



Equipment Specification

Document No.: 4350.143

Originating Department: Distribution Engineering



Fuse Refill, 14.4 kV, STD BA

1. Introduction

This is a general specification that covers the minimum requirements for 14.4 kV, standard boric acid (BA) power fuses refills to be used in the distribution system in Puerto Rico. Further information will be provided by LUMA Energy at the time of order placement and will provide information on site specific conditions, quantity, and other requirements. This document includes the general electrical and mechanical characteristics of the material.

2. Special Requirements

Samples shall be furnished as requested by LUMA Energy. Vendors that have supplied this material to PREPA / LUMA on previous orders, will not have to furnish samples at bid opening. The material will be received at the LUMA's general warehouse (011) at Palo Seco, Puerto Rico. Shipping will include transportation and unloading at the indicated warehouse.

3. Quantity/Literature

Descriptive and technical literature must be supplied by vendor at time of bidding. This literature may include, but is not limited to details of material, drawings, documented testing, and instructions for use and installation. Failure to submit documents on time will cause bidder disqualification. For products described in this specification as requiring qualification, awards will be made only for such products that, prior to the time for opening of bids, had been tested and/or approved by LUMA. Evidence of PREPA's and/or LUMA Energy's approval of the equipment or material shall be supplied by vendor if requested by LUMA Energy.

4. Markings

- 4.1. Containers shall be marked outside with LUMA Energy's purchase order and item number.
- 4.2. Each fuse shall be marked with voltage & ampere ratings, and type as minimum.
- 4.3. Packaging labels and tags shall be waterproof.

5. Equal or Approved Equal to

EATON (see section 12 table 1 for models).



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6. Packaging

All material and equipment shall be packaged and marked in such a way as to facilitate handling and protection from damage and that the receiving warehouse can readily identify it and send it, in one complete unit, to a field location without opening crates or boxes to sort items and/or parts.

7. Number Per Package (Logistics)

Bidder shall indicate usual units per container at bid opening or as requested by LUMA.

8. Acceptance Criteria

8.1. Test required: certified by external laboratories.

8.2. Latest applicable codes, standards, and other regulations:

- a. IEEE C37.41-2016: for performing design tests for high-voltage (> 1kV) fuses, as well as for fuse disconnecting switches, are specified.
- b. IEEE C37.42-2016: for high-voltage (> 1kV) Class A and Class B expulsion and current-limiting fuses.
- c. IEEE C37.43: for high-voltage (> 1kV) distribution and power class expulsion, current-limiting, and combination-type external capacitor fuses and accessories, with rated voltages from 1 kV through 38 kV. For BA-400 type.

9. Description

9.1. These refills are used as spare parts for expulsion boric acid (BA) fuse type for underground distribution pad-mounted transformer protection system.

9.2. Shall be in accordance with the minimum melting-time characteristics curve for standard speed.

9.3. Shall be manufactured and tested as per ANSI standard C37.41 and C37.42.

9.4. Shall be made of silver-alloy or any other non-damageable material or metallic alloy with high resistance to corrosion and having a low electrical resistance (manufacturer shall state material used).

10. Inspection

The acceptance of any material or equipment shall in no way relieve the vendor from his responsibility to meet all the requirements of this specification, and it would not prevent subsequent rejection if such materials were found later to be defective.



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11. Proposal Information

11.1. Submitted proposals must include:

- a. Technical information
- b. Table of Compliance completed by the bidder with reference. (See Appendix 1)

12. Table 1: Warehouse and Asset Suite Identification Number

Item (Amp Rating) (BA)	Warehouse Catalog #	Asset Suite #	Voltage Rating	EATON (Model)
5E (200)	010-06683	55946	14.4kV	15BA2-5E
7E (200)	010-06691	55947	14.4kV	15BA2-7E
10E (200)	010-06709	55948	14.4kV	15BA2-10E
15E (200)	010-06717	55949	14.4kV	15BA2-15E
20E (200)	010-06725	55950	14.4kV	15BA2-20E
25E (200)	010-06832	55953	7.2kV	8BA2-25E
25E (200)	010-07665	54982	14.4kV	15BA2-25E
30E (200)	010-06733	55951	14.4kV	15BA2-30E
100E (200)	010-04035	55883	14.4 kV	15BA2-100E
150E (200)	010-04050	55884	14.4kV	15BA2-150E
150E (400)	010-06865	55954	14.4kV	15BA4-150E
200E (200)	010-07681	54983	14.4kV	15BA2-200E
200E (400)	010-06873	55955	14.4kV	15BA4-200E

— End of Specification —



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Document History


Item	Version
010-06683	4
010-06691	5
010-06709	5
010-06717	4
010-06725	4
010-06832	5
010-07665	5
010-06733	5
010-04035	2
010-04050	2
010-06865	3
010-07681	4
010-06873	5

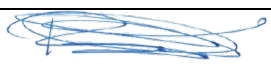
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Approver Manager Ricardo Castro









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Appendix



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Appendix 1: Table of Compliance

Line	Criteria	Description	Pass/Fail (P / F)	Comments
1	Specification	The Proponent complies with the corresponding specification document (4350.143).		
2	Industry Standards	The Proponent complies with the industry standards established in the specification document.		
3	Fuse Type	<ul style="list-style-type: none">• Boric Acid (BA)		
4	Material	<ul style="list-style-type: none">• Silver-Alloy or• Non-damageable material or metallic alloy with high resistance to corrosion and having a low electrical resistance		
5	Product Requirement	<ul style="list-style-type: none">• Operating Voltage: 15 kV• Refills are used for expulsion boric acid (BA) fuse type.• Manufactured and tested as per ANSI standard C37.41 and C37.42.		
6	Amp Rating	See table 1 on section 12		