



1 SCOPE

This document details the application of SOP 256 issued by the Electricity Association.

2 ISSUE RECORD

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Issue Date	Issue No	Author	Amendment Details
October 2000	1	Esther Stewart	Initial Issue in New Format: 3 Page Document

3 ISSUE AUTHORITY

Author	Owner	Issue Authority
Esther Stewart	Roger Bracey	Roger Bracey Group Head, Standards



4 SOP DETAILS

TYPE: Siemens Type 8DA10 36kV CB with top mounted Busbar Earthing Switch

ORIGINATING REC: ScottishPower

DATE: 31/07/00

NO. INSTALLED IN MANWEB: 2 (Associated Octel Substation)

NO. INSTALLED IN SCOTLAND:

STATUS:

The following Operational Restriction shall be applied to all Siemens Type 8DA10 36 kV Circuit Breaker Panels fitted with a top mounted Busbar Earthing Switch until the remedial action has been completed.

- 1 The Busbar Earthing Switch **SHALL NOT BE OPERATED.**
- 2 The operating handle access cover for the Busbar Earthing Switch shall be locked closed with a Safety Padlock and a Caution Notice affixed. The Safety Keys shall be retained in the safe custody of the appropriate Network Manager.
- 3 All operating handles for the above type of Busbar Earthing Switches shall be withdrawn from service and kept in the safe custody of the appropriate Network Manager

REASON:

This Operational Restriction has been imposed after it has been revealed that the above type of Busbar Earthing Switches have been installed on Siemens Type 8DA10 36kV switchgear panels owned by Power Systems. The earthing switches have an assigned short-circuit making capacity (i.e. are capable of making circuit if inadvertently closed to a live circuit) but do not have any short-circuit breaking capacity (i.e. cannot break fault current).

It has been discovered that these types of Busbar Earthing Switches have **NOT** been fitted with any form of reverse operation delay feature (“anti- reflex” device). This feature is designed to prevent an operator from re-opening the switch by a simple reversal of the stroke of the operating handle, immediately after inadvertently closing onto a short circuit. A reverse operation delay feature is a fundamental requirement for all independent manual operated earthing switches to ensure safety of the operator.



In 33kV substations with a two section busbar arrangement, busbar earthing on Siemens Type 8DA10 36kV switchboards is provided by the Bus Section Circuit Breaker Panel using a three position Disconnecter. In cases where no Bus Section Circuit Breaker is fitted (e.g. single section busbar arrangements), Siemens have supplied the Top Mounted type of Busbar Earthing Switch.

This type of Busbar Earthing Switch has only been installed at two HV Customer Sites within Power Systems (two at Westfield Generator Substation and two at Chunghwa CPT Substation).

This type of Busbar Earthing Switch has not been installed within Manweb single busbar section Substations

UPDATE:

REMEDIAL ACTION:

Siemens intend to offer a replacement for the existing operating handles to suit this particular type of Busbar Earthing Switch. The replacement handles will be fitted with a **Reverse Operation Delay** feature to prevent immediate re-opening of the Earth Switch after any closing operation. When **approved** operating handles are made available these shall be used to replace the existing operating handles.