

## TEST REPORT

**Test object:** Disconnecter and busbar system of 11kV capacitor bank  
**Designation:** 11kV capacitor bank  
**Manufacturer:** Systems Power Limited  
3 Prestwood Place, East Pimbo, Skelmersdale, Lancashire WN8 9QE,  
United Kingdom  
**Tested for:** Systems Power Limited  
**Date of tests:** 09<sup>th</sup> March 2016  
**Tested by:** VEIKI-VNL Ltd. – Budapest – HUNGARY  
**Project ID:** NTL-06 / 2016  
**Order/Contract:** SPO19006 / 2016, 21<sup>st</sup> December 2015  
**Test specification:** IEC 62271-200: 2011 Sub-Clause 6.6 Item a)  
**Tests performed:** The main circuit of the test object, constructed in accordance with the description, drawings and photographs incorporated in this report has been subjected to **short-time withstand current and peak withstand current test**.  
**Test results:** The tested main circuit of the high-voltage metal-enclosed switchgear and capacitor bank withstood the dynamic and thermal effects of its rated short-time withstand current and peak withstand current without any breakage or deterioration. The operability of the disconnecter and the measured resistances of the main circuit fulfilled the requirements of the standard.


This Test Report has been issued by VEIKI-VNL Electric Large Laboratories Ltd. Testing Laboratory in accordance with above mentioned specification.

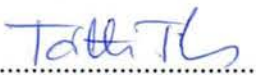
The Report applies only to the test object. The responsibility for conformity of any product having the same designations with that tested rests with the Manufacturer.

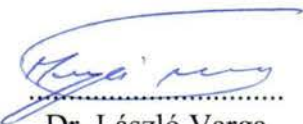
This Report comprises 15 sheets in total (12 numbered pages, 2 drawings and 1 oscillogram).



Budapest,  
22<sup>nd</sup> March, 2016

  
Gábor Huszl  
responsible for the test

  
Balázs Varga  
supervised by *P.P.*

  
Dr. László Varga  
managing director

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**1158 Budapest, Vagolyó u. 2-4., HUNGARY**

E-mail: [vnl@vnl.hu](mailto:vnl@vnl.hu)  
[www.vnl.hu](http://www.vnl.hu)

Phone: +36-1-417 3157  
Fax: +36-1-417 3163



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**TEST CERTIFICATES OR REPORTS ISSUED BY VEIKI-VNL ELECTRIC  
LARGE LABORATORIES LTD. TESTING LABORATORY**

**Type Test Certificate of Complete Type Test**

This certificate provides the verification of all the rated characteristics of the equipment as assigned by the manufacturer, by means of the performance of all type tests specified by the standards.

**Type Test Certificate of Dielectric Performance**

This certificate provides the verification of all dielectric ratings, by means of the performance of the appropriate type tests specified by the standards.

**Type Test Certificate of Temperature-Rise Performance**

This certificate provides the verification of temperature-rise limits together with measurement of the main circuit resistance, by means of the performance of the appropriate type tests specified by the standards.

**Type Test Certificate of Short-Circuit / Making and Breaking Performance**

This certificate provides the verification of rated characteristics with respect short-circuit and/or making and breaking performance, by means of the performance of the appropriate type tests specified by the standards.

**Type Test Certificate of Switching Performance**

This certificate provides the verification of the switching ratings (e.g. capacitive current), by means of the performance of the appropriate type tests specified by the standards.

**Prototype Test Report**

Prototype tests are required to verify the suitability of the materials and method of manufacture for composite insulators defined by relevant ANSI standards.

**Design Test Report**

According to IEC standard: The design tests are intended to verify the suitability of the design, materials and method of manufacture (technology) of composite insulators.

According to ANSI standard: The design tests are intended to verify the insulators electrical and mechanical characteristics that depend on its size and shape.

**Type Test Report**

This report provides the verification of the rated characteristics of the equipment as assigned by the manufacturer, by means of the performance of the appropriate type tests specified by the standards, for type tests not indicated above.

**Development Test Report**

This report is issued when the test is intended only to provide the Client with information about the performance of the equipment. The tests are performed in accordance with relevant standards, but are not intended to verify compliance of the equipment.

**Control Test Report**

This report is issued for tests performed on equipment in service, or removed from service. Tests are performed, and compliance is evaluated in accordance with relevant standards.

**Test Report**

Test report is issued in all cases not listed above.



**Ratings/characteristics assigned by the manufacturer:**

Designation:	High-voltage capacitor bank
Manufacturer:	Systems Power Limited
Type:	Capacitor Bank
Serial numbers:	16/8431/2
Year of manufacturing:	2016
Rated voltage ( $U_r$ ):	11.5 kV
Rated reactive power ( $Q_r$ ):	1 MVAR
Rated frequency ( $f_r$ ) / number of phases:	50 Hz / 3
Rated short-time withstand current ( $I_k$ ):	25 kA
Rated peak withstand current ( $I_p$ ):	62.5 kA
Rated duration of short-circuit ( $t_k$ ):	3 s
Cross-sections and materials of the main bars	60x6mm Tinned Copper

*Built-in device:*

Disconnecter

Manufacturer:	IVEP, a.s.
Type:	QAK 12.630.25/3.L.R.2.-.250/3
Serial No./Year:	16-0047/2016
Rated voltage ( $U_r$ ):	12 kV
Rated frequency ( $f_r$ ) / number of phases:	50 Hz / 3
Rated normal current ( $I_r$ ):	630 A
Rated short-time withstand current ( $I_k$ ):	25 kA
Rated peak withstand current ( $I_p$ ):	62.5 kA
Rated duration of short-circuit ( $t_k$ ):	3 s
Kind of operating mechanism:	manual operated
Weight:	55 kg