BIG CREEK

"Growing Redwoods for the Future"

November 29, 2021

California Air Resources Board (CARB)
1001 I Street,
Sacramento, California 95814

RE: Proposed Amendments to the Small Off-Road Engine Regulations

Dear Chair Randolph, fellow Board members and CARB staff,

I have worked directly and indirectly in forestry operations for the past forty-eight years. I worked in Utah, Idaho, Wyoming, Colorado, Arizona, Oregon, Washington State and California. Following graduate school, I worked as a timber faller for 21 years. I wish to relay my hand's-on experience as it relates to your proposed small engine regulations.

I commend your Board for seeking alternative, less polluting technology whenever such technology becomes available to the public. Unfortunately, when it comes to professional grade chainsaws, such technology does not exist. This is not to say technology will not get there, but it clearly is not available now.

Chainsaws used to fell average second-growth coastal redwoods and Douglas fir here in the Santa Cruz Mountains require saw bars (sometimes referred to as blades) from a minimum of 32 inches in length to 50 inches whenever larger trees are felled. I typically ran a chainsaw with a 36 inch bar. In order to properly and safely back-cut a tree, the bar must be capable of reaching through half the diameter of a tree and quickly cut through that much mass.

Gasoline powered professional chainsaws capable of safely and effectively running bars of that length and cutting trees of such size have approximately eight horsepower and revolutions per minute (RPM's) between 11,000 and 13,000 RPM's.

Professional chainsaws must be capable of cutting quickly when back cutting a tree, especially when felling straight-grained species such as fir and alder. If cut too slowly, these trees can split vertically while the tree begins to fall. The tree splits open and breaks at a pivot far above the stump. The tree then frequently kicks back toward the worker. The esoteric term for this phenomenon is "barber chair". Barber chairs can occur from operator error, particularly when the face cut (notch) is improperly prepared. However, a barber chair can occur if the back cut is cut too slowly. Workers have been injured and killed when a tree barber chairs.

A review of currently available battery powered chainsaws shows an average maximum bar length of 18 inches and a maximum RPM of approximately 3,000. It would be impossible to fell average size trees with a saw that small and those saws would even be inadequate for legally required lopping following timber harvest operations.

Timber fallers cut the limbs off felled trees while they walk down the log. They are required to cut the limbs on the top and both sides of the felled trees. It would be extremely difficult or impossible to reach these limbs with a short bar and would likely result in serious back injuries.

Short bars would also place the operator's feet dangerously close to the bar tip, significantly increasing the likelihood of chainsaw lacerations.

Another factor to take into consideration is the weight of timber falling equipment. This is not just a convenience issue. It is a safety issue. The average timber faller workday is eight hours. This is eight hours of intensely physical labor, frequently conducted on steep, uneven terrain. The timber faller must be capable of moving quickly away from dangerous situations, whether during the first hour of work or the last. In 21 years of falling timber I never worked a day when I didn't have to move quickly away from a falling tree. Doing that job in an exhausted or fatigued condition was, and always will be unacceptably dangerous.

The total weight of timber falling equipment is a legitimate and serious safety consideration. When falling timber, my chainsaw (including bar and chain) weighed more than 23 pounds. My container of gasoline and bar oil weighed more than 20 pounds. 40+ pounds is the equivalent weight CARB should be using when comparing the weight of gasoline powered to electric chainsaws and battery packs. This is assuming that electric chainsaws are capable of performing this occupation and are of a weight that is safe to use, which is currently not the case. Ancillary falling equipment such as axes, falling wedges, fire extinguishers, falling jacks and safety apparel would be the same regardless of chainsaw type.

I have a number of neighbors who own, or are employed by commercial yard and lawn service companies. Some of them use newer electronic tools powered by backpack batteries. The tools are connected to the backpack by electric lines. This would never work in a forested environment and should never be considered for any chainsaw application, even residential. A chainsaw operator must be able to drop the saw immediately and move quickly out of danger. If the connected backpack power cords were to hang up in brush or prevent the operator from safely dropping the saw, this could result in injury or death. A separate battery attached to the chainsaw would be required rather than electrical cord to a backpack. Individual batteries will likely weigh more than 10 lbs, making the saw and battery pack too heavy to safely pack through the woods and use. In addition, individual batteries will likely last less than one hour, hence, 8 or more additional batteries would have to be packed daily in the woods to the work site then back out and recharged at night.

In providing these comments I am not suggesting that CARB should not investigate cleaner, more efficient equipment. However, efficacy and especially the safety of workers should not be compromised in the process. If your Board and staff are going to consider chainsaw requirements as they relate to professional timber falling, you should first confirm that adequate equipment already exists and is publicly available at reasonable prices. It should also have such equipment field tested prior to finalizing any regulatory requirements.

At a minimum, professional battery powered chainsaws should be capable of efficiently operating with a 50 inch bar, have their reliability confirmed by their manufacturers and the total weight of saws and batteries should not exceed the weight of comparable gasoline powered chainsaw equipment by more than 5%. If these standards are not attainable, then current gasoline equipment should be exempted from any regulation until electric technology catches up.

Thank you for considering these important points. I would be happy to further discuss them with staff.

Sincerely,

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Big Creek Lumber Company