Management Service Smoke Alarm | Safety Switch

SAFETY WATCH

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Legal Affairs and Community Safety Committee Parliament House BRISBANE QLD 4000

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RE: FIRE AND EMERGENCY SERVICES (SMOKE ALARMS) AMENDMENT BILL 2015

Dear Sir/Madam,

Safety Watch Australia (SWA) appreciates the opportunity to comment on the proposed *Fire and Emergency Services* (Smoke Alarms) Amendment Bill 2015 and 2016.

BACKGROUND

SWA is a group of well-informed experts who in conjunction with our legal team designed a **Risk Management System** that ensures our valued clients are placed beyond risk when dealing with **Smoke Alarms**, **Safety Switches**, **Pool Barrier** and **Corded Window Furnishings** compliance. As a Company we have been dealing with the Queensland Smoke Alarm legislation in its current form since 1 July 2007. SWA has built a strong and mutually respectful relationship over the years with QFES Compliance & Prosecutions Office providing industry feedback regarding current Smoke Alarm legislation. SWA has made a clear stance in relation to Photoelectric Smoke Alarms since our inception and has **never** offered an Ionisation Smoke Alarm on our product list. It is our professional view that our vast industry experience and understanding can provide a substantial contribution to the Parliamentary Review Committee's further considerations regarding proposed amendments.

CREDENTIALS

Technical Advisor: Graeme Hill has worked for eleven years as a firefighter both in the Military and the NSW Fire Brigade and ten years as technical Director of SWA. He has relevant qualifications in Firefighting, Workplace Safety Management, Building Fire Safety, Instructional Training and Assessment and Advanced Mentoring with many years' experience in lecturing and training personnel in Fire Suppression, prevention and Risk Management. Graeme has been a tireless supporter for the mandatory placement of Photoelectric Smoke Alarms in a domestic application for over ten years and has been an advisor to the World Fire Safety Foundation since 2007 resulting in the Northern Territory government mandating Photoelectric Smoke Alarms in 2011. He has also provided expert advice to the W.A review committee during their review of that States Smoke Alarm legislation along with advisory roles to training and education bodies within the real estate industry for the purpose of Smoke Alarm Compliance.

SYNOPSIS

Fire is a leading cause of accidental death. Residential occupancies account for most fire fatalities and most of these deaths occur at night during sleeping hours. Statistics indicate that a family will experience one serious fire every generation. Family safety and asset protection is paramount and applied within the combined readings of the current Legislation; Australian Standards; Manufacturers' Guidelines; building plans and specifications and principles of best practice. There are many factors when considering Smoke Alarm Compliance and therefore a step – by step approach must be undertaken to ensure compliance is met in accordance with all relevant factors. When the Inspector is assessing a dwelling for Smoke Alarm compliance, they assess the dwelling's environment as a whole applying the understandings from within the hierarchal tree utilising a Step – by – Step approach to all key considerations before selecting the required number of Smoke Alarms and identifying correct locations. If compliance information can't be referenced within the top hierarchal branches [QFESA and/or the BCA] the Inspector must search further afield to reference and apply other relevant Acts, Codes or Standards to formulate the correct applied value for compliance outcomes.

Any discrepancies found within the hierarchal tree will be determined by the hierarchal chain of command with the higher level taking precedence over a lower level:

- 1. Queensland Fire & Emergency Service Act 1990 (QFESA).
- 2. Building Code of Australia (BCA).
- 3. Australian Standard "Smoke Alarm" AS 3786-1993 (now 2014).
- Australian Standard "Fire detection, warning, control and intercom systems-system design, installation and commissioning" AS 1670.6-1997 with reference to Manufacturer's Instructions & State Government Recommendations
- 5. Common Law (Responsible Stewardship/Duty of Care) -
- 6. Read in association with The Residential Tenancies & Rooming Accommodation Act.

PURPOSE OF SUBMISSION

To make comment on the proposed amendments and to highlight areas of importance that we consider as an industry professional that may have been omitted/overlooked during the review process. Our continued and maintained focus is to assist the committee in producing a final Bill that ensures a defined functional statement is attained and maintained.

Example of Functional Statement: "The purpose of installing & maintaining smoke alarms is to provide early warning of a potential life threatening condition so that the occupant/s are provided the maximum possible escape time in order to safely exit the dwelling".

Commentary Relating to:

- Fire & Emergency Services (Domestic Smoke Alarms) Amendment Bill 2016
- Fire & Emergency Services (Domestic Smoke Alarms) Amendment Bill 2015
- Building Fire Safety (Domestic Smoke Alarms) Amendment Regulation (No X) 2016

--Summary of five points provided on page 10 of this submission --

COMMENTS TO AMENDMENT PROPOSAL

1. Clause 5 Amendment of s 104RB (Owner must install smoke alarm)

Section 104RB (2A) each smoke alarm must:

(a) Be a photoelectric smoke alarm

SWA: agree

SWA fully support this proposal. The limitations of Ionisation smoke alarms which is supported by material evidence further backs up the proposal to have photoelectric smoke alarms mandatory in residential dwellings. SWA only use photoelectric smoke alarms and as a Company, our statistics on the number of call outs for photoelectric smoke alarm issues is nonexistent compared to the call outs for Ionisation smoke alarm issues.

There are two types of fires [SLOW SMOLDERING AND FAST FLAMING] and as an argument to keep ionization alarms in our Queensland homes to ensure both would provide a warning should they occur. With both types of fires, the photoelectric provides warning in both cases therefore we DO NOT support this argument.

Should the Committee require evidence to support this stance, please do not hesitate to contact SWA directly for supporting evidence.

2. Clause 5 Amendment of s 104RB (Owner must install smoke alarm)

SWA: agree 'with further comment'

- A. Section 104RB (2) A smoke alarm must be installed on or near the ceiling; and
- B. Section 104RB (5) In this section –

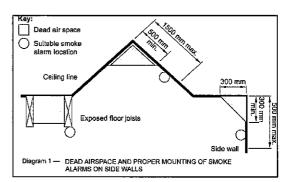
exit, for a storey of domestic dwelling, means any of the following that have direct access to a road or an open area –

- (a) A corridor or hallway;
- (b) A doorway;
- (c) A ramp;
- (d) A stairway.

Exit path, for a storey of a domestic dwelling means an area that has direct access to an exit for the storey. **Open area,** means an area that is open to the sky and has direct access to a road.

• Further comment relating to <u>"on or near the ceiling".</u>

This instruction is far too vague and should be clearly defined in terms of measurement. Currently the BCA and other major key considerations that are outlined in <u>AS1670.6</u> should be incorporated into the Bill. The below diagram demonstrates the location of the smoke alarm relating to positioning with clear measurements noted to ensure no confusion exists when installing or relocating smoke alarms in a domestic dwelling.



Further comment relating to <u>"storey".</u>

The term 'storey' is also far too vague and the definition of a STOREY has not been clearly defined in the QFESA, BCA or the Bill. A smoke alarm that is required to be installed on each storey that doesn't contain a bedroom and isn't already serviced by a smoke alarm needs to be clearly defined to ensure no ambiguity.

SWA have provided a case in point how this can be clearly shown to confuse a client when applying 'storey' to the installation or placement of a smoke alarm on every storey. Smoke alarms are required to be installed on every storey

even if they consist of only car parking, bathrooms and / or laundries. "Storey" in this context differs from the definition contained in BCA Volume One which excludes such spaces from being considered as a storey.

The suggested location for this smoke alarm will be in the path of travel people will most likely take to evacuate the building. This will ensure a warning is raised before smoke makes the common exit path impassable.

An example: If the bedrooms are located on the first floor, then a smoke alarm should be positioned near the area of the interconnecting stairwell at ground level.

If the "other storey" is not connected to the remainder of the building (Eg: a ground floor garage) the smoke alarm should be centrally located in the lower area. However, it may be reasonable, using a performance approach, not to install smoke alarms where the storey is predominantly open, such as the basement level of a high set house on stumps that is used for car parking or laundry purposes.

Storey as defined in the BCA Volume 1:

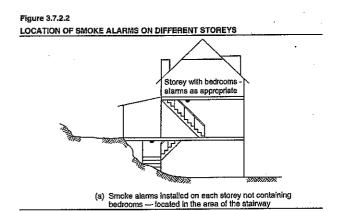
a space within a building which is situated between one floor level and the floor level next above, or if there is no floor above, the ceiling or roof above, but not

(a) a space that contains only

[3.7.2.3.1] Location -- Class 1a buildings

- (i) a lift shaft, stairway or meter room; or
- (ii) a bathroom, shower room, laundry, water closet, or other sanitary compartment; or
- (iii) accommodation intended for not more than 3 vehicles; or
- (iv) a combination of the above; or
- (b) a mezzanine.

Family

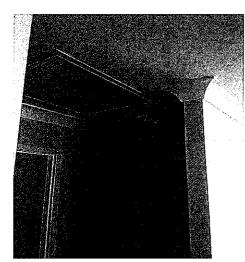


In addition to specifying those parts of Class 1a buildings where smoke alarms must be installed, cl 3.7.2.3 requires them to be installed on or near the ceiling. The requirements are illustrated by Figure 3.7.2.1, diagram a, and Figure 3.7.2.2.

A further amendment should be proposed to be implemented either into the **Regulation** regarding **Proper positioning of Smoke Alarms or the creation of a Queensland Development Code** that is specifically tailored to govern the correct positioning of Smoke alarms for Domestic Application so that we are not working with a BILL or Act that clearly is ambiguous and defeats the purpose of installing a smoke alarm to provide an early warning of fire and when applying the Act to the positioning of a smoke alarm, the Act is not continuing to support incorrectly located and/or positioned in an environment that <u>degrades the smoke alarms</u> performance.

IMPORTANT: SWA have provided a POINT IN CASE that demonstrates that the correct positioning of smoke alarms needs to be addressed in the Bill and needs to incorporate noted measurements.

Point in case: The smoke alarm in the rear hallway is located < 400mm from the return air vent. Assessed under the provisions of AS1670.6



AS1670.6-1

2.1.4 (a) WITHIN 300 mm OF A LIGHT FITTING:

The current position of existing 240v Smoke Alarm is located in the rear hall < 300mm from a light fitting and thereby fails to conform with the proper installation and commissioning requirements within a domestic dwelling IAW AS1670.6-1

2.1.7 FORCED AIR CIRCULATON

The smoke alarm is located within < 400mm from a forced air environment [air intake] and thereby fails to confirm with the proper installation and commissioning requirements within a domestic dwelling IAW AS1670.6-1

RECOMMENDATION:

Relocate the existing smoke alarm to >300mm from the light fitting and <400mm from the forced air intake to ensure early warning is provided from the smoke alarm for the occupant of bedroom located in this hallway.



AS1670.6-1 and BCA functional statement, BCA Diagram 1.

2.1.4 (b) IN DEAD AIR SPACES:

The current position of the existing smoke alarm has been installed in dead air space <300mm from the junction of the ceiling and wall.

RECOMMENDATION:

Recommend relocating the existing 240v smoke alarm from dead air space to a position outside the 1st bedroom entrance end of the hallway way.

3. Clause 5 Amendment of s 104RB (Owner must install smoke alarm)

SWA: disagree 'with further comment'

- A. Section 104RB (2B)
 - (a) A 240v smoke alarm that is hard-wired to the domestic dwelling's electricity supply; or
 - a. A 9v lithium battery; and
 - b. Manufactured to have a battery life of at 10 years.

The majority of 240v smoke alarms available on the Australian market contain an alkaline battery used as a backup supply as required within AS3786. Design requirements IAW AS3786 require:

"Should the 9v battery be remove from a 240v alarm, the alarm must have a <u>Missing Battery Indicator Device</u> that makes it difficult to close or reconnect the 240v supply without the presence of the backup battery".

The overwhelming majority of smoke alarms currently installed and available on the market are unable to operate without the presence of the backup 9v battery. In Short:

"Neither a 9v Smoke Alarm or a 240v Smoke Alarm can operate without the presence of the removable battery".

The amendment to the Bill is inconsistent that a 9v smoke alarm be required to contain a lithium battery whilst 240v smoke alarm is able to be powered by an alkaline battery.

Regular testing, maintenance (*including battery change*) and cleaning of smoke alarms is recommended by all manufacturers in their operating manuals and specified in both the current QFESA and the proposed amendments Bills 2015 & 2016. The majority of smoke alarms available on the Australian market are sold with and designed to fit the standard sized 9-volt alkaline batteries and may not function correctly if lithium batteries are retro fitted due to lithium batteries being fractionally larger than the standard alkaline batteries. If a lithium battery is installed into any smoke alarm where the battery is a removable type, the battery can be removed rendering most smoke alarms ineffective therefore defeating the purpose of this Bill.

Fact: Manufacturers of Smoke Alarms clearly provide specific operating parameters regarding the type of 9v batteries that can be used in their alarms and any use of non-specified batteries will void the manufacturers warranty and more importantly the labeling contained within the packaging and/or on the Smoke Alarm provide clear Warning: (Common wording used on the majority of Smoke Alarms).

"CAUTION – Use only specified batteries. The use of different batteries may have a detrimental effect on operation or may cause the battery to explode resulting in fire".

Our experience has shown that the lithium batteries currently available within the Australian market rarely last the specified ten-year life span (in some cases lithium batteries last as little as three years).

Manufacturers of lithium batteries do not warrant their product to last 10 years.

Currently, the retail price for a 9-volt lithium battery is between \$20.00 and \$30.00. We believe that the inclusion of this requirement will add unnecessary costs to owners of domestic dwellings. Further, in an effort to reduce the current high price of lithium batteries, wholesalers and distributors may be tempted to import inferior quality lithium batteries and introduce them into the Australian market. The recent issues that have arisen from the importation and distribution of the inferior "Infinity cable" is a similar example of the risks the importation of inferior lithium batteries could pose. Mandating removable Lithium batteries in smoke alarms is both dangerous and financially unreasonable.

POINT IN CASE: Between 2007 and 2009 SWA installed 9v Smoke Alarms that allowed the use of a removable lithium long life battery in hundreds of our client's rental properties. During the installation process a large sticker was placed across the battery and battery compartment stating: "DO NOT REMOVE AND ONLY REPLACE WITH LITHIUM BATTERY ONLY".

Within 3 years of installation > 80% of the removable lithium batteries had been removed and replaced with a standard 9v alkaline battery. The top three reasons for this were:

- 1. Removed battery due to nuisance alarming in existing Ionisation & photoelectric smoke alarms and replaced with a 9v alkaline
- 2. Changed battery once per year as standard practice but replaced it with a 9v alkaline.
- 3. Removed the lithium battery to use in another home appliance/toy and replaced it with a 9v alkaline.

"IF 9V LITHIUM BATTERIES ARE TO BE CONSIDERED AS A VIABLE POWER SOURCE THEY MUST BE NON REMOVABLE CONTAINED WITHIN A SEALED CELL OF THE SMOKE ALARM ITSELF".

There are many drafts on the table to shift between each providing extracts of proposed amendments which the reviewer has to somehow piece together in the desired logical order. I have found mention in:

Building Fire Safety (Domestic Smoke Alarms) Legislation Amendment Regulation (No. 1) 2016

55D Prescribed ways of powering smoke alarms—Act, s 104RBA(5)(a)

- (1) The ways of powering a smoke alarm stated in subsection
- (2) are prescribed for a smoke alarm installed in a domestic dwelling under section

104RBA.

- (2) Each smoke alarm must be powered by-
 - (a) being hardwired to the domestic dwelling's electricity supply; or
 - (b) a battery that is-
 - (i) built into the smoke alarm in a way that prevents the battery being removed; and
 - (ii) manufactured to power the smoke alarm for at least 10 years without being recharged.

Further, 9-volt smoke alarms with a sealed lithium battery require the alarm to be completely disabled (rendered non-functional) to stop the alarm from sounding in the event of a false activation, leaving the occupants without a working smoke alarm in the event of fire. Should this occur the smoke alarm would need to be replaced at a sizable cost to the owner (at least \$30 - \$40 more expensive than a standard 9v alkaline battery powered alarm). Manufacturers only offer a limited 3 - 5 year warranty on these types of Lithium powered smoke alarms and with this technology yet to be proven to last a minimum of ten years this places a significant financial burden on the effected stakeholders should this type of alarm be preferred over others.

SWA services tens of thousands of rental properties and private owner occupied domestic dwellings throughout Queensland and it is our professional experience that in dwelling that we manage - there is less than 2% that have a non-working smoke alarm due to the 9v alkaline battery having been removed. With the current QFESA legislation regarding servicing of rental properties and our companies risk management processes surrounding tenant education and quarterly reminders to test, clean and change batteries as required, we find the proposal of lithium technology an un warranted evil that has little evidence to support Best Practice outcomes and may in fact cause greater financial burden and less working smoke alarms in a domestic application.

The requirement for owners/occupants to replace the batteries in smoke alarms encourages the owner/occupants of residential dwellings to test and clean the smoke alarm, as well as promoting smoke alarm and fire awareness. We believe that the inclusion of lithium powered technology will either promote complacency with regards to smoke alarms e.g. "set and forget" mentality or encourage owners/occupiers to dismiss all smoke alarm requirements due to the additional costs that lithium batteries and/or Lithium powered smoke alarms with a non-removable battery pose. The State Government authorities already have little to no authority to enter a domestic dwelling to enforce current legislation so it is important to ensure we do not take a backwards step by creating new legislation that further disables stakeholders to attain Smoke alarm Compliance through self-regulation.

Lithium is a toxic substance. The Australian Competition and Consumer Commission, has advised that, if swallowed, lithium batteries can get stuck in a child's throat and burn through the esophagus, causing severe burns or death. Should an occupant unwittingly attempt to place a lithium battery in a smoke alarm that is not designed to take said power source, it may explode or catch fire.

It is our professional opinion that the inclusion of a proposal regarding any form of lithium technology within the smoke alarm amendment has the possibility to decrease the overall number of working smoke alarms in Queensland properties and could potentially pose a serious risk to the public's health and safety.

4. Clause 5 Amendment of s 104RB (Owner must install smoke alarm) (2016 Bill)

SWA: agree 'with further comment'

Section (5) (e) be interconnected to every other smoke alarm installed in the domestic dwelling.

Whilst interconnection may seem an ideal solution on paper [and is achievable in new builds or major renovations] trying to retro fit older homes is going to be virtually impossible not to mention costly. The electrical Safety Office still considers many dwellings to be electrically unsafe after the insulation debacle resulting in work place health and safety practice guidelines for working within these high risk areas of which any proposal to mandate interconnection in existing dwelling would surely place workers into this unsafe territory.

With new innovations in wireless interconnection between smoke alarms provides a possibility to achieve a desired outcome but at a heavy price per alarm to the stakeholders. Whilst this sounds like an easy fix, this is reasonably new technology and has yet been proven to be reliable for the life span of a Smoke Alarm (10 Years). Of course we can then

look at an example of an existing two storey domestic dwelling built prior to 1 May 2014 with three bedrooms requiring five smoke alarms under the current proposed amendments.

- · One on the ground floor storey in the normal path of egress
- One in the hall on the second storey; and
- · One in each of the three bedrooms

Should a smoke alarm produce a false alarm event, all five alarms will go into alarm mode. In this circumstance the occupant must locate the individual alarm that has caused the event in order to address the problem and stop the alarms (all five) from sounding. It is our professional experience that the average person has neither the knowledge nor the patience to systematically go through the house to find the offending alarm and as a consequence; may render each beeping alarm that they encounter unserviceable until they finally address the correct alarm to stop the alarming. It is often the case that batteries are removed and not replaced until the next day or perhaps not at all; in this instance if the batteries are the lithium removable types, it could be a costly exercise to replace any missing batteries. And, in the case that lithium non-removable batteries are present in the smoke alarms the smoke alarms themselves are disabled (rendered non-functional) and would need to be completely replaced. Interconnection has the ability to render a dwellings entire smoke alarm system inoperable leaving the occupants totally unprotected.

It is more important to mandate the optimal number of correctly position working photoelectric smoke alarms in domestic dwellings (especially existing dwellings) than to legislate a requirement for all existing homes to be retro fitted to achieve interconnection. The degree of difficulty relies on the individual design, layout and construction type of each existing dwelling and once again we need to ensure we do not create new legislation that further disables stakeholders to attain Smoke alarm Compliance and/or place lives at risk as stated above.

SOLUTION:

New homes that have been built after 1 May 2014:

- **MES** to interconnection between all **minimum** placement common area smoke alarms (between each part of the dwelling containing bedrooms and other parts of the dwelling, if bedrooms are off the hallway in that hallway, and any other storey not containing bedrooms) in:
 - o all new homes that have been built after 1 May 2014 as currently prescribed in the BCA; and
 - o Substantially renovated dwellings as currently proposed within the 2016 amendment Bill.
- to interconnection in bedrooms for dwellings of any age.

All Existing homes built prior to 1 May 2014:

• to retro fit out regarding interconnection of smoke alarms.

5. Clause 6 Amendment of s 104RD (Testing smoke alarms) (2015 Bill)

SWA: agree 'with further comment'

Section 104RD (1) the owner of a domestic dwelling must test each smoke alarm in the dwelling in compliance with this section -

- (a) At least once every 1 year; and
- (b) Within 30 days before the start of a tenancy in the dwelling.

The term "at least 1 every year" is too ambiguous and this could be construed to mean each calendar year and therefore as an example the smoke alarms could be tested in January 2016 and not tested again till December 2017 and the owner would still comply; the reality of this wording is that the alarms could be tested almost 2 years apart

The term "Owner" should be individually defined into two categories:

- · a property owner that lives in a dwelling; and
- a property owner that rents the property out.

Our proposed re-wording:

104RD (testing Smoke Alarms)

The owner of a domestic dwelling who resides in that dwelling and that dwelling is not subject to a tenancy agreement must test each smoke alarm in the dwelling in compliance with this section.

The owner of a dwelling that is rented must test each smoke alarm in the dwelling in compliance with this section.

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- (a) At least once every 12 months if the owner resides in the dwelling and it is not subject to a tenancy agreement; OR
- (b) Within 30 days before the start of ANY tenancy or no later than 7 working days after the start of ANY tenancy if the dwelling is a rental property; OR
 - a. If a fixed term tenancy agreement is greater than 12 months the owner of the rental property must test each smoke alarm in the dwelling in compliance with this section and at least once every 12 months during the period of the fixed term agreement.
 - b. If a fixed term tenancy ends and a periodic tenancy is commenced the owner must comply with sub section 104RD (2) and every 12 months thereafter should the periodic tenancy continue without another fixed term agreement being entered into.

Owner of a Rental Dwelling: The owner should only need to comply with one or the other depending on the use of the dwelling. The reason for this amendment to the current proposed wording is that property owners that rents their dwelling should be held in higher regard as the occupants are not responsible for ensuring the property is safe. If the current proposed amendment wording is to be interpreted for an owner of a rental dwelling to test once a year and also within 30 days prior to the start of a tenancy this is an unacceptable intrusion of privacy upon the tenant/s who are entitled to quiet and peaceful enjoyment under their agreement and should not be subject to unwarranted entry during the term of their agreement. However, if the obligation to test a smoke alarms is met within the prescribed 30 day period there is no good reasoning for the 12 monthly extra intrusion.

Owner Occupier: An owner living in their property that knows and understands the dwelling need only be responsible for testing the smoke alarms as a minimum once every 12 months as there is consistency of occupants should be aware of and attend to any faults that may arise between testing cycles.

CONCLUSION:

- Owners of rentals to test their smoke alarms within 30 days of start of tenancy OR within 7 days after tenancy has commenced.
- Owners that occupy their own homes: test once every 12 months.

Summary

- Pt1. Agree to the amendment to have ONLY photoelectric smoke alarms installed in domestic dwellings.
- Pt2. Agree 'with further comment' on location of smoke alarm placement.
 - o On or near the ceiling needs to be defined and measurements provided.
 - o Storey needs to be clearly defined
- Pt3. Disagree 'with further comment' to amendment to include lithium batteries.
- Pt4. Disagree 'with further comment' to amendment to include interconnection of smoke alarms.
- Pt5. Agree 'with further comment' to have smoke alarms tested 1 every year and within 30 days of the start of tenancy.

Suggestion for tenanted dwellings:

- Within 30 days before the start of ANY tenancy or no later than 7 working days after the start of ANY tenancy if the dwelling is a rental property; OR
- If a fixed term tenancy agreement is greater than 12 months the owner of the rental property must test each smoke alarm in the dwelling in compliance with this section and at least once every 12 months during the period of the fixed term agreement.
- If a fixed term tenancy ends and a periodic tenancy is commenced the owner must comply with sub section 104RD (2) and every 12 months thereafter should the periodic tenancy continue without another fixed term agreement being entered into.

Suggestion for owners of dwellings NOT tenanted:

Once every 12 months.

Thank you again for the opportunity to comment on the proposed Bill 2015 and 2016 and trust this information is helpful in ensuring the Bill that is proposed is both consistent and practical in ensuring life and property are receiving early warning of a smoldering fire and not result in another Slacks Creek or Golinski situation resulting in loss of life and property.

Submission-researched and prepared by Graeme Hill, Director of Safety Watch Australia. Signed and submitted by:



Kelly Hill

CEO

Safety Watch Australia

Dated: 23 March 2016