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## TEST CERTIFICATE

**Docket S030  
Ex. 14-1-7-1**

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### HIGH VOLTAGE ARTIFICIAL CONTAMINATION TEST

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This is to certify that the following unit has been tested to our traceable standard

IEEE STD 4-1995

**Serial No** 153 'Load Insulator'

**Rating** 10 tonne

**Proof load** 20 tonne

**Rating (Elect)** 25kV ac working

#### **Test Procedure**

##### *Test 1*

The 50Hz AC voltage of 25kV was applied to the unit for 1 minute. The test was repeated at 50kV.

The procedure was in accordance with section 15.5 of the standard.

##### *Test 2*

The unit was then subjected to voltage at 10kV, 20kV and 25kV, maintaining the voltage at each level for 1 minute.

On completion of the above the unit was subjected to a 25kV AC voltage for 3 hours, recording a leakage current max of 0.79mA during the test.

The procedure was in accordance with section 15.6 of the standard.

#### **Results**

No flashover or puncture occurred during the test.

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Date *20/3/99*

Test carried out by

*A. E. Davies*  
.....  
Professor A E Davies  
STC High Voltage Laboratory  
Department of Electrical Engineering  
University of Southampton



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## TEST CERTIFICATE

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### HIGH VOLTAGE DRY POWER FREQUENCY WITHSTAND AC TEST

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This is to certify that the following unit has been tested to our traceable standard

BS 137: Part 1: 1982, IEC 383: 1976

**Serial No** 000 'Load Insulator'

**Test carried out** 24 September 1998

**Rating** 10 tonne

**Proof load** 20 tonne

**Rating (Elect)** 25kV ac working

**Test Procedure**

The 50Hz alternating test voltage was applied to the unit in steps of 10kV up to 70kV. The voltage was maintained at each voltage for 1 minute.

**Results**

No flashover or puncture occurred during the test.

Date *20/3/99*

Test carried out by

*A E Davies*  
.....  
Professor A E Davies  
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Department of Electrical Engineering  
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## TEST CERTIFICATE

### HIGH VOLTAGE DRY IMPULSE LIGHTNING WITHSTAND TEST

This is to certify that the following unit has been tested to our traceable standard

BS 137: Part 1: 1982, IEC 383: 1976

**Serial No** 148 'Load Insulator'

**Test carried out** 24 September 1998

**Rating** 10 tonne

**Proof load** 20 tonne

**Rating (Elect)** 25kV ac working

#### Test Procedure

15 consecutive impulses of 75kV peak negative polarity were applied to the unit followed by 15 consecutive impulses of 75kV peak positive polarity. The lightning impulse shape was in accordance with BS923: Part 2.

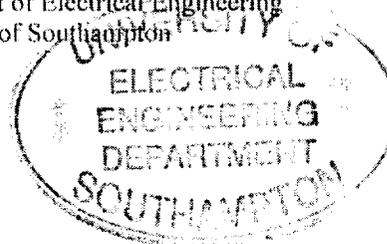
#### Results

No flashover or puncture occurred during the test.

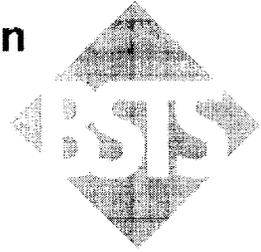
Date

Test carried out by

Professor A E Davies  
STC High Voltage Laboratory  
Department of Electrical Engineering  
University of Southampton



# British Short-Circuit Testing Station



## REPORT

FOR  
SHORT CIRCUIT TESTS MADE ON  
A LOAD INSULATOR  
MANUFACTURED BY LOAD MONITOR LIMITED  
Date of tests:- 5th July 1999

Short circuit tests were satisfactorily performed on the following item by BSTS which implements ISO/IEC Guide 25:1990 and EN45001:1999.

Serial No. **155 Load Insulator**

Rating **25kV ac**

### TEST PROCEDURE

The facility was set up as a 100 MVA generator with a fault level of 25,000 Volts rms ac, 4000 Amps. The generator supply was connected to the Load Insulator via a circuit breaker in series with a 500 Ohm resistor. One side of the resistor was earthed. The resistor was rated at 25kV and capable of absorbing the transient power was calibrated before test.

The first short circuit test had an asymmetrical waveform so that maximum transient power was experienced by the 500 Ohm resistor. The transients decayed in the order of 1 to 2 milliseconds before stabilizing to a steady state. The tests were maintained for a duration of 1 second. The transient power across the resistor was measured, via fibre optical links, by high speed digital equipment which could interpolate the results and display the current, voltage and transient power.

### RESULTS

The unit worked satisfactorily allowing a steady state current of 0.49mA to flow.

The transient power measured over approximately 1ms was 49 $\mu$  Joules.

*P. Stanton* ..... BSTS Observer  
*P. Stanton*  
*M. Henderson* ..... Technical Manager  
*26-7-99* ..... Date



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## TEST CERTIFICATE

### HIGH VOLTAGE WET POWER FREQUENCY WITHSTAND AC TEST

This is to certify that the following unit has been tested to our traceable standard

BS 137: Part 1: 1982, IEC 383: 1976

Serial No 002 'Load Insulator'

Test carried out 24 September 1998

Rating 10 tonne

Proof load 20 tonne

Rating (Elect) 25kV ac working

#### Test Procedure

The 50Hz alternating test voltage was applied to the unit in steps of 10kV up to 60kV. The voltage was maintained at each voltage for 1 minute. The test circuit was in accordance with 7.2.1 of BS 923, Part 2: 1980. The characteristics of the artificial rain was in accordance with 9.1 of BS 923: Part 1: 1990.

#### Results

No flashover or puncture occurred during the test.

Date 20/3/99

Test carried out by

Professor A E Davies  
STC High Voltage Laboratory  
Department of Electrical Engineering  
University of Southampton

