



## Determination 2015/042

# Regarding whether a compliance schedule is required for a substation containing smoke detectors at 219 Spey Street, Invercargill

### 1. The matter to be determined

- 1.1 This is a determination under Part 3 Subpart 1 of the Building Act 2004<sup>1</sup> (“the Act”) made under due authorisation by me, John Gardiner, Manager Determinations and Assurance, Ministry of Business, Innovation and Employment (“the Ministry”), for and on behalf of the Chief Executive of the Ministry.
- 1.2 The parties to the determination are:
- the owner of the substation, PowerNet Ltd, (“the applicant”) acting though an architect as the agent (“the applicant’s agent”)
  - Invercargill City Council (“the authority”), carrying out its duties as a territorial authority or building consent authority
- 1.3 This determination arises from the decision of the authority to require a compliance schedule as the applicant proposes to install smoke detectors in a substation (“the substation”) to notify an offsite network control room in the event of a system irregularity or failure.
- 1.4 The matter to be determined<sup>2</sup> is therefore whether the authority was correct in requiring a compliance schedule for the proposed substation containing smoke detectors.
- 1.5 In making my decision, I have considered the submissions of the parties and the other evidence in this matter.
- 1.6 Unless otherwise stated all sections relate to sections of the Act and all clauses relate to clauses of the *Building (Specified Systems, Change the Use and Earthquake-prone Buildings) Regulations 2005* (“the Regulations”).

### 2. The proposed building work

- 2.1 The proposed building work consists of:

*The substation:* a precast reinforced concrete single storey substation to accommodate electrical network transformers

*The control/switch room:* a building to accommodate associated controls and switching gear.

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<sup>1</sup> The Building Act, Building Code, compliance documents, past determinations and guidance documents issued by the Ministry are all available at [www.building.govt.nz](http://www.building.govt.nz) or by contacting the Ministry on 0800 242 243.

<sup>2</sup> Under sections 177(1)(b) and 177(2)(e) of the Act.

- 2.2 The buildings are separated 4950mm from each other by the proposed radiator area, and each structure will have a 1200mm trench located beneath the ground floor to house room cables. The substation is usually unoccupied except for periodic equipment/systems inspections.
- 2.3 The proposed smoke detectors are to be hard wired to the applicant's equipment monitoring system which notifies their off-site network control room of a systems irregularity or failure.

### **3. Background**

- 3.1 On 12 August 2014 the applicant engaged a fire engineer to determine the 'minimum fire safety precautions that must be installed within the proposed substation to demonstrate compliance with section 112 of the [Act] with respect to the fire regulations'.
- 3.2 On 23 February the applicant's agent emailed the authority noting that under the authority's current policy, if smoke detectors are present in the building (even if they do not form part of a complaint warning system) they would be deemed as a specified system even if they are not required for compliance with the Building Code. The applicant's agent sought a variation to the current policy for the applicant's substation, and proposes the following as mitigating measures, in summary:
- The applicant's health and safety induction process for all personnel visiting the site shall include a briefing statement that no fire alarm or warning systems are in the building and smoke detectors are for systems protection purposes only.
  - A permanent sign to be installed inside the entry doors that the smoke detectors are for system protection only and no fire alarm or warning systems are present.
- 3.3 On 12 March 2015 the authority sought advice from an officer of the Ministry, stating the authority was 'of the opinion that the system is a specified system therefore it should be on the compliance schedule'.
- 3.4 On 12 March 2015 the officer of the Ministry provided advice, in summary:
- If there is a specified system in a non-single household unit it needs a compliance schedule. The Ministry has released guidance advising any smoke detection system be put on the compliance schedule even if it is connected to the security system.
  - The authority cannot grant exemptions from building warrant of fitness requirements.
  - It needs to be determined whether the 'structure' in question is a building. The officer of the Ministry provided some further advice on how to determine whether a structure is a building.
- 3.5 On 12 March 2015 the authority sent the above response to the applicant's agent noting that it appeared a compliance schedule was needed.
- 3.6 On 12 March 2015 the applicant's agent responded stating the smoke detectors in the proposed building would be 'hard wired' to the applicant's security and equipment monitoring system. The system notifies their off-site network control room of a security breach or systems failure. The applicant's agent considers the smoke detectors are not part of a specified system as they do not affect the use of the building.

- 3.7 On 12 March 2015 the authority emailed the applicant's agent stating the advice by the officer of the Ministry stated that a smoke detector should be on a compliance schedule.
- 3.8 On 12 March 2015 the applicant's agent responded that the advice from the Ministry may have been directly related to smoke detection being added as supplementary to alarm warning systems.
- 3.9 On 19 March 2015 the officer of the Ministry provided further advice. In summary:
- The applicant still needs to consider whether the substation is a building, it could be a candidate for 'other structures not intended to be occupied that are part of, or related to, a NUO system'.
  - The first step in determining if a given system or feature is a specified system is to establish whether the system is (or fits under) one of the specified systems listed in the Regulations. It is useful to look at whether the system is regulated by the Act or Building Code.<sup>3</sup>
  - Where there is ambiguity as to whether the specified system is regulated by the Act or Building Code, it is helpful to establish whether the system is for the safety of occupants of the building and/or the protection of other property, or is for the safety of plant operators only in which case it would likely be covered by health and safety legislation.
- 3.10 On 19 March 2015 the applicant's agent emailed the authority and the officer of the Ministry, stating in summary:
- No specified systems are required for compliance with the Building Code. The buildings are usually unoccupied except for periodic equipment and systems inspections. The smoke detectors are not connected to any onsite warning system that contributes to life safety or protection of other property.
  - The smoke detectors are for equipment monitoring only.
  - The applicant believes it sufficient to demonstrate that there are no specified systems within the buildings, therefore a compliance schedule and a building warrant of fitness are not required, therefore a debate as to 'whether the buildings are actually 'buildings' is not appropriate.'
- 3.11 The Ministry received an application for determination on 2 April 2015.

## **4. The submissions**

### **4.1 The applicant**

- 4.1.1 The applicant's agent provided a written submission with their application for determination. In summary,
- The Acceptable Solutions for Clause C of the Building Code do not require a fire alarm system or emergency lighting systems and there are no other systems which would be deemed as specified systems under the Act.
  - Referring to section 7 of the Act to the definition of "specified system" and the Compliance Schedule Handbook at section 2, clause 7; the applicant's agent stated the proposed smoke detectors do not contribute to the proper functioning

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<sup>3</sup> Building Code, First Schedule Building Regulations 1992.

of the building – they are for monitoring performance of equipment within the building.

- The smoke detectors do not interface with any emergency warning systems within the building, or any evacuation or smoke control systems. They do not contribute directly to health or life safety, and failure of the equipment monitoring features would not directly have the potential to adversely affect health or life safety.
- The smoke detectors do not fit within the scope descriptions of SS2 Automatic or manual emergency warning systems, SS2/3 Interfaced fire or smoke doors or windows, or SS13 Smoke control systems or any other specified system

4.1.2 The applicant provided the following documentation with the application:

- The site plans for the substation and associated buildings.
- A report from the applicant's fire engineers dated 12 August 2014.
- Email correspondence between the applicant, the applicant's agent and the authority dated between 23 February 2015 and 19 March 2015.

4.1.3 On 16 April 2015 I asked the applicant for further clarity on the following matters:

- What type of air conditioning system does the substation have?
- Is it possible for the smoke detectors to emit sounds on site?
- Is the substation new building work or an alteration to an existing building?

4.1.4 On 16 April 2015 the applicant's agent responded noting the following:

- The air conditioning system is very simple; the two rooms in the controls building have a heat pump system to maintain the internal air temperature within a 10°C band to maintain equipment efficiency and performance. The transformer building rooms are naturally ventilated.
- The smoke detectors do not emit sounds and are not connected to any other system that will emit sounds on site. If activated they will emit a warning signal within the network systems control room located offsite.
- The substation is a new development on a clear site.

4.2 The authority did not provide a written submission to the determination application.

4.3 On 12 June 2015 I issued a draft determination that concluded the substation was not a building for the purposes of the Act and therefore a compliance schedule could not be required by the authority.

4.4 On 25 June 2015 the authority and the applicant accepted the draft determination without comment.

## **5. Discussion**

### **5.1 Is the substation a building under the Act**

5.1.1 Under section 100 of the Act a building not used as a single household unit requires compliance schedule if it has one or more specified systems. The first question to answer is whether a substation is a building for the purposes of the Act. Sections 8 and 9 of the Act specify what is and is not included in the definition of a building.

5.1.2 The substation, being a permanent structure for the occupation of electrical equipment appears to fit within the broad definition provided under section 8 as a building, however section 9 provides the following exclusion:

(ac) security fences, oil interception and containment systems, wind turbines, gantries, and similar machinery and other structures (excluding dams) not intended to be occupied that are part of, or related to, a NUO system;

5.1.3 To fall within the exclusion under section 9, the substation must therefore;

- be a structure that is not intended to be occupied, and
- constitute a NUO system.

5.1.4 In the absence of a definition under the Act for ‘occupied’ the natural and ordinary meaning prevails; ‘occupied’<sup>4</sup> meaning ‘being used by someone’. The substation is used by the applicant occasionally for routine maintenance and inspections. However, looking at the context of where ‘intended to be occupied’ is used elsewhere in the Act, Schedule 1(4) provides an exemption for unoccupied detached building:

- (1) Building work in connection with any detached building that—
- (a) houses fixed plant or machinery and under normal circumstances is entered only on intermittent occasions for the routine inspection and maintenance of that plant or machinery; or
  - (b) is a building, or is in a vicinity, that people cannot enter or do not normally enter; or
  - (c) is used only by people engaged in building work—
    - (i) in relation to another building; and
    - (ii) for which a building consent is required.

...

5.1.5 This exemption from the requirement to obtain a building consent under Schedule 1 illustrates the intention of the Act that buildings that are only entered on an intermittent occasion for routine inspection and maintenance of plant or machinery are considered unoccupied or a building where people cannot or do not normally enter. I also note section 128(2) of the Act relating to dangerous and insanitary buildings refers to a person not being permitted to ‘use or occupy the building’ indicating that the two words are distinct from each other, using a building does not always constitute occupying a building. In the current case I am satisfied the applicant does not intend the substation to be occupied.

5.1.6 Notwithstanding the above, I consider that in some cases a structure of a large size that frequently has people entering for the purposes of maintenance could be considered to be ‘occupied’ and therefore can be considered a building under the Act. In relation to the current case it is clear maintenance will only occur infrequently and, along with the location and size of the structure, indicate it is not ‘occupied’.

5.1.7 An NUO system is defined under section 7 of the Act meaning ‘a system owned or controlled by a network utility operator.’ A NUO is a person who is an electricity operator or an electricity distributor as defined in section 2 of the Electricity Act 1992. Referring to the Electricity Act 1992:

Electricity distributor - a person who supplies line function service to any other person or persons

<sup>4</sup> [www.oxforddictionaries.com](http://www.oxforddictionaries.com) accessed 15 May 2015

Electricity operator - ...

any person or declared under section 4 and section 4A to be an electricity operator for the purposes of this Act or any provision or provisions of this Act.

5.1.8 The applicant is the owner of the substation and has four network operators, Electricity Invercargill Limited, The Power Company Limited, Otago Net and Electricity Southland Limited, who are all declared to be electricity operators<sup>5</sup> and therefore come under the definition as an NUO; meaning the substation is part of or related to an NUO system.

5.1.9 I am therefore of the view that a compliance schedule is not required under section 100 of the Act for the substation as it is not a building for the purposes of the Act.

## 6. Further guidance relating to defining a specified system

6.1 As I have determined the substation is not a building for the purposes of the Act I am not required to provide further analysis relating to smoke detectors connected to security systems in a situation where a building is involved. However, I recognise the applicant put forward a discussion on the above matter for the current case and I understand the industry need for clarification on this issue.

### 6.2 The definition of a specified system

6.2.1 Under section 7 of the Act a specified system means a system or feature that:

- (i) is contained in, or attached to, a building; and
- (ii) contributes to the proper functioning of the building (for example, an automatic sprinkler system); and
- (iii) is declared by the Governor-General, by Order in Council, to be a specified system for the purposes of this Act; and

...

6.2.2 In addition, the Ministry's Compliance Schedule Handbook<sup>6</sup> provides an extended definition stating:

Specified systems require ongoing inspection and maintenance to ensure they function as required, because if they fail to operate properly, they have the potential to adversely affect health or life safety.

This extended definition adds weight to the importance of a specified system to health or life safety (although I note that not all specified systems are required to protect health and safety under the definition of the Act).

6.2.3 The requirements of the definition under section 7 are cumulative. The Regulations set out the specified systems that have been declared by Order in Council and the system or feature must be contained in or attached to a building. However, there is currently a lack of clarity as to what 'contributes to the proper functioning of the building' means. This phrase is not defined under the Act, Building Code, or the Regulations. The natural and ordinary meaning of 'functioning' is 'to work or operate in a proper or particular way.'<sup>7</sup> In light of the phrase 'proper', meaning 'of the required or correct type or form; suitable or appropriate'<sup>8</sup> I consider it is appropriate to turn to the functions of the Building under the Act and associated regulations for guidance to determine the proper functioning of the building.

<sup>5</sup> <http://www.med.govt.nz/sectors-industries/energy/electricity/operator-status/list-of-electricity-operators> accessed 18 May 2015.

<sup>6</sup> Department of Building and Housing, 'Compliance Schedule Handbook' published 10 October 2011 at section 7.0

<sup>7</sup> Oxford Dictionary <http://www.oxforddictionaries.com/definition/english/function> accessed 5 June 2015

<sup>8</sup> Oxford Dictionary <http://www.oxforddictionaries.com/definition/english/function> accessed 5 June 2015

6.2.4 The phrase ‘functional requirement’ is defined under section 7 of the Act as ‘the functions that the building is required to perform for the purposes of the Act’. I therefore consider the following factors can be considered on a case-by-case basis when determining whether a system contributes to the ‘proper functioning of the building’:

- The requirements of the Act and in particular the functional requirements of the relevant Building Code Clauses.
- The objectives of the relevant Building Code Clauses.
- The classified use and importance level of the building.

6.2.5 I caution that the definition of “proper functioning” is not a test against the requirements of the Building Code. Buildings are only required to comply with the Building Code to the extent required by the Act.

### 6.3 Analysis of case studies relating to smoke detectors

#### *Case Study One – hard wired to plant and machinery for monitoring purposes*

6.3.1 The first case study is of an unoccupied building where smoke detectors are hard wired to plant or machinery equipment and function for monitoring and protection of such equipment. There is no other property in close proximity to the unoccupied building.

6.3.2 A smoke detector falls within Specified System 2 (“SS2”) ‘Automatic or manual emergency warning systems for fire or other dangers (other than a warning system for fire that is entirely within a household unit and serves only that unit)’. There are two functional requirements of the Building Code that relate to warning systems, F7.2 and C4.1(a):

F7.2 Buildings shall be provided with an appropriate means of warning people to escape to a safe place in an emergency

C4.1(a) Buildings must be provided with effective means of giving warning of fire

6.3.3 Looking further at the relevant objective requirements of both Clauses: F7.1 aims to safeguard people from injury or illness due to lack of awareness of an emergency; Clause C1(a) is to safeguard people from an unacceptable risk of injury or illness caused by fire and protect other property from damage caused by fire.

6.3.4 The unoccupied building has no occupants for whom ‘appropriate means of warning’ can be given for the purposes of safeguarding from injury. Likewise, the smoke detectors hard wired to plant or equipment do not provide any warning on site and cannot be said to contribute to providing ‘appropriate means of giving warning’ for the purpose of safeguarding from injury. Therefore, I consider a smoke detector in this case does not contribute to the proper functioning of the building and therefore is not a specified system.

6.3.5 In relation to the classified use and importance level of the building, although these are difficult to determine in a theoretical example, the above situation would indicate an importance level of 1 (IL1) for the purposes of the C-Clauses, which are typically non-habitable buildings. The classified use would likely be industrial or ancillary, therefore certain clauses of the Building Code will be excluded under the ‘limits of application’.

***Case Study Two – smoke detectors provide warning***

- 6.3.6 The second case study of an occupied building where smoke detectors provide a warning onsite either directly or through a third party notification.
- 6.3.7 In analysing this case study using the same objectives and functional requirements discussed above at paragraph 6.3.2 and 6.3.3, the building is occupied and the smoke detectors therefore contribute to providing effective means of giving warning of fire (Clause C4.1(a)) and for occupants to escape to a safe place (Clause F7.2) reducing injury or illness due to lack of awareness of an emergency (F7.1). I therefore consider the smoke detectors contribute to the proper functioning of the building and therefore are specified systems.

**7. The decision**

- 7.1 In accordance with section 188 of the Building Act 2004, I hereby determine that the authority was incorrect to require a compliance schedule for the substation as it is not a building for the purposes of the Act, and accordingly I reverse the authority's decision.

Signed for and on behalf of the Chief Executive of the Ministry of Business, Innovation and Employment on 6 July 2015.



John Gardiner  
**Manager Determinations and Assurance**



## Appendix A

### A1 The relevant sections of the Act

#### 100 Requirement for compliance schedule

- (1) A building not used wholly as a single household unit—
- (a) requires a compliance schedule if—
    - (i) it has a specified system; or
    - ...
  - (b) requires the schedule for all specified systems it has and any cable car it has attached to it or servicing it.

#### 9 Building: what it does not include

In this Act, building does not include—

- (a) a NUO system, or part of a NUO system, that—
  - (i) is external to the building; and
  - (ii) is connected to, or is intended to be connected to, the building to provide for the successful functioning of the NUO system in accordance with the system's intended design and purpose; and
  - (iii) is not a mast pole or a telecommunication aerial that is on, or forms part of, a building; or
- (ab) a pylon, free-standing communication tower, power pole, or telephone pole that is a NUO system or part of a NUO system; or

#### 7 Interpretation

##### specified system—

- (a) means a system or feature that—
  - (i) is contained in, or attached to, a building; and
  - (ii) contributes to the proper functioning of the building (for example, an automatic sprinkler system); and
  - (iii) is declared by the Governor-General, by Order in Council, to be a specified system for the purposes of this Act; and
- (b) includes a cable car