

HSE Alert Form



Alert Number: **2014.39**

eSafe No	1117597	Location	Meadowvale Substation	Date	09/09/2014
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Description of Hazard/Incident *(What happened?)*

On Tuesday 09 September Substations employees were preparing to issue an Access Permit as part of works being completed at Meadowvale Substation. It was identified that one of the listed Access Permit precautions appeared not to have been implemented.

The 11kV Feeder circuit breaker (CB) was to have been racked into the Earth Position, CLOSED and made inoperable. The CB had been racked into the Earth Position and made inoperable, but the circuit breaker status indicator showed the circuit breaker to be OPEN.

It was later identified other CBs were not correctly latching into the CLOSED position, with the circuit breakers remaining OPEN after a CLOSE command had been issued.

Extent of Impact *(Details of injury, environmental harm, equipment damage, etc.)*

- People: Nil – missing precaution identified prior to issue of Access Permit.
- Asset Impact: Several South Wales 11kV C6X, D6X and D8X Series CBs identified as not latching correctly into the CLOSED position following switching operations.

Key Facts *(What are the key facts ?)*

Switching Operations to allow the issue of the Access Permit were completed by Customer Delivery on Monday 08 September. The Switching Operator involved stated that he had completed all actions required on the Switching Sheet and verified the circuit breaker status (ie – confirmed CLOSED) via the viewing window and made the circuit breaker inoperable.

Two other circuit breakers at Meadowvale Substation failed to latch into the CLOSED position during other Switching Operations performed later on 09 September 2014. Substations employees indicated similar occurrences had been experienced with CBs of the same make and model at other locations.

These CB operating mechanisms are 'gumming up' due to the deterioration of the lubricants previously applied to the CBs. Following the removal of deteriorated lubricants and the application of a new lubricant the CBs have been observed to function correctly, closing and latching as intended.

Two types of behaviour have been observed when the circuit breakers mal-operate:

- The status indicator will only flick briefly and partially towards the CLOSED indication before instantly returning to indicate the circuit breaker is OPEN.
- The status indicator will indicate the circuit breaker is in the CLOSED position. After a small delay the indication will slowly change to indicate the circuit breaker is OPEN.

The circuit breakers affected are at Meadowvale, Murgon and Kingaroy Substations. Preliminary investigations into similar circuit breakers elsewhere in the Ergon Energy network have not identified similar issues. It has been identified that a different lubricant is used in the Fraser Burnett Region when compared to other regions and this may be a contributing factor.

Actions *(Information on corrective actions implemented that may prevent harm and or assist others in preventing a similar occurrence)*

Until the South Wales 11kV C6X, D6X and D8X Series circuit breakers in the Fraser Burnett Region have undergone maintenance the following precautions shall apply:

- Auto-reclose functionality may remain enabled
- Affected Circuit Breakers in the Service Position shall be CLOSED by remote means only until maintenance is completed
- Affected Circuit Breakers found OPEN, where the OPEN has not occurred due to Planned Switching or an identifiable protection operation shall not be CLOSED until maintenance is completed
- Affected Circuit Breakers shall not be used as an Operator Earth until maintenance is completed

Maintenance for the purposes of this Safety Alert is to include the degreasing and lubrication of the circuit breaker operating mechanism components. Following maintenance circuit breaker operation shall be verified prior to placing the circuit breaker into the Service Position. "For Information" tags are to be applied to those circuit breakers where the maintenance described has been completed since 01 September 2014.

Contact for further Information

Name: Christian Jensen	Position: Senior Engineer Investigations
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