

## **GUIDELINE No. 11 – VOLTAGE VARIATION COMPENSATION**

### **INTERPRETATION OF ‘REASONABLE PRECAUTIONS’ AND ‘CONSEQUENTIAL LOSS’**

#### **1 INTRODUCTION**

Electricity Industry Guideline number 11 - “Voltage Variation Compensation” sets out a distributor’s obligation to pay compensation for damages due to voltage variations under certain circumstances.

A distributor is relieved of the obligation to pay compensation for consequential losses or where a business customer has not taken reasonable precautions.

This paper provides advice to the Energy and Water Ombudsman (Victoria) Ltd. (EWOV) about the meanings of consequential loss and reasonable precautions.

#### **2 BACKGROUND**

EWOV has requested advice from the Commission regarding the interpretation of:

- “reasonable precautions” for business customers under clause 2.5(b); and
- “consequential loss” under clause 2.5(c), in particular clarification regarding compensation for loss of computer data as a result of damage to the computer from voltage variations.

Clauses 2.5(b) & (c) of Guideline No.11 state that:

*A distributor is not obliged to compensate a person under this guideline:*

- (b) *in respect of damage to a business customer’s property due to an unauthorised voltage variation affecting an electrical installation where:*
- (1) *the business customer has not taken reasonable precautions to minimise the risk of loss or damage to its business including, without limitation, its equipment and premises which may result from voltage variations; or*
  - (2) *the property is damaged consequentially by, rather than as a direct result of, the relevant unauthorised voltage variation.*
- (c) *in respect of any consequential loss including any loss of profit.*

As an outcome of a meeting held in October 2001 between the distributors, EWOV and the Commission, distributors have responded to the Commission with comments on what may constitute “reasonable precautions” under clause 2.5(b). These comments have been drafted into this guidance paper.

### **3 CONSEQUENTIAL LOSS**

Compensation payable under Guideline 11 is limited to compensation for damage directly resulting from a voltage variation. Clause 2.5 specifically excludes payments for consequential loss including any loss of profits.

It is not practicable to provide a prescriptive definition or a list of items that might be considered to be consequential loss and some judgement will be required based on the circumstances of each particular case.

Consequential loss is usually distinguished from loss which directly flows from the relevant event, that is consequential loss might be characterised as loss which does not arise directly and naturally from the relevant event, such as goods stolen as a result of a damaged alarm system. Also, consequential loss is often characterised in terms of economic loss, such as loss of profits and loss of wages where employees are stood down.

While compensation for consequential loss is not payable under the guideline, such losses may be compensable through the courts under other laws and codes, for instance, as a result of a binding decision made by the Energy and Water Ombudsman, in accordance with the Ombudsman’s charter.

To avoid doubt, examples of direct losses – for which compensation would generally be payable – would include the following

- food spoiled due to a voltage variation damaging a refrigerator; and
- the cost of recovering computer data from a data storage device (hard disk) lost as a result of a voltage variation.

A condition on businesses customers for payment of direct losses is that the business customer must have taken reasonable precautions to minimise the risk of loss or damage to its business. This condition is discussed in the next section.

### **4 REASONABLE PRECAUTIONS**

A distributor is relieved of the obligation to pay compensation under the guideline when a business customer has not taken reasonable precautions.

In general a customer could not be said to have taken reasonable precautions as required by clause 2.5(b) of the guideline, if the customer has failed to comply with statutory requirements, and such failure has materially contributed to the damage.

Consideration must also be given to the circumstances applying in specific cases, and a level of judgement applied. Key factors are:

- the level of risk to the customer (which takes into account the impact of voltage variations on the customer and their likely frequency); and
- the actions taken by the customer to identify and mitigate the risk.

There is a range of precautions customers could take, depending on their assessment of the risk, taking into consideration the likelihood of a voltage variation, the consequences of such an event and the costs of mitigating the risk. For example, it is reasonable to expect that a customer who relies heavily on continuous supply, and who faces substantial losses as a result of failure of supply, would take

more extensive precautions than a customer who is relatively unaffected by loss of supply.

A business customer’s statutory requirements, installation of protective devices and other precautions are discussed more fully in the following sections.

#### **4.1 Statutory Requirements**

There are a number of statutory requirements which would apply to all cases:

- Electricity Safety (Installations) Regulations – these Regulations prescribe (amongst other things) that all installation, alteration, repair and maintenance of an electrical installation must comply with the Australian/New Zealand Wiring Rules;
- Australian/New Zealand Wiring Rules AS/NZ 3000 – these rules detail (amongst other things) the requirements for electrical installations including the obligations of the property owner/occupier in relation to the control and protection of their electrical installation;
- Victorian Service & Installation Rules – these rules cover (amongst other things) the requirements for motor starting currents, voltage drop, and protective devices; and
- Electricity Distribution Code – this Code requires (amongst other things) that the customer ensures that his electrical installation is maintained in a safe condition and that protection equipment is coordinated with the electrical characteristics of the distribution system.

It is noted that AS/NZ 3000 contains a number of clauses relating to the protection of electrical installations, particularly clauses 2.6 (over-voltage), 2.7 (under-voltage), 4.2.1.2 (restarting or reversal) and 4.3.4.1 (overload). The requirements of these clauses (which have some discretion in their application, depending on the risk) have arisen from safety considerations, and so adherence to them can only be used as a guide. United Energy provides the following brief description of the relevant clauses:

##### Clause 2.6 – Protection against over voltage

Installation of a suitable device based on a risk assessment (not mandated).

##### Clause 2.7 – Protection against under voltage

Suitable protective measures shall be taken where a drop in voltage or the loss of and subsequent restoration of voltage could cause danger.

Where a drop in voltage could cause damage to an electrical installation or electrical equipment, an under voltage protective device shall be provided unless such damage is considered an acceptable risk.

##### Clause 4.2.1.2 – Protection against restarting or reversal

Each electric motor shall be provided with a means to prevent automatic restarting after stopping due to a drop in voltage or the failure of the supply, where unexpected restarting of the motor might cause danger.

Where safety might be impaired by incorrect direction of rotation of a motor, suitable measures shall be taken to prevent danger from reversal of the direction of rotation.

#### Clause 4.3.4.1 – Motors Protection against overload

Unless incorporated in an item of electrical equipment that complies with an appropriate standard, each electric motor having a rating exceeding 0.37 kW shall be provided with control equipment incorporating means of protecting against overload of the motor.

### **4.2 Installation of Protection Devices**

Protection devices to be considered by the customer include the following:

- Surge diverter - for protection against voltage surges, typically caused by lightning;
- Line conditioner - although there are a number of types, these can provide stable output voltage for a range of variations to input voltage, thus providing protection against over-voltage and under-voltage; and
- Uninterruptible Power Supply (UPS) - for protection against total loss of supply, over-voltage, under-voltage and electrical interference.

### **4.3 Back-up of Computer Data**

Where computer data is involved, the Commission considers that it is reasonable to expect business customers to back up the data on a regular basis, at least daily.

### **4.4 Examples**

Although each individual case must be considered on its merits, the following examples are provided for guidance:

CUSTOMER DESCRIPTION	REASONABLE PRECAUTIONS
Industrial customer with 24 hour continuous process and sensitive, computer equipment	UPS on computer equipment; over-voltage, under-voltage and overload protection on other equipment; regular back up of computer data; emergency management procedures.
Commercial customer with large general office containing networked PCs	Regular back up of computer data, at least each business day, is essential. Should consider line conditioner/UPS on network server if located on feeder with history of frequent voltage dips.
Medium sized processing plant, not reliant on computers	Over-voltage, under-voltage and over-load protection.
Small retail shop	Regular back up of computer data.