk plant?

No comment

5.37 Which incidents involving different categories of high-risk equipment should be notifiable to WorkSafe?

Event Notification - we reject the notion that Yarders be regulated because the current definition of notifiable incident, with respect to plant failure, is limited to *"the collapse, overturning, failure, or malfunction of, or damage to, any plant that is required to be authorised for use in accordance with regulations". (***Authorised** *meaning authorised by a licence, permit, registration, consent, certificate, or other authority).*

We support the current list of Notifiable Events as defined in the H&SAW Act. We see no need to include any additional incidents related to forestry activity. If Worksafe believe the definition is inadequate, then tidy up the definition.

5.38 Do we need additional requirements on upstream duty holders in relation to high-risk equipment?

No – adequately covered in the H&SAW Act. In our experience Designers and Manufacturers of specialised forestry equipment are aware of their responsibilities.

5.39 Do you agree with a prohibition on supplying plant that is not design registered when it is required to be?

No comment

5.40 Based on the proposals you have commented on in this section on high-risk plant, are there any significant costs and/or benefits that will affect you or your organisation?

We are finding it difficult to see where any real benefit would accrue to any party designing, owning or operating specific forestry plant that has been mooted for design and registration. The reasons for our position have been stated earlier in this section.

Section 6 – Working at Heights

We note that the consultation document is mainly focused on the Construction industry, but there is a section on tree work. Our submission is straightforward. Commercial pruning is different to Tree Lopping and the industry currently operates with a well thought out set of practices that have been previously agreed with stakeholders and incorporated into a BPG.

We submit that when MBIE considers new or amended requirements around working at heights that commercial tree pruning is not inadvertently impacted by a change in definition or requirements around tree looping or arborculture work.

Working at Height - Pruning using a Ladder - the industry, in conjunction with the then Dept of Labour (DOL), developed a process to cover workers undertaking ladder pruning operations. The procedures are documented in the BPG Silvicultural Pruning.

DOL, pruning workers / contractors and the NZFOA investigated pruning at height operations (including field visits) and developed an agreed process (2005) that has delivered a safe and practical operational system that allows workers to work from 3m – 4.5m (height of the feet) without the need for a "work positioning device". Analysis of the FOA Incident Reporting Information System (IRIS) database over the last five years shows there is not an issue with falling from height while pruning (results available on request).

The key feature of the agreed system is that only workers deemed competent can operate without a "work positioning" device above 3m, but below 4.5m.

The following practice within the BPG (P.10) is important;

- *When carrying out pruning from a ladder, the operator must wear a work positioning device once they reach 3 metres (the height of the operator's feet from the ground). UNLESS:*
- *The operator has demonstrated to their supervisor his/her competency to undertake pruning from a ladder (manual or chainsaw pruning).*

The BPG clearly lays out the required process to deem a worker "competent" and exactly what a "work positioning" device is.

Competency - where the employer (or supervisor) has deemed an employee to be "competent", the employer shall maintain detailed documented evidence showing:

- *The task the worker was carrying out.*
- *The situation the worker was carrying out the task in.*
- *Who deemed the worker competent and their qualifications and/or experience.*
- *How long the competency assessment took and when it was carried out.*
- *What visual demonstrations were observed to show competency, and*
- *The worker is working towards NZQA Unit Standards for: either Chainsaw pruning units 6949, 6973, 6972 or Manual pruning units 6949, 1243, 1245*
- *Work positioning devices are used when the operator is in training and working with the feet 3 metres or more above ground, until competency is reached as described above.*

Operators must use a work positioning device at all times when pruning with their feet 4.5 metres or more above the ground.

Reference: https://safetree.nz/wp-content/uploads/2015/03/Silvicultural-Pruning.pdf

Rigging Elevated Supports for Cable harvesting

From time to time a harvesting contractor may elect to use tree spars to provide addition lift for a selected cable extraction system. The frequency of using such elevated supports is extremely low. The industry, in conjunction with WorkSafe has included clauses in the Approved Code of Practice for Forestry Operations under section 14.7 – Tailspars to set safety expectations for this activity. Basic requirements are as follows:

14.7.1 – Trees used for elevated supports must be topped and secured with guylines.

14.7.2 – Hanging block systems shall be used where ropes are elevated.

14.7.3 – At least two competent persons shall be present when tree topping and rigging is being done and the second person shall have both the equipment and skills to effect a tree rescue if required.

Best practices for this activity are set out in the Cable Logging BPG.

A level 4 NZQA unit standard 17764 entitled “Plan and rig an elevated support system for a cable harvesting operation” encapsulates the necessary skills required to plan and rig an elevated support system. While the uptake of this unit standard has been relatively low, it remains fit for purpose. This unit was developed in 2000 and the last review was in 2015. This unit is also supported by unit 23097, “Rescue an injured or disabled person from a tree”.

A review of 15 years of harvesting harm related events did not locate a single tree rigging accident resulting in harm. This supports our view that the likelihood of an accident occurring whilst undertaking this activity is extremely low. To further add weight to this conclusion, increasingly mechanised extraction systems (eg: grapples) do not use elevated intermediate rigging supports.

On this basis, we believe that the industry is managing the risk of rigging tail spars and intermediate supports for cable logging operations and regulation of the task is unnecessary.

Reference:

https://www.competenz.org.nz/assets/Uploads/Cable-Logging-2018.pdf

Section 7 - Excavations

Trenches (7.1)

Excavation work in forests is generally associated with road and landing construction, quarrying activity and a specific hauler anchoring system known as placement of 'dead-men'.

Road and landing construction excavations typically involve cut and fill earthworks, construction of water control structures (berms, water tables, soak pits, culverts, fords and bridges) and non-complex quarry work.

Trenching greater than 1.5m in depth is limited to;

(a) construction of trenches for placement of pipe culverts or box culverts. Ordinarily, neither require a person to stand in an excavated trench > 1.5m in depth.

(b) preparation of a 'deadman' hole. This is a pit that's an excavator bucket width wide, at least 5m long and 4m deep. One or two logs are buried in the trench at right angles to the proposed direction of pull. The log(s) have a strop around them to which the load rope is shackled. At no time does a person enter a deadman pit.

Current Controls

With respect to quarrying, the industry is aware of the requirements of the H&S at Work (Mining and Quarry Operations) Regulations 2016.

Industry standards for road and landing construction are set out in an industry publication called the Forest Road Engineering Manual (2012) and associated Operators Handbook. These are both under revision, in-part due to the development of the National Environmental Standard-Plantation Forestry regulations (2017). The revised manual includes a specific check for underground (and overhead) infrastructure is part of the planning process. This small addition will improve consistency in the road engineering and harvest planning process.

H&S requirements are defined and managed in accordance with the Approved Code of Practice for H&S in Forestry Operations.

Supervision, training and competency is managed in accordance with Sec 9 of the General Risk and Workplace Management) Regulations 2016

Relief Sought

We **support** the retaining the status quo, that is requirements for excavations with a face more than 1.5 metres high as set out in Sec 24(2) of the H&S in Employment Regulations 1995. This definition allows for low risk work commonly carried out in forestry to be un-shored.

We **oppose** non-complex trenching or pit digging (described in (a) or (b) above) being classified as *"high hazard construction work",* and thus attracting more stringent requirements.

If MBIE do intend to classify all trenching > 1.5m as high hazard work, then the forest industry seeks exemption for its culvert placement and 'dead-man' anchor pit works. Alternatively, a more explicit high-risk trench definition could be developed which excludes any trench or pit where no person will enter the excavation.

Q7.9 Should the current competency and supervision requirements for excavations be retained, or prescribed further?

We **oppose** more stringent levels of competency for forestry excavation work. There is simply no justification for operator licencing or higher levels of training for such works. As such we also **oppose** the suggestion that prescribed qualifications and/or experience would be necessary for un-shored excavation work as set out in Sec 24(2) of the H&S in Employment Regulations 1995.

Underground Services (7.2.2)

MBIE propose a new duty under which any PCBU with management or control of a workplace, where excavation work is to take place, would be required to do what is reasonably practicable to identify all underground services before excavation work commences. We agree with, in principle, the outcome MBIE is seeking to achieve but believe adding yet more regulation is not necessarily the best method to achieve this.

Forestry has well established planning processes for road engineering and harvesting. Amongst those processes are confirming the location of underground services before works commence. Larger forestry companies have GIS systems which record this information, which is then passed onto the contractor undertaking the works. Where this process is not available, the person responsible for initiating the works (paying for the work to be done) will contact the land owner and ask about the location of services and/or use a service such as 'BeforeUDig". Appropriate controls can then be developed.

These are all 'reasonably practicable steps' as required by Sec 30 of the H&S at Work Act.

Relief Sought

We **oppose** additional regulation low risk non-complex trench or pit work.

Appendix 1

Yarder Terminology & Requirements

The term “yarder” refers to integral and free-standing tower haulers and swing yarders. there are approximately 300 log yarders in NZ.

Frequency of Yarder inspections
Tower inspections shall be performed:

- Three years from the commissioning (new) date and then annually thereafter
- Before a newly imported second-hand yarder starts work
- Before commencing work where a machine has been idle, and the tower inspection certificate has expired

In the case of a tower tip-over, reinspection is required before operations recommence.

To ensure that the tower has a current yarder tower certificate, the repeat inspections should be scheduled to allow any repairs to be made before the previous certificate expires.

The Approved Code of Practice for Safety and Health in Forest Operations requires;

- All yarder towers shall be inspected annually by a competent person and tagged as certified. Information on the certification plate shall include:
  - › owner of the mobile plant
  - › make, model, serial number
  - › inspection expiry

The ‘competent person’ undertaking these inspections are personnel certified by national Certification Board for Inspection Personnel (CBIP) or a Chartered Professional Engineer.

A Chartered Professional Engineer shall ensure modifications and structural repairs:

- › do not reduce the original safety factor of the equipment
- › are recorded on an identification plate showing the name and address of the CPEng and the date of modification.

Yarder OPS (2018)
Should have current certification according to the following standards:

OPS: Operator Protective Structure: ISO 8084: 1993 or 2003, WCB 608 or SAE J 1084
FOPS: Falling Object Protective Structure: ISO 8083: 1989 or 2006, WCB 601, 602, 603 or SAE J1043.

These OPS certifications may be:

- ten years if issued by the original manufacturer (or by a chartered professional engineer)
- five years if issued as a recertification.

Subsequent ‘fit-for-service’ OPS inspections are an annual requirement.

Appendix 2

Other Current Industry led inspections

The following are the areas where CPEng inspections / competent persons inspections are currently applied as a sensible risk reduction tool (ACoP requirements).

ROPS/COPS/FOPS/OPS are inspected on a differing but recurring basis. Most but not all ROPS cert plates expire after a period of time (typically 5 years) after which owners are required to get a CPEng to inspect and recertify. This applies to roading, logging diggers, dozers etc –anything with an aftermarket and not factory ROPS structure.

Winch Assist Machine (WAM) - there are approximately 120 Winch Assist Machines (WAM) operating in NZ. Many more have been sold to other jurisdictions, including Australia, Canada and the USA

- All mobile plant using the assistance of a wire rope and/or winch shall be specifically designed, tested, demonstrated to be safe, and certified by a Chartered Professional Engineer to be safe when operated on steep slopes.
- The tension on the wire rope shall be restricted to 33 percent of its breaking load at all times.
- The maximum operating weight of the mobile plant shall not exceed the rated breaking load of the wire rope.
- An emergency back-up system shall be incorporated into the operation to ensure the stability of the mobile plant should the winch, wire rope or anchor fail.
- All winch-assisted mobile plant operations shall have a documented safe working best practice, including as a minimum:
    - › hazard management
    - › machine and wire rope inspection and maintenance routines
    - › operator fatigue plans
    - › work alone procedures
    - › an emergency plan.
- All winch-assisted mobile plant shall be constructed to provide adequate emergency access and egress points that can be activated internally and externally.

The 'Winch-assisted Harvesting on Steep Slopes' fact sheet [Worksafe NZ] sets out additional guidance.

See Sec 5 References for document links

Acknowledgement

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The FISC Operational Advisory Group and Council