

## 1. SCOPE

This document details the application of SOP 165 (Applicable to GEC TYPE VMX Vacuum circuit breaker) issued by the Energy Networks Association.

## 2. ISSUE RECORD

This is a Reference document. The current version is held on the EN Document Library.

**It is your responsibility to ensure you work to the current version.**

Issue Date	Issue No.	Author	Amendment Details
October 2000	1	Esther Stewart	Initial Issue in New Format: 3 Page Document
August 2024	2	Benjamin Hughes	Re-format of document. Updated numbers of equipment installed. Updated to include reference to SWG-19-072. Extended as per Legacy SOP Review Appendix OPSAF-16-165 Appendix 1 - Polaris 1044 - Mar-23, which is for internal use only.

## 3. ISSUE AUTHORITY

Author	Owner	Issue Authority
Name: Benjamin Hughes Title: Lead Engineer Engineering Design & Standards	Name: Jon Ruiz De Aguirre Title: Substations Manager	Name: Fraser Ainslie Title: Head of Engineering Design and Standards

## 4. REVIEW

This is a Reference document which has a 5 year retention period after which a reminder will be issued to review and extend retention or archive.

## 5. DISTRIBUTION

This document is not part of a Manual maintained by Document Control and does not have a maintained distribution list. It is published on the SP Energy Networks website.

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**7. SOP DETAILS**

<b>EQUIPMENT TYPE</b>	GEC TYPE VMX Vacuum circuit breaker
<b>ORIGINATING COMPANY</b>	SEEBOARD
<b>DATE</b>	21 <sup>st</sup> June 1996
<b>NUMBER INSTALLED IN ENERGY NETWORKS NORTH</b>	8
<b>NUMBER INSTALLED IN ENERGY NETWORKS SOUTH</b>	883
<b>REASON</b>	<p>This defect was notified by SEEBOARD and was discovered when a circuit breaker was being closed electrically. When the main contacts were closed the spring charge motor started and the cb slow opened. Investigation revealed a second unit with a similar defect. The problem is due to an incorrect closing spring being fitted. Both manually and motor charged units are potentially affected.</p> <p>NOTE: VMX cb's fitted with type EV1 interrupters are not affected by the defect. These cb's use a different closing spring with a much higher factor of safety.</p>
<b>STATUS IN INITIATING COMPANY</b>	
<b>SPEN APPLICATION</b>	<p>The following restriction shall apply to all type VMX circuit breakers with the exception of those fitted with type EV1 interrupters. (See Table 1)</p> <p>(1) Live operation of a circuit breaker shall wherever practicable be carried out by remote control. Where local operation is necessary restrictions 2-4 below will apply.</p> <p>(2) Any auto reclose facility shall be switched off prior to any local live operation of the circuit breaker.</p> <p>(3) The appropriate fuse/link shall be withdrawn to inhibit motor charging of the closing spring prior to the opening of the circuit breaker.</p> <p>(4) After charging the closing spring of an open circuit breaker, the appropriate fuse/ link shall be withdrawn to inhibit the motor charging of the closing spring prior to closing the circuit breaker.</p> <p>A programme of checks of GEC type VMX circuit breakers shall be initiated by all regions. Circuit breakers found to be defective to be reported to Group Head, Standards, Company HQ.</p>

**ADDITIONAL INFORMATION**

**UPDATE**

**REMEDIAL ACTION**

Table 1.

GEC Reference	Original Destination	No Of Units Supplied
69,270	Metal Box	9
68,262	Greenfield	11
69,314	Birkenhead	2
69,332	Bromfield	2
68,357	NWF Wardel	7
69,333	Oswestry	4
69,336	Gwynedd	4
69,349	Winsford	3
69,372	Craif Fawr	5
69,373	St Asaph Business Park	7
69,401	Wrexham Wire	7
69,417	Liverpool FC	3
69,418	Grannox	4
69,419	Harrington St	5
69,427	Morrisons	3
69,433	Cable Comms	3
69,456	BICC Huyton Quarry	7
69,465	Harlech	4
69,551	Mid Mersey Sores	2
69,592	Port Sunlight	5
69,622	Grannox	3
69,696	Lever Bros	2
70,202	?	7
70,271	?	1
69,400	Glengail, Ayr	1
69,429	Ralston Linthouse Glasgow	3

**8. SOP HEADER**

Field Name	Field Value	Field Size
<b>Name (SOPXXX)</b> *	<b>SOP165</b>	6
<b>The reason for the Operational Restriction</b> *	Slow Open when spring charging	30
<b>Nature of the Operational Restriction</b> *	Auto Reclose disabled, charging motor fuse removed	50
<b>Comments</b> *	Remote control. When local: auto reclose facility shall be switched off. The appropriate fuse/link shall be withdrawn to inhibit motor charging prior to the opening or closing of the circuit breaker.	200
<b>Restricted Access to Substation Flag</b> *	N	1
<b>SOP Impact Code</b> * (highlight or underline the appropriate code)	0 Temporary/Impact under assessment 1 Very minor operational/network impact <u>2 Moderate operational/network impact</u> 3 Significant impact on system perf./measurable business costs 4 Inoperable without intervention 5 Inoperable – no cost effective solution/must be replaced	N/A
<b>SOP component type</b> * (highlight or underline the appropriate code)	01 Bushing only <u>02 Circuit Breaker</u> 03 Fixed Portion only 04 Moving Portion only 05 Switch 06 RMU 07 Transformer only 08 Tap Changer only 09 Transformer & Bushing 10 Transformer & Tap Changer	N/A
<b>Search Criteria</b> *	Manufacturer: GEC Model Name: VMX	N/A

\* This denotes a Mandatory Field