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0.1 Circulation List

COPY NO.	COPY HOLDER
1	Research & Development Manager
2	Procurement Manager
Electronic copy (pdf) on Kenya Power Server (currently :Network-\\stima-fprnt-001\techstd&specs	

0.2 Amendment Record

Rev No.	Date (YYYY-MM-DD)	Description of Change	Prepared by (Name & Signature)	Approved by (Name & Signature)
Issue 3	2012-03-01	Cancels and replaces 2nd issue Rev 1 dated 2003-05-29	S. Kimitei	G. Owuor

FOREWORD

This specification has been prepared by the Research and Development Department of The Kenya Power and Lighting Company Limited (Kenya Power) and it lays down requirements for 33KV Isolating Link. The specification is intended for use by Kenya Power in purchasing the equipment.

It shall be the responsibility of the supplier to ensure adequacy of the design and good engineering practice in the manufacture of 33KV Isolating Link for Kenya Power. The supplier shall also submit information which confirms satisfactory service experience with products which fall within the scope of this specification.

1. SCOPE

This specification is for 33 kV Isolator, Solid Link for use on line disconnection, isolation of substation apparatus and sectionalizing purposes.

2. REFERENCES

The following standards contain provisions which, through reference in this text, constitute provisions of this specification. Unless otherwise stated, the latest edition of the referenced documents (including any amendments) applies.

IEC 129: Alternating Current Disconnectors (Isolators) and Earthing Switches

IEC 60694: Common Specifications for High Voltage Switchgear and Controlgear

ISO 1461: Hot dip galvanized coating on fabricated iron and steel articles-Specifications and test method

3. TERMS AND DEFINITIONS

For the purpose of this specification, the definitions given in the reference standards shall apply.

Isolator (Disconnector) – a mechanical switching device which provides, in the open position, an isolating distance in accordance with Electrical Safety requirements.

4. REQUIREMENTS

4.1. SERVICE CONDITIONS

The isolator shall be suitable for continuous operation outdoors in tropical areas at altitudes of up to 2200m above sea level, humidities of up to 90%, average ambient temperature of +30°C with a minimum of -1°C and a maximum of +40°C and heavy saline conditions along the coast.

4.2. DESIGN AND CONSTRUCTION

4.2.1 The Isolator, Solid Link shall be designed and constructed in accordance with IEC 129 and IEC 60694.

4.2.2 The isolating link shall be of the vertical opening, designed for single phase manual operation. It shall be easily removed and replaced by using a portable operating rod.

4.2.3 The isolating link shall incorporate double porcelain insulators to suit voltage requirements and mounted on hot dipped galvanized steel under base suitable for vertical mounting.

4.2.4 The isolating link shall be arranged so that each unit is mounted independently on an angle bracket. It shall be supplied complete with the angle bracket and accessories suitable for mounting on 'U' type steel channel. The drawings to be submitted shall indicate all the applicable mounting positions.

4.2.5 The isolator shall be designed such that in fully open position, it shall provide adequate electrical isolation between the contacts on each phase. It shall conform to the requirement as single point isolation for safety.

4.2.6 All steel parts shall be hot dip galvanized to ISO 1461. The minimum coating of galvanizing required is 80 microns.

4.2.7 The solid link shall be removable from the mounting by use of operating rod.

4.2.8 All current carrying parts of the isolator shall be made of high conductivity material.

4.2.9 The isolator shall be fitted with clamp connectors for Aluminium (ACSR) conductor of up to 18.2mm diameter.

4.3. RATING

The rating of the complete isolator shall be as follows: -

Rated voltage	36 kV
Rated frequency	50 Hz
Rated lightning impulse withstand voltage	200 kVp
Rated power frequency withstand voltage, dry	95 kV
Rated normal current	400 Amps
Rated short time withstand current for 3 sec, min.	18.0 kA
Minimum creepage distance of insulators	900 mm

5. TESTS AND INSPECTION

5.1 The isolator shall be inspected and tested in accordance with the requirement of IEC 129 and IEC 60694 and this specification. It shall be the responsibility of the manufacturer to perform or to have performed all the tests specified.

5.2 Copies of previous Type Test Reports certified by the National Testing/ Standards Authority of the country of manufacture or ISO/IEC 17025 accredited testing laboratory shall be submitted with the tender (including certificate of accreditation for laboratory) for the purpose of technical evaluation, all in English language.

Copies of the type test certificates and type test reports for the isolator offered to be submitted for tender evaluation shall include:

(i) Dielectric tests(Lightning Impulse and Power Frequency Withstand Tests),

(ii) Short time withstand and peak withstand current tests,

(iii) Temperature rise test,

(iv) Measurement of the resistance of circuits,

(v) Tightness tests,

(vi) Operation and Mechanical endurance tests.

5.3 The isolating link shall be subject to acceptance test at the manufacturer's works before dispatch. Acceptance tests will be witnessed by Kenya Power Engineers and shall include :

(i) Dielectric test on main circuit.

(ii) Measurement of resistance of main circuit.

(iii) Design and visual checks.

(iv) Mechanical and operating tests.

5.4 Test reports for each Disconnector shall be submitted to Kenya Power for approval before shipment.

5.5 The isolator shall be inspected/tested by Kenya Power before acceptance at stores. The supplier shall replace/rectify without charge to Kenya Power equipment which upon inspection, test or use fail to meet any or all the requirements in the specification.

6.0 MARKING AND INSTRUCTION

6.1 Instructions, in English, for the assembly and installation of the complete device shall accompany the equipment during delivery.

6.2 The isolator shall be marked (permanently by engraving or embossing) in accordance with IEC 129 and IEC 60694. All markings shall be in the English language and figures representing ratings shall be followed by the symbol of the unit in which they are expressed.

ANNEX A: Guaranteed Technical Particulars *(to be filled and signed by the Manufacturer and submitted together with copies of manufacturer's catalogues, brochures, drawings, technical data, sales records and copies of certificates/test reports for tender evaluation)*

Tender No. .....

Clause number	**Bidder's offer** (indicate full details of the offered equipment for each requirement of the specification)
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2. References	
3. Terms and Definitions	
4. Requirements	
4.1 Service Conditions	
4.2 Design & Construction	
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4.2.2	
4.2.3	
4.2.4	
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4.3.Rating	
Test & Inspection	
5.1	
5.2	
5.3	
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5.5	
Marking & Instructions	
6.1	
6.2	

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Manufacturer's Name, Signature, Stamp and Date