

# Small Cells endanger electrical worker safety and public safety

Written by Nina Beety To the International Brotherhood of Electrical Workers  
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## California Senate Bill 649 endangers electrical worker safety and public safety

Dear IBEW:

SB 649 — sponsored by CTIA and promoted by AT&T and Verizon — is speeding through the legislature. Without union opposition, it will pass.

This bill fundamentally changes the work environment for **utility electric line workers**, adding a new standard exposure which creates hazardous working conditions. SB 649 allows utility and light poles to be converted into “small cell” towers. Utility electrical workers would now be working on or near “small cell” towers all the time.

This routine exposure to hazardous microwave EMF emissions poses a great risk of injury and disability to workers, additionally so because “small cell” towers would be constructed next to their homes, allowing no rest or recovery time. Fire fighters were granted an exemption from having these towers installed on their facilities due to the health hazards.

Six **firefighters** living under a cell tower were studied in 2004. Each of the men who had their brains scanned showed a hyper-excitability of the neurons, or brain cells. This is considered to be a precursor to early cell death and potentially early onset Parkinson’s, ALS, and Alzheimer’s. Now, 8 years later, two of the men have had psychotic breaks with reality and all are suffering from memory impairment.

All the men tested in 2004 had tremors, and some were still in their 20’s. These **firefighters**, among the least likely to admit pain or disability, after cell tower activation reported:

- mental confusion and difficulty concentrating
- lack of focus and motivation
- memory loss
- mood swings including depression, anger
- sleep disruption and lack of alertness
- chronic headaches
- vertigo
- ringing in the ears

They weren't working on cell towers. They weren't subjected to the intense daily exposure which utility workers will face under SB 649. But as a result of that study, firefighters internationally adopted a resolution calling for no more cell towers on their fire houses, and they got an exemption from SB 649 "small cell" towers on their facilities. All of this because of the health hazards.

Under SB 649, utility workers will work on and around these de facto cell towers every day. Research has found cancer clusters up to ¼ mile away from cell towers, but these workers will work within the envelope of highest microwave exposure and in the beam of the antennas. Wireless companies don't turn off power to cell towers when workers are present, and two national surveys also found that cell towers even frequently exceed FCC limits.

Workers' exposure will routinely exceed FCC occupational exposure limits, which is based on a single 30-minute exposure not causing tissue heating. Cumulative, long-term, and non-thermal effects are not considered in FCC exposure guidelines. Also, co-location of small cells is encouraged, so utility and light poles will likely have more than one set of antennas – even higher microwave exposure levels for workers.

Based on the research on microwave exposure, utility workers will be at extreme risk for: cancers and tumors, cardiac problems including heart rhythm disturbances, DNA damage, changes in their blood, cellular stress and damage, breaches in the blood-brain barrier, neurological damage, brainwave changes and cognitive impacts, strokes, sperm damage, fertility impacts including having children with birth defects, electromagnetic sensitivity (EMS), seizures, blackouts, and what Europeans researchers call "burnout".

They will likely experience nausea and vomiting, dizziness, headaches and migraines, vision problems including cataracts, insomnia, difficulty concentrating and remembering, impaired immunity, pain, ringing in their ears and other hearing problems, hair loss, and weakness and fatigue. The international literature from scientists and health care professionals is extensive.

Last year the NIH National Toxicology Program announced significant carcinogenic effects from cellphone exposure levels after only two years of exposure — malignant brain tumors, malignant heart tumors, and precancerous lesions, as well as DNA damage.vii Recently I came across research on pancreatic lesions from exposure. Utility workers will have much greater exposure on a daily basis.

“Small cells” will be used for 4G but are being promoted for future 5G use. 5G frequencies are used in “active denial” systems used by the military and police for crowd control, causing acute burning pain. Skin reactions – including burns, flushing, rashes, eczema, bruising – already occur with microwave exposure, and sweat ducts have high absorption of these higher frequencies. Neurological and cardiac impacts, due in part to nerve receptors in the skin, are predicted by experts.

If utility workers start becoming impaired and then disabled, what happens? How much job loss can utility companies absorb before vital maintenance and repair work is jeopardized? How will that impact unions?

These “small cell” towers and macro cell towers will be installed in the public right of way everywhere — outside homes, schools, offices, without regulation and in most cases, only require a ministerial over-the-counter local permit from cities and counties. The bill eliminates most local government regulation.

Additionally, a stealth provision, previously spelled out in the bill, would allow micro wireless antennas to be installed on or embedded in electrical lines (powerline communication PLC or broadband over powerline BPL). If this happens, utility workers and all electricians will be handling microwave-radiating wires. Electrical lines will become de facto cell towers. This radiation will follow the wires into homes and buildings, and occupants will be surrounded by the emissions constantly. The Austrian Medical Association and 1500 physicians in Switzerland opposed PLC/BPL because of the enormous health hazards.

If SB 649 passes, electrical workers are at serious risk for developing disabling electromagnetic sensitivities due to new unavoidable and constant work contact with high levels of microwave radiation. In 2002, the U.S. Access Board recognized electromagnetic sensitivities (EMS) and that it could be disabling. In 2005, it released a report on accommodating those with EMS and multiple chemical sensitivities, and the California State Architect's office was involved in developing those recommendations.

In 1998, a California Department of Health Services survey found 3.2% of respondents were very sensitive or allergic to electromagnetic radiation and .5% had lost a job or were unable to work due to it. The Department of Labor has materials on accommodating people with EMS.

There will be no rest and recovery time during off-work hours because small cells will be installed next to homes. Small cells will also be in public parks. If electrical lines become microwave transmitters, all wiring will emit in the home. As a result of this constant exposure, electrical workers will be at severe risk of not just becoming disabled, but of becoming unable to tolerate microwave radiation and even electrical current in and around their homes and at work, with increased risk of becoming homeless as a result.

With workers forced into early retirement or on disability and/or workers compensation, as well as those who leave line duty and retrain for less hazardous jobs, utilities could face a future of too few workers to maintain the electric grid. What then?

Nationally, the FCC is trying to speed up utility pole deployment of small cells. Utility workers will be pulled from essential safety and maintenance work to do "make ready" assessments for wireless carriers. The FCC also wants to shorten the time for evaluating whether a pole can safely hold "small cell" antennas.

This is disastrous.

The 2007 Malibu fire was due to overloaded utility poles. Malibu Mayor Andy Steen called these telecom-loaded poles "time bombs." Under SB 649, there will be tens of thousands or hundreds of thousands of these "time bombs" here in California. If health and safety are of so little concern now, what will the future hold?

It is urgent to stop SB 649. It has already passed the California Senate, and has one final Assembly Appropriations vote on Friday before an Assembly floor vote next Tuesday or Wednesday.

Please oppose this dangerous bill before it is too late.

Attached are letters from attorney Harry Lehmann and researcher Martin Pall PhD on this bill.

Sincerely,

Nina Beety