

# IONIZATION SMOKE ALARMS ARE DEADLY

The Alarming Truth  
by Chief Marc McGinn

“I call for the immediate removal  
of the fraudulent, deadly,  
ionization so-called smoke alarm...”



**Chief Marc McGinn**

Albany, California, U.S.A. | 6 June 2010

[Fig. 1. Chief Marc McGinn - Albany Fire Dept | CA, USA | June 2010]

**IONIZATION** Smoke Alarms Are **DEADLY** | WFSF 2020 Update  
by The World Fire Safety Foundation

The WFSF thanks Chief McGinn for reproduction rights for his 2010 report (pages 4-9).

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## How To Use This Report

### The Public | Under 5 Minutes

- 1) Page 3: Read the WFSF's message,
- 2) Page 4: Read the first two paragraphs,
- 3) Pages 5-9: Read the text in the red and black boxes and pull-quotes, and
- 4) Pages 12-16: Check out the 'WFSF 2020 Update' pages.

Want more? Check out the [WFSF's Home Page](#) (under 6 minutes)

### Firefighters | 30 Minutes

- 1) Read this report in full,
- 2) Click on links that interest you - with the latest on-line version: [www.SmokeAlarmWarning.org/isaad4#aug20](http://www.SmokeAlarmWarning.org/isaad4#aug20)
- 3) Check out the [Firefighter's Web Page](#) (about 9 minutes)

### Attorneys, Journalists & Politicians | 200+ Minutes

- 1) Same as for Firefighters above - plus
- 2) Read [The C.A.N. Report](#)
- 3) Read Beasley Allen's [Landmark Ionization Lawsuit](#)
- 4) Examine the 20+ year exposé behind [flawed smoke alarms standards](#)

A Message from the  
**World Fire Safety Foundation**

16 September 2020

**IONIZATION Smoke Alarms Are DEADLY**  
**Why Haven't You Been Told?**

Dear Reader,

In August 2010, the San Francisco Chronicle featured a front-page report warning that the ionization smoke alarms in hundreds of millions of homes around the world were "deadly." Chief Marc McGinn, the World Fire Safety Foundation (WFSF) and other experts were warning that they should be banned.

The ionization smoke alarm is one of the most widely sold life-safety devices in history. Scientific test data from Australian Government (CSIRO) standards testing, together with overwhelming global scientific research and legal precedence, provides compelling evidence that ionization alarms are not safe.

When we're asked why the public hasn't been warned, (most people don't even know there are two completely different smoke alarm technologies), after more than twenty years of fighting this campaign, we can give an authoritative answer, i.e. *"Because of over forty years of misinformation and the fear of litigation."*

Thank you for taking the time to examine the facts for yourself.

This document has been designed to be read by everyone - from the public to politicians. After you've checked it out, please go to our 'Supporters' page ([page 16](#)) - because you can help save lives by sharing this message with everyone you know. However, what's most import is that you. . .

**. . .replace all your ionization alarms with photoelectrics - today!**

Thank you.

Sincerely,



Adrian Butler  
Co-Founders,  
World Fire Safety Foundation



Karl Westwell



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The WFSF was founded in March 2000. It does not sell anything, solicit or accept donations.

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# IONIZATION Smoke Alarms Are DEADLY

## The Alarming Truth - How Flawed Smoke Alarm Standards Have Resulted in Tens of Thousands of Injuries and Deaths

by Chief Marc McGinn | August 2010

My phone rang in the early morning of May 24th, 2010. It was Adrian Butler, Chairman of the World Fire Safety Foundation calling from Australia. Adrian had just finished reading my article published in the National Fire Protection Association's (NFPA) May/June 2010 edition (see sidebar). The article addressed the grave concerns over the faulty ionization smoke alarms that are installed in 95% of the homes in America. I was challenging NFPA's continued support of an alarm that is misrepresented and considered by many experts as defective. These alarms have led to as many as 1,500 deaths per year in the U.S. I was also calling for new legislation that would make it mandatory for all homes to use only photoelectric smoke alarms instead of the ionization alarms.

Adrian was excited someone in the fire service was addressing the defective alarms publicly and also challenging the NFPA's ongoing denial and dismissal of the problem. With Adrian's supporting phone call and years of research and information, I now had an ally ready to assist me in the unknown fight that awaited me.

### **"...ionization smoke alarms/detectors are mislabeled and misrepresented."**

Chief McGinn, NFPA Journal, 7/2010 (Figure. 2.)

NFPA's response to my article was that both photoelectric and ionization alarms allow sufficient time for most people to escape a fire. Their statement was grossly incorrect which surprised me and it was coming from the most renowned code authority on fire and life safety in the world. As a member of the fire service for 32 years and Fire Chief for over 17 years, I had always considered the NFPA the leader in fire and life safety. I was soon to discover my assessment was wrong. The NFPA was to turn against the facts I presented and the battle was on. What confounded me was NFPA's own studies revealed gross problems with the ionization alarms.

Arguably, the most notable fact was that over 20% of ionization alarms are disconnected within the first year of installation due to nuisance alarms. The NFPA was also aware that research revealed ionization alarms often failed to sound even when a room was filled with deadly smoke. I soon discovered the NFPA was not the only organization dismissing the dangers of ionization alarms. The opposition from the NFPA

### Chief McGinn's Letter to the Editor



NFPA Journal | May/June 2010, Page 8

[Fig. 2. NFPA Journal June/July 2010]

### Ionization vs. Photoelectric, Redux

I have been in the fire service for 32 years and fire chief of an ALS transporting fire department for over 17 years. Although I am aware omniscience does not come with the badge, my experience has led me to know this to be true: paramedics and fire prevention save lives. With this being said, we cannot rest on our laurels. The point I want to make is that it is time to bring out into the open that ionization smoke alarm/detectors are mislabeled and misrepresented.

They are more aptly flame alarm/detectors, not smoke alarm/detectors. Tests have proven that they detect flames and are very poor at detecting smoke. Moreover, ionization smoke alarm/detectors are the reason for many residents disconnecting/disabling their alarms due to the high rate of false alarms.

Recent legislation in Massachusetts and Vermont has disallowed the installation of the ionization smoke alarm/detector in new construction. Locally, my community does not allow the installation of ionization smoke alarm/detectors.

Moreover, a high-ranking fire official from the Boston Fire Department has stated that the exclusive use of photoelectric smoke alarm/detectors could save more than a 1,000 lives annually.

My question is: How many firefighter lives would be saved through early detection by utilizing photoelectric alarm/detectors? With the information we have today, now is the time to eliminate the ionization smoke alarm/detector altogether.

Marc McGinn, Fire Chief  
Albany, California



and other major organizations to photoelectric-only smoke alarms was just beginning.

After Adrian and I discussed the smoke alarm issue, he led me to major advocates who heavily favored “photoelectric-only” legislation. This encouraged me to step away from my peers in the fire service and attempt to make the city of Albany, California the first in the United States to enact a ‘photoelectric-only’ city ordinance.

**“...the state of Vermont passed ‘photoelectric-only’ legislation on January 1, 2009.”**

I had confidence knowing the state of Vermont passed “photoelectric-only” legislation on January 1, 2009. This legislation was enacted due to the failure of three hardwired ionization detectors in a lethal smoldering fire killing a family of five in Vermont’s Barre City in 2006. The victims happened to be relatives of the Fire Chief of Barre City. This successful piece of legislation gave me inspiration to do the same for my city.

On July 6, 2010, I organized the first public hearing of our photoelectric-only ordinance to the Albany City Council. The Council passed the ordinance during the first hearing with a unanimous 5-0 vote and with overwhelming resident support. Our second public hearing was scheduled for July 19, 2010. There was a great push to pass this ordinance on time as the City Council would take summer recess and would not convene until the first week of September. The week of July 6th was free sailing, and I felt this was going to be an easy victory after the support from the City Council. But an eerie calm began to settle in. I thought this just seemed too easy. My instincts were right.

By Monday morning, July 12th, letters of strong opposition and phone calls began to flood City Hall. The letters were addressed to the City Council, City Manager, City Clerk, City Attorney, and Community Development Department. Interestingly, not one phone call or letter was directly sent to me. The letters were from large, national organizations; the NFPA, Underwriters Laboratory (UL), Kidde (one of the world’s largest smoke alarm manufacturers owned by United Technologies Corporation), and many of Kidde’s sponsored organizations e.g. National Fallen Firefighters Foundation, Safe Kids USA, Phoenix Society, and Campus Fire Safety. All the letters were forwarded to me.

Tuesday morning, City Manager Beth Pollard nervously walked into my office and closed the door. This

was not her style so I knew the climate had changed as pressure was mounting to overturn our proposed ordinance. She advised me not to be surprised if the Council backed down from their initial approval of the photoelectric-only ordinance because of all the pressure from the opposition. It was an election year and the Mayor and one Council member was up for reelection. Moreover, she informed me that UL and Kidde would be present for the second hearing in opposition to the ordinance. She must have seen the fire in my eyes as she exclaimed, “You want a fight!”


I shot back, “You bet I do! And now I have valuable testimony from two fathers who lost their daughters in fires due to ionization smoke alarms. Do you remember my mentioning the names of Dean Dennis and Doug Turnbull at our first hearing?” She quizzically answered, “You mean the fathers from Ohio who lost their daughters in separate off-campus house fires?” “Yes.” I said. “They are flying out and will be at the Council Meeting to testify against UL and Kidde.”

These grieving fathers had become experts and traveled throughout Ohio educating officials regarding the deficiencies and dangers of ionization alarms. Surprised by my statement, Beth’s demeanor immediately changed as she exclaimed, “Well let the fight begin, I’ll inform the Council”. With a smile, I said, “It gets better. We have an internationally renowned fire protection engineer who has 35 years experience fighting this issue. His name is Richard

**Testimony | Dean Dennis  
‘Fathers For Fire Safety’**

**“I was appalled when I heard Kidde was going to be here and I was appalled when I heard Underwriters Laboratories (UL) was going to be here.**

**They are here for one reason - profits. They want to protect monetary interests, we want to protect your kids.”**



Dean Dennis M.Ed B.S. CISM

[ Figure 3. Dean Dennis Testimony to Albany City Council ]

Patton, and he will be attending the hearing.” With a smile of disbelief, Albany’s City Manager left my office with great confidence. And as tough as I might pretend I was, I knew I was no match for the opposition’s experts. I needed some experts on my side, and now I had some of the nation’s best.

**“UL & Kidde were completely unaware that the World Fire Safety Foundation was orchestrating an ambush. . .”**

Dean Dennis and Doug Turnbull lost their daughters in separate off campus house fires at Ohio State University and Miami of Ohio University in 2003 and 2005 respectively. They joined forces after learning from Boston Deputy Fire Chief/Fire Marshal Jay Fleming. Fleming said that if the homes where their daughters died had been protected by photoelectric instead of ionization alarms, they would most likely be alive today. Chief Fleming, with a degree in electrical engineering, has researched smoke alarms for over 20 years and is considered by many as a world renowned expert in this field.

Since the death of their daughters, Dean and Doug have been educating officials about the dangers and limitations of ionization alarms. There were 17 hard-wired ionization alarms in one of the homes and at least 4 hardwired alarms installed in the other home, but they were not enough to save the lives of eight students at two Ohio universities. Armed with over five years of research on ionization alarm defects, the ‘Fathers For Fire Safety’ as they are known, would surprise Kidde and UL at our council meeting. UL and Kidde were completely unaware that the World

Fire Safety Foundation was orchestrating an ambush that would shock and discredit both companies.

Adrian Butler is an ex fire full-time fighter. He began his involvement with this alarm controversy in 1997 when an international franchise organization run by him and Fellow World Fire Safety Foundation Co-Founder Karl Westwell, was involved in selling ionization smoke alarms. He began receiving letters from consumers complaining their smoke alarm never sounded even though they had a fire.

Adrian’s research led him to Chief Fleming (see Figure 8, [page 9](#)) and to Richard Patton. Adrian met Patton after discovering Richard was a fire protection engineer and was the lone campaigner against ionization alarm companies in the early 1970s. Patton’s name began to surface during the mid 1960s when he was named Chairman of four different fire detection codes for NFPA. When Richard assumed responsibility for the fire detection codes, he realized all homes (where 85% of all fire deaths occur) were totally devoid of fire warning equipment. He immediately initiated the writing of a fire detection code for dwellings. With the best and most knowledgeable people in the field, a new code was adopted at the 1966 NFPA National Convention called Standard 74.

As an engineer, Patton knew from the onset that at best ionization detectors were nothing more than flame detectors and did not have the ability to detect the lethal smoldering fires as photoelectric sensors did. He felt the newly created NFPA 74 code defined a reliable fire detection system for homes and believed fire deaths could be nearly eliminated. If properly warned at a very early stage of a fire, the

## IONIZATION Smoke Alarms Are DEADLY | WFSF 2020 Up-



Beasley Allen  
Law Firm

### Kidde’s Landmark Ionization Smoke Alarm Law Suit

After 3 young girls died in a home fitted with Kidde’s ionization smoke alarms, Kidde were forced to disclose Australian Government (CSIRO) test data that proves all ionization alarms are unsafe.

### [Kidde’s Looses Landmark Law Suit](#)

Hear Fathers For Fire Safety’s, Dean Dennis and WFSF Chairman, Adrian Butler in ‘The Law And You’ Radio Interview. with LaBarron Boone | Montgomery, Alabama, USA | 14 June 2014

### [CSIRO and UTC’s \(Kidde\) Failure to Disclose](#)

Read Open Letters sent to Kidde when an Australian Member of Parliament requested disclosure of CSIRO test data for the ionization alarms in his own home.



LaBarron Boone  
Partner, Beasley  
Allen Law Firm

[Fig. 4. Kidde Loses Landmark Ionization smoke Alarm Law Suit]

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## Testimony | Richard M Patton, Fire Protection Engineer



Richard M Patton FPE

**“This is the smoldering fire test at Underwriters Laboratories . . . they have a false test for the smoldering fire test. . .”**

[Fig. 5. Richard Patton FPE Exposes ULs Flawed Testing]

occupants could quickly extinguish the still tiny fire before help was needed or leave the home safely. What he did not realize was the industry had a much different idea. Did the fire industry truly want to completely eliminate potential house fires?

**“Numerous scientific studies dating back to the mid 70’s prove photo-electrics will sound on average more than 30 minutes before ionization alarms in the lethal, smoldering stage..”**

Marc McGinn, Fire Chief, Albany California

Ionization smoke alarms contain Americium 241. This radioactive material emits 37,000 alpha particles per second. The radiation causes an electrical current to flow across the detection chamber. When a sufficient number of these sub-micron (invisible) sized particles/particulate enter the detection chamber, the current is diminished and an alarm sounds. This invisible particulate causes ionization alarms to sound/false alarm when cooking toast, from over-

heated roasts or a steamy shower. This sub-micron (invisible) particulate is given off by flames which do not occur in the early, smoldering stage of fire. This is why ionization smoke alarms are ‘deadly’ (see Figure 8, [page 9](#)).

Tragically, combustion particles from lethal visible smoke will rarely cause the device to sound as the particles are too large and too few to interfere with the ionization current flow. Large particle smoke is what is generated in the early, smoldering stage of fire. Photoelectric smoke alarms, on the other hand, allow the invisible particles to pass through a light beam mostly undetected (hence less false alarms), whereas the larger lethal particles will interrupt the light beam and trigger an alarm.

Numerous scientific studies dating back to the mid 70’s prove photoelectrics will sound on average more than 30 minutes before ionization alarms in the lethal, smoldering stage of fires when, in most cases, ionization alarms, do not sound at all.

## IONIZATION Smoke Alarms Are DEADLY | WFSF 2020 Update

Australian Senate Smoke Alarm Inquiry - December 2015  
When Commissioner Mullins testified at the Senate Inquiry, he said:

**“Ionization Smoke Alarms Should be Banned . . .the Standard (AS3786-1993) is Flawed.”**



**Greg Mullins AFSM**  
Commissioner FRNSW

*“People have said that one is good for flaming fires (ionization) and one is good for smoldering (photoelectric). In my experience as a firefighter just about every fire I have ever been to started as a smoldering fire and went through a stage until it became a flaming fire.*

*To say that they are equal and good for different circumstances is to me a fallacy . . . an absolute myth . . . Ionization smoke alarms should be banned . . . the standard is flawed.”*

[CLICK HERE](#) for the full Australian Senate Inquiry Transcript

[Fig. 6. Commissioner Mullin’s Australian Senate Inquiry Testimony]

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As far back as 1974, the National Bureau of Standards (now called the National Institute of Standards and Technology or NIST), conducted a series of tests called “The Indiana Dunes Tests.” This two year test program revealed serious life-threatening problems with the ionization type of smoke detector. In fact, it failed many of the tests miserably. The original “Phase 1” Dunes test showed the ionization detector had 162 chances to operate during the smoldering fire tests. Only one of the detectors operated within 10 minutes. Only 28 times out of 162 or 17% activated within 30 minutes. The average time for the ionization detector to respond to smoldering fire was an appalling and deadly 65.8 minutes. Sadly, the testing results were ignored. As a result, the industry had their “so called” smoke alarm ready for the installation in millions of American homes and eventually homes worldwide. Ionization alarms are now in 95% of American homes. We planned to present all of these facts at the City Council meeting.

**“I was opening with a six minute video exposing UL’s flawed testing.”**

Marc McGinn, Fire Chief, Albany California

In the late afternoon of July 19th, I received a phone call from Howard Hopper, UL’s representative. He apologized for calling so late. He said he was “so sorry” he did not give me more time to prepare for a rebuttal for their presentation to the City Council. Little did Mr. Hopper know I was going to expose UL’s flawed smoke alarm standard with a six minute video showing scientific testing of ionization alarms by Texas A&M University.

What UL and Kidde failed to realize at the time was

that we were prepared with information and well-represented with “our” experts. We were not some unsophisticated small town. Albany had been sharpened over the years by many advanced cities in the San Francisco Bay Area. This small urban town of 17,500 was nestled between Berkeley, Richmond, and El Cerrito, and had its own identity. Albany has always been known as a fighting town not allowing anyone from the outside to influence City policy makers, and now their policy makers were going to be seriously tested once again.

**“Ionization smoke alarms may not operate in time to alert occupants early enough to escape. . .”**

Official Positions: AFAC 06/2006, IAFF 10/2008

After showing the damaging video of UL’s testing methods and exposing the deficiencies of the ionization alarm, Both UL and Kidde had an opportunity to refute the well documented video. Their pathetic comments fell on deaf ears. Dean and Doug, the “Fathers For Fire Safety,” followed UL and Kidde’s comments by telling passionate stories of the deaths of their daughters and how their daughters’ deaths would have most likely been averted had photoelectric alarms been installed. Dean closed by confronting both UL and Kidde saying he was appalled that they had turned up at the meeting and they were only there to put profits ahead of saving lives. The silence in the room was so intense you could have heard a pin drop. But our testimonies were not over.

The coup de grâce for UL and Kidde came when an unassuming 84 year old Richard Patton slowly walked up to the podium. The opposition, especially

**IONIZATION Smoke Alarms Are DEADLY | WFSF 2020 Update**



**WFSF Warning UL about their Flawed Standard | Oct 2005**

[www.TheWFSF.org/ulletters](http://www.TheWFSF.org/ulletters)

Hosford vs BRK Brands Inc; Underwriters Laboratories (UL), Inc; et al | Dec 2011

**“Defendant UL was negligent or wanton in one or more of the following respects.”**

- a) “By modifying the smoldering fire test in UL Standard 217 to eliminate materials that presented foreseeable challenges to ionization smoke alarms. . .
- b) By failing to formulate and implement safety standards for ionization smoke alarms that require ionization smoke alarms to detect slow smoldering fires in a timely manner . . .”

[www.TheWFSF.org/ulsued](http://www.TheWFSF.org/ulsued)

[Fig. 7. UL Sued for alleged fraudulent Testing of Ionization Alarms]



UL, knew very well of Richard Patton's reputation but had no idea what he looked like. Richard had a long standing feud with UL, NFPA, and the manufacturers of what he called a "phony" smoke detector. Because of Patton's vehement opposition to ionization alarms and his well documented fight for 35 years, this accomplished fire protection engineer was a giant in the industry. When he introduced himself to the Albany City Council, UL's representative dropped his head in his hands. He knew this fight was lost.

**"The Albany City Council passed an unequivocal and emphatic 5-0 vote to sign Ordinance 2010-06 into the Albany Municipal Code."**

Chief Marc McGinn | 06/2010

The Albany City Council passed an unequivocal and emphatic 5-0 vote to sign Ordinance 2010-06 into the Albany Municipal Code which mandated all new and remodeled homes in the city have photoelectric-only smoke alarms. As of this writing, there has been much discussion concerning the ineffectiveness of ionization alarms. On August 15, 2010 the San Francisco Chronicle ran a front page feature story about the ionization deficiencies ([see pages 10 & 11](#)). Local Bay Area television station, KIVU, interviewed the City of Palo Alto's Fire Marshal who stated they will be adopting similar legislation to Vermont, Massachusetts, and the City of Albany.

CBS Atlanta interviewed 'Fathers For Fire Safety' on October 5th regarding ionization deficiencies that led to the death of their daughters. All of this does not come without a fight. Kidde has recently hired former fire officials to dissuade and confuse the public about the deficiencies of ionization technology by stating both technologies are adequate. Moreover, they advocate purchasing a combination alarm that cost more and will still sound a nuisance alarm when cooking. Combination ionization/photoelectric alarms have the same unacceptable disconnection rate with as stand-alone ionization alarms.

**"Don't just change your batteries . . . change your detector to a photoelectric-only smoke alarm."**

International Association of Fire Fighters | 10/08

It has been estimated that the failure of ionization alarms to operate in time leads to over 1,000 deaths and 5,000 injuries annually in the U.S. alone! It is also estimated that over 50,000 people are in graves today because flawed smoke alarm standards have

allowed these insidious devices to be sold to an unsuspecting global public.

In 2008, the 292,000 member, International Association of Firefighters (IAFF) urged the public to change their smoke alarms to photoelectric-only.

The IAFF's official position came into effect two years after an almost identical position statement was released by the Australasian Fire & Emergency Services Authorities Council (AFAC), AFAC is the peak representative body for all Australian and New Zealand fire departments.

Firefighters are tired of pulling dead bodies out of homes when ionization alarms fail to operate in time to alert occupants early enough to escape - and who would know better than over 300,000 firefighters!

**IONIZATION Smoke Alarms Are DEADLY | WFSF 2020 Update**

**'Ionization Smoke Alarms are DEADLY'**

"I think the ionization smoke alarm is responsible for as many as 10,000 deaths since 1990."



**Chief Joseph (Jay) Fleming**  
Boston Fire Dept., MA, U.S.A.

**Is "DEADLY" Too Emotive?**

Some defenders of ionization alarms say the use of the word "deadly" is too emotive.

In the Summer of 2011, just over a year after the San Francisco Chronicle report, the Australian Volunteer Fire Fighter's Association (VFFA) published a WFSF report titled: ['Ionization Smoke Alarms Are DEADLY.'](#)

This report fully vindicates the stand taken by the VFFA, the WFSF and many others who call ionization alarms "deadly".

[Figure 8. Chief Fleming's Warning about Ionization Alarms]

## Albany fire chief urges switching smoke alarms

PROTECTION Chief in Albany urges switching homes' detectors

By Kevin Fagan Published 4:00 am PDT, Sunday, August 15, 2010



Albany Fire Chief Marc McGinn, holds a photoelectric smoke detector at the Albany Fire Station in Albany, Calif. on Tuesday August 10, 2010. McGinn is calling for the immediate removal of what he claims are fraudulent, "deadly" ionization so-called smoke alarms from all stores and homes in America and replacing them with photoelectric devices

Michael Macor/The Chronicle

Albany Fire Chief Marc McGinn says most smoke alarms in American homes are nearly useless and put residents in danger - so he's on a crusade to get them all swapped out for a cheap, better alternative.

Switching fire alarms could save about 1,500 lives a year, he believes, but the chief faces a mighty task to get the nationwide change he thinks is so badly needed.

Last month, McGinn persuaded the Albany City Council to become the first U.S. city to require every new building to use the kind of smoke alarm he recommends. Vermont has instituted a similar requirement.

That leaves 49 other states and thousands of cities to go. The obstacles: the primary manufacturer of smoke alarms and the two national agencies that regulate the devices.

"I don't care how hard I have to stir the pot, this is the most important fire safety issue of our time," the 55-year-old McGinn said. "People are dying and being disfigured by fire every day we wait, and I just can't stand to think about that."

The issue boils down to the two main types of fire alarms sold in America: ionization alarms and photoelectric alarms. The first type is bad, McGinn says.

The two alarms look nearly identical: They're the white circles of plastic most folks are familiar with, and 96 percent of American homes have at least one kind.

### 2 types of alarms

An ionization alarm contains a tiny amount of radioactive material to set up an ionization chamber that creates an electric current. When the current is disturbed by smoke,

the alarm sounds. It costs about \$10.

A photoelectric alarm, in contrast, contains a small beam of light. When smoke disturbs that beam, the alarm sounds. It costs about \$15.

The difference has to do with how smoke from different fires moves through the air and what is in that smoke.

For example, an overcooked dinner may produce small particles of smoke that waft through the air. The ionization alarm is sensitive to those tiny flecks, prompting false alarms. The photoelectric alarm can tell better when there isn't enough smoke to be a dangerous fire.

On the other end of the spectrum is the smoldering fire, which produces bigger particles. Those aren't as easily detected by the ionization alarm until the smolder becomes flames that produce the smaller particles.

Virtually all residential homes with smoke alarms have the

**"Ionization alarms are so inferior to the photoelectric alarms that they are deadly."**

Chief Marc McGinn, August 2010

ionization type, and virtually all commercial buildings have the photoelectric types, according to several studies.

McGinn - armed with a cluster of independent research conducted since the 1970s when the alarms hit the market and governments began urging everyone to get them - says the ionization alarms are so inferior to the photoelectric alarms that they are "deadly." Unlike photoelectrics, ionizations were built primarily as flame detectors, he says - and people need warning long before a fire gets to the flame stage so they can flee, avoid fatal smoke inhalation or even react to squelch the blaze.

"Ionization alarms are the ones that go off when you burn your toast, and they can be so annoying that nearly a quarter of the people who own them turn them off," McGinn said. "But even more important, they go off a lot slower than photoelectrics, and by the time you hear them it can be too late.

"We absolutely have to get rid of them."

### Urging the switch

McGinn was inspired to his crusade four years ago when he happened upon a report on the two types of alarms. He wound up at the website of the World Fire Safety Foundation, an Australian nonprofit organization that advocates the switchover to photoelectric alarms. The group's site is stuffed with statistics and reports showing that ionization alarms go off more than 15 minutes later than photoelec-

trics in many fires, and sometimes not at all.

McGinn said he pulled Albany Fire Marshal Brian Crudo into his office and exclaimed: "Look at this. We're in trouble."

He called foundation co-founder Adrian Butler in Australia, and by the end of the conversation, he'd decided he had to raise the alarm about alarms.

One of the reports that convinced McGinn was written at Texas A&M University in 2003. It showed that ionization detectors take 15 minutes longer or more than photoelectric ones to detect smoldering fires. Those are particularly deadly because they often start while people are asleep and kill them with smoke before they can react. About 90 percent of U.S. homes at the time contained ionization alarms, the university said.

The Barre (Vt.) Fire Department did an experiment in 2006 that showed a photoelectric alarm went off in 11 minutes, while the ionization alarm sounded after 1 hour and 6 minutes.

## **"We never give up because all these people keep dying."**

Adrian Butler, Chairman, WFSF, August 2010

A 1980 report by a subcommittee of the International Association of Fire Chiefs concluded that, "because most home fires start from a smoldering source," the subcommittee "can take no other course but to recommend the installation of photoelectric detectors."

"We've been doing this for 10 years, and I've talked to few people with as much energy as Marc McGinn," Butler said in a phone interview. "We never give up because all these people keep dying, and I can tell he feels the same way."

## **Lives to be saved?**

Statistics from organizations including the National Fire Protection Association and the U.S. Fire Administration show that 3,000 people die every year in home fires. Two-thirds of those deaths occurred in homes where smoke alarms were either not present or not working. About 22 percent of U.S. fire alarms are disconnected - most by people irritated at false alarms. The disconnected alarms are virtually all ionization alarms.

Based on those statistics, McGinn estimates that if photoelectrics were used nationally instead of ionization alarms, the number of fire deaths could be cut at least by half to about 1,500. That's because the photoelectrics would not only be more effective, but they also wouldn't be disconnected as nuisances, he said.

"We cannot afford to not make this switch," he said.

## **City Council convinced**

McGinn's research culminated at the Albany City Council

meeting on July 19, when he presented his evidence and the council voted unanimously to require that all new buildings, including homes, in the 17,000-person city have only photoelectric alarms. Any buildings that receive upgrades

## **"I was surprised to learn about this. Who knows about this? Who even knows there are two kinds of alarms?"**

Councilwoman Marge Atkinson,  
Albany City Council, July 2010

costing more than \$5,000, plus all apartment units, also fall under this law.

"I was surprised to learn about all this," Councilwoman Marge Atkinson said. "Who knows about this? Who even knows there are two kinds of alarms? It's pretty serious.

"It's exciting, in a way. I mean, we're just little Albany and we're taking this big step. But no one wasn't ready to back our chief up. We all came to the same conclusion after hearing everything."

Also at the council meeting were representatives of Kidde, the nation's biggest maker of smoke alarms, and Underwriters Laboratories, which establishes the standards for the nation's smoke alarms. They both argued that there is nothing wrong with ionization alarms, and noted that they can detect actual flames quicker than photoelectric alarms.

Both organizations have recommended for several years that homes use a dual alarm containing both ionization and photoelectric technology. They are joined in that recommendation by the National Fire Protection Association, which sets national standards for installing alarms.

McGinn opposes the dual alarms because they still contain ionization.

"I trust that the fire chief in Albany has the citizens' safety at heart," said John Drengenberg, consumer safety director for Underwriters Laboratories, in Illinois. "These guys are heroes and they want to save lives. But the people who come to our standards meetings haven't told us we need to change the standards."

That will change, if McGinn has his way.

The fire chief patterned much of his ordinance request after the law in Vermont, which went into effect last year at the behest of firefighters, and now he is determined to go state-wide. He will be urging a switch to photoelectric alarms in a presentation at next month's annual conference of the California Fire Chiefs Association, where he will be joined by two men from Ohio who lost daughters to fire and have made it their life's work to ban ionization alarms.

"This is going to have to be a very big change," McGinn said. "But I think if we can get California to do it, the rest of the country will follow."



## Chief Marc McGinn

**“It’s about banning the ionization technology and only having the photoelectric technology.”**



**Chief Marc McGinn on National Australian TV**  
Australia and New Zealand ‘Deadly Smoke Alarms Tour’  
Chanel 7, [Today Tonight](#) | Sydney, NSW, Australia | May 2010

### CALIFORNIA LEGISLATURE ASSEMBLY RESOLUTION

In April 2011 Chief McGinn was awarded an ‘Assembly Resolution.’ It states:

**WHEREAS, . . .Chief Marc McGinn worked tirelessly over the course of his career to outlaw the use of ionization detectors which are flame detectors and not smoke detectors. . .**

In May 2011 Chief McGinn presented the Assembly Resolution to WFSF Co-Founders during his Australian and New Zealand ‘[Deadly Smoke Alarms Tour](#)’.

See the Assembly Resolution  
[www.TheWFSF.org/resolution](http://www.TheWFSF.org/resolution)





## Queensland, Australia's Photoelectric-Only Smoke Alarm Legislation | 1 Jan 2017

Queensland is over twice the size of Texas and has [over 40,000 firefighters](#).

Queensland's photoelectric-only legislation came into force on 1 Jan 2017. It is arguably the world's best - it specifically excludes any ionization technology.

### Queensland Fire & Emergency Services (QFES)



#### 1. STATEWIDE BILLBOARDS

Brisbane Valley Highway, Esk, Queensland, Australia | Jan 2020

#### 2. GOVERNMENT WEBSITE



**Upgrade your  
smoke alarms today**  
Old ionisation smoke  
alarms can be slow to  
react, and may not give  
you or your loved ones  
enough time to escape.

[www.qld.gov.au/SmokeAlarms](http://www.qld.gov.au/SmokeAlarms)

#### 3. INFORMATION SHEETS

- [Photoelectric Smoke Alarms](#)
- [Smoke Alarm Legislation](#)



### May 2011 'Deadly Smoke Alarms Tour'

During his tour of Australia and New Zealand, Chief McGinn warns ionization alarms should be banned and recalled on national Australian TV.

2011 Underwriters Laboratories (UL) Sued  
Richard Patton claims since 1978 of flawed U.S. standards vindicated when U.L. sued for alleged fraudulent testing of ionization smoke alarms.



### 2014 Landmark Ionization Law Suit | Alabama, USA

Three young girls died in a home fitted with hard-wired, working ionization alarms. Kidde settled out of court after Dean Dennis & the WFSF were scheduled to testify in a landmark law suit using Australian Government (CSIRO) test data.

### 2014 | 60 MINUTES | 'THE ALARMING TRUTH'

After 11 people (7 children) died in Australia's worst ever house fire, 60 Minutes 'Special Investigation' exposed flawed smoke alarm standards. The Producer warned that the fire service, ". . . **were frightened and concerned with the industry politics . . . which are wasting time and risking more lives.**"





### 2015 Australian Senate Inquest

Australia's most senior fire official testifies that "Ionization smoke alarms should be banned."

### 2018 CSIRO Court Case

After a three year battle, WFSF takes Australian Government (CSIRO) to court over flawed testing of ionization alarms. Standard's Australia Committee member David Isaac, testifies about the flawed smoke alarm standard.



### 2019 S.A.A.M. Disruptive Technology

S.A.A.M.'s new technology device is capable of detecting smoke, fire and gases almost instantly. WFSF appointed to S.A.A.M.'s Advisory Board.

### 2021 U.L.'s New Smoke Alarm Standard

After decades of failing to change their standard, UL's new smoke alarm standard, with a legitimate smoldering fire test that ionization alarms are unable to pass, becomes law in the U.S.A.



Check out 'The Alarming Truth' - the stunning, fifty year story exposing flawed smoke alarm standards which have resulted in tens of thousands of injuries and deaths globally.

[www.IONIZATIONSmokeAlarmsAreDEADLY.org](http://www.IONIZATIONSmokeAlarmsAreDEADLY.org)

## Become a WFSF Supporter

### Help Save Lives as a World Fire Safety Foundation Supporter by. . .

- 1 . . .sending a free, customized version of  
'**IONIZATION** Smoke Alarms Are **DEADLY**'  
to your work colleagues, friends and family.

Your Custom Report will include:

- a) Your business, club or company name at the bottom of pages 2 to 15, and,
- b) A dedicated page 16 with your custom content.

Interested?

Email WFSF Chairman, Adrian Butler  
with your name and contact details:

[ab@thewfsf.org](mailto:ab@thewfsf.org)

Or. . .

- 2 . . .sending this report to your work  
colleagues, friends and family.

## Thank You!