

1. SCOPE

This document details the application of SOP 438 (Applicable to SADTEM BBY2) 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
Feb 2024	1	Patrick Dolan	Initial Issue
13/02/2024	2	Jon Ruiz de Aguirre	Update according to ALARP

3. ISSUE AUTHORITY

Author	Owner	Issue Authority
Name: Jon Ruiz de Aguirre Title: Substations Manager	Name: Jon Ruiz de Aguirre Title: Substations Manager	Name: Fraser Ainslie Title: Head of Engineering Design & 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

EQUIPMENT TYPE	SADTEM BBY2
ORIGINATING COMPANY	SP Energy Networks
DATE	19/01/24
NUMBER INSTALLED IN ENERGY NETWORKS NORTH	84
NUMBER INSTALLED IN ENERGY NETWORKS SOUTH	9
REASON	<p>A disruptive failure occurred on one of the VTs on an incomer bay of a 33kV open terminal substation on the 8th Jan 2024. A piece of the base tank was ejected approximately 15m away from the VT. No one was harmed by the incident.</p> <p>Another VT of the same type failed on 18th Jan 2024.</p>
STATUS IN INITIATING COMPANY	<p>There is a 20m access restriction to all SADTEM BBY2 VTs. Under the restriction, time limited entry to the restricted zone is permissible with the equipment live. The following exposure limits apply for single person entry:</p> <ul style="list-style-type: none">• Exposure limit to 1 unit: 90 minutes per day.• Exposure limit to 3 units: 30 minutes per day.• Exposure limit to 6 units: 15 minutes per day. <p>It is prohibited to enter the restricted zone with the equipment live for longer periods than specified. Exposure limits are reduced if multiple persons enter (Exposure limit ÷ Number of persons).</p> <p>Where the VT is less than 20m from fence, Substation Managers should consider mitigation measures according to each Substation's design layout, to protect the public.</p>
SPEN APPLICATION	As above.
ADDITIONAL INFORMATION	None.
UPDATE	N/A
REMEDIAL ACTION	Pending failure investigation.

8. SOP HEADER

Field Name	Field Value	Field Size
Name (SOPXXX) *	SOP438	6
The reason for the Operational Restriction *	Disruptive failure	30
Nature of the Operational Restriction *	Access Restriction	50
Comments *	20m access restriction to SADTEM BBY2 VTs. The following exposure limits apply for single person entry per day to the restricted zone: 1 unit: 90 mins 3 units: 30 mins 6 units: 15 mins	200
Restricted Access to Substation Flag *	Y	1
SOP Impact Code * <i>(highlight or underline the appropriate code)</i>	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
SOP component type * <i>(highlight or underline the appropriate code)</i>	01 Bushing only 02 Circuit Breaker 03 Fixed Portion only 04 Moving Portion only 05 Switch 06 RMU <u>07 Transformer only</u> 08 Tap Changer only 09 Transformer & Bushing 10 Transformer & Tap Changer	N/A
Search Criteria *	Manufacturer *SADTEM * Text Model *BBY2*	N/A

* This denotes a Mandatory Field

9. LIST OF AFFECTED ASSETS ACCORDING TO INVENTORY

Description of functional location	ManufactSerialNumber	Planner group	Text Model
HUNTERSTON NORTH 400KV - 033	14017506/4	SPT	SADTEM - BBY2
HUNTERSTON NORTH 400KV - 033	14017506/6	SPT	SADTEM - BBY2
BONNYBRIDGE 132/33kV-025	555012	SPT	SADTEM - BBY2
BONNYBRIDGE 132/33kV-025	557070	SPT	SADTEM - BBY2
BONNYBRIDGE 132/33kV-025	555011	SPT	SADTEM - BBY2
GALAWHISTLE 132 - 033	559270	SPT	SADTEM - BBY2
GALAWHISTLE 132 - 033	559272	SPT	SADTEM - BBY2
GALAWHISTLE 132 - 033	559271	SPT	SADTEM - BBY2
DERSALLOCH 132/33kV - 033	552871	SPT	SADTEM - BBY2
DERSALLOCH 132/33kV - 033	552872	SPT	SADTEM - BBY2
DERSALLOCH 132/33kV - 033	552873	SPT	SADTEM - BBY2
ARECLEOCH 132/33KV-033	560029	SPT	SADTEM - BBY2
ARECLEOCH 132/33KV-033	560030	SPT	SADTEM - BBY2
ARECLEOCH 132/33KV-033	560031	SPT	SADTEM - BBY2
KILGALLIOCH 275/33KV - 033	N 558793	SPT	SADTEM - BBY2
KILGALLIOCH 275/33KV - 033	N 558795	SPT	SADTEM - BBY2
KILGALLIOCH 275/33KV - 033	N 558794	SPT	SADTEM - BBY2
KILGALLIOCH 275/33KV - 033	N 558796	SPT	SADTEM - BBY2
KILGALLIOCH 275/33KV - 033	N 558798	SPT	SADTEM - BBY2
KILGALLIOCH 275/33KV - 033	N 558797	SPT	SADTEM - BBY2
KILGALLIOCH 275/33KV - 033	N558799	SPT	SADTEM - BBY2
KILGALLIOCH 275/33KV - 033	N 558801	SPT	SADTEM - BBY2
KILGALLIOCH 275/33KV - 033	N 558800	SPT	SADTEM - BBY2
EWEHILL 132/33KV - 033	559701	SPT	SADTEM - BBY2
EWEHILL 132/33KV - 033	559700	SPT	SADTEM - BBY2

EWEHILL 132/33KV - 033	559699	SPT	SADTEM - BBY2
MOFFAT 400/132KV - 033	564868	SPT	SADTEM - BBY2
MOFFAT 132KV - 033	564868R	SPT	SADTEM - BBY2
MOFFAT 132KV - 033	564868Y	SPT	SADTEM - BBY2
NEILSTON 275kV-033	571950	SPT	SADTEM - BBY2
BLACKCRAIG 132/33KV - 033	570385	SPT	SADTEM - BBY2
BLACKCRAIG 132/33KV - 033	570383	SPT	SADTEM - BBY2
BLACKCRAIG 132/33KV - 033	570384	SPT	SADTEM - BBY2
GALASHIELS 132/33kV-033	571946	SPT	SADTEM - BBY2
GALASHIELS 132/33kV-033	571947	SPT	SADTEM - BBY2
GALASHIELS 132/33kV-033	571948	SPT	SADTEM - BBY2
COALBURN 400kV-033	569260	SPT	SADTEM - BBY2
MIDDLEMUIR 132KV - 033	N.576334	SPT	SADTEM - BBY2
MIDDLEMUIR 132KV - 033	N.576335	SPT	SADTEM - BBY2
MIDDLEMUIR 132KV - 033	N.576333	SPT	SADTEM - BBY2
KILMARNOCK SOUTH 275/33kV-033	569258	SPT	SADTEM - BBY2
CRYSTAL RIG 400 - 033	569263	SPT	SADTEM - BBY2
RUABON-033	578707	SPM	SADTEM - BBY2
WISHAW 400kV-033	571774	SPT	SADTEM - BBY2
KYPE MUIR 132KV - 033	N281207	SPT	SADTEM - BBY2
KYPE MUIR 132KV - 033	N581205	SPT	SADTEM - BBY2
KYPE MUIR 132KV - 033	N581206	SPT	SADTEM - BBY2
GALASHIELS 132/33kV-033	585978	SPT	SADTEM - BBY2
GALASHIELS 132/33kV-033	585979	SPT	SADTEM - BBY2
GALASHIELS 132/33kV-033	585980	SPT	SADTEM - BBY2
MARK HILL 275/132/33 KV - 033	569262	SPT	SADTEM - BBY2
CURRIE 275kV - 033	576336	SPT	SADTEM - BBY2
ECCLES 400/132kV - 033	569261	SPT	SADTEM - BBY2

PEBLIC MILLS-033	2012-N 485154	SPM	SADTEM - BBY2
MARK HILL 275/132/33 KV - 033	2019-N.597965	SPT	SADTEM - BBY2
MARK HILL 275/132/33 KV - 033	2019-N.597966	SPT	SADTEM - BBY2
MARK HILL 275/132/33 KV - 033	2019-N.597967	SPT	SADTEM - BBY2
LLANBERIS-033	2020-N 606674	SPM	SADTEM - BBY2
ELVANFOOT 275kV - 033	569261	SPT	SADTEM - BBY2
BONNYBRIDGE 275kV - 033	607786	SPT	SADTEM - BBY2
WAENFAWR-033	2020-N 606676	SPM	SADTEM - BBY2
BLACKCRAIG SOUTH 33KV - 033	570385	SPT	SADTEM - BBY2
BLACKCRAIG SOUTH 33KV - 033	570383	SPT	SADTEM - BBY2
BLACKCRAIG SOUTH 33KV - 033	570384	SPT	SADTEM - BBY2
SMEATON 400kV - 033	596363	SPT	SADTEM - BBY2
BONNYBRIDGE 275kV - 033	607787	SPT	SADTEM - BBY2
SMEATON 275kV - 033	596364	SPT	SADTEM - BBY2
TYWYN-033	621161	SPM	SADTEM - BBY2
CROWTON-033	2021-N.623871	SPM	SADTEM - BBY2
KYPE MUIR 132KV - 033	635173	SPT	SADTEM - BBY2
KYPE MUIR 132KV - 033	635171	SPT	SADTEM - BBY2
KYPE MUIR 132KV - 033	635172	SPT	SADTEM - BBY2
WEM GRID-033	2022-N.642352	SPM	SADTEM - BBY2
WISHAW 275/33kV-033	637138	SPT	SADTEM - BBY2
WISHAW 275/33kV-033	637139	SPT	SADTEM - BBY2
WISHAW 275/33kV-033	637137	SPT	SADTEM - BBY2
CUMBERHEAD COLLECTOR 132/33KV - 033	629473	SPT	SADTEM - BBY2
CUMBERHEAD COLLECTOR 132/33KV - 033	629472	SPT	SADTEM - BBY2
CUMBERHEAD COLLECTOR 132/33KV - 033	629475	SPT	SADTEM - BBY2
CUMBERHEAD COLLECTOR 132/33KV - 033	629476	SPT	SADTEM - BBY2
CUMBERHEAD COLLECTOR 132/33KV - 033	629471	SPT	SADTEM - BBY2

CUMBERHEAD COLLECTOR 132/33KV - 033	629474	SPT	SADTEM - BBY2
BANGOR DC LINK CONVERTER STATION- CNV	NONE	SPM	SADTEM - BBY2
COALBURN 400kV-033	2022-N. 642199	SPT	SADTEM - BBY2
ACTON-033	2023-N.655741	SPM	SADTEM - BBY2
CURRIE 275kV - 025	647543	SPT	SADTEM - BBY2
CURRIE 275kV - 025	647542	SPT	SADTEM - BBY2
GLENNISTON GRID-033	2023-N.652933	SPD	SADTEM - BBY2
GLENNISTON GRID-033	2023-N.652934	SPD	SADTEM - BBY2
GLENNISTON GRID-033	2023-N.652932	SPD	SADTEM - BBY2
MOSSMORRAN 132/33kV-033	644776	SPT	SADTEM - BBY2
MOSSMORRAN 132/33kV-033	644777	SPT	SADTEM - BBY2
MOSSMORRAN 132/33kV-033	644775	SPT	SADTEM - BBY2