ALKALINE BATTERIES

1. Scope

This standard covers the requirements for alkaline batteries.

This standard applies to the following Seattle City Light Stock Numbers:

Stock Number	Size
760191	AAA
760190	AA
760192	C
760194	D
760189	9 volt transistor
760185	6 volt lantern

2. Application

Alkaline batteries are for powering flashlights and other small electronic devices.

Do not mix new and old batteries. Do not mix alkaline, standard (carbon-zinc), or rechargeable batteries in the same device.

To minimize power loss during storage, batteries should ideally be stored at a maximum temperature of 77° F (25° C). Refrigerated storage is neither necessary nor recommended.

Batteries should not be left in electronic devices past their expiration date.

3. Industry Standards

Batteries shall meet the applicable requirements of the following industry standards:

ANSI C18.1M Part 1; "Portable Primary Cells and Batteries with Aqueous Electrolyte - General and Specifications," American National Standards Institute, 01-Jan-2001

ANSI/NEMA C18.1M Part 2-2011; "For Portable Primary Cells and Batteries with Aqueous Electrolyte - Safety Standard," National Electrical Manufacturers Association, 2010

4. Requirements

4.1 General

Classification	alkaline
Temperature Range, degrees C	
Storage	-18 to 35
Operating	-18 to 54
Shelf life, years at 21 degrees C, 80% initial capacity, nominal	
1.5 V cells	7
9 V cells	5

Batteries shall meet Environmental Protection Agency (EPA) requirements for landfill disposal. No mercury-added formulation shall be used. Batteries shall not contain cadmium.

standards coordinator	*standards supervisor*	*unit director*
John Shipek	John Shipek	Darnell Cola

4. Requirements continued

4.2 Detailed Requirements

Table 4, Detailed Requirements

Stock Number	Cell Size	Designation		Normal Voltage (V)	Normal Weight (g)
		ANSI	IEC		
760191	AAA	24A	LR03	1.5	11.5
760190	AA	15A	LR6	1.5	23.0
760192	C	14A	LR14	1.5	66.2
760194	D	13A	LR20	1.5	148.0
760189	9 volt transistor	1604A	6LR61	9.0	45.6
760185	6 volt lantern	908A	-	6.0	665.0

5. Marking

Each cell shall be legibly marked with a battery expiration date.

6. Packaging

Batteries shall be packaged to prevent damage during shipping, handling, and storage.

Batteries shall be packaged in cardboard cartons in quantities up to 50 per carton.

Each shipping container shall be marked with Seattle City Light's Purchase Order Number.

7. Issuance

EA

8. Approved Manufacturers

8.1 Normal Situations

Table 8, Approved manufacturers for normal situations

Stock Number	Cell Size	Duracell Procell	Energizer Industrial	Rayovac Maximum
760191	AAA	PC2400	EN92	824
760190	AA	PC1500	EN91	815
760192	C	PC1400	EN93	814
760194	D	PC1300	EN95	813
760189	9 volt transistor	PC1604	EN22	A1604
760185	6 volt lantern	-	EN529	-

8.2 Emergency Situations

In situations deemed by Material Control as emergencies, the following exceptions are allowed:

- Duracell Coppertop (alkaline) may be substituted for the equivalent size Duracell Procell product.
- Energizer (alkaline) may be substituted for the equivalent size Energizer Industrial product.
- Rayovac (alkaline) may be substituted for the equivalent size Rayovac Maximum product.

In emergency situations, Seattle City Light packaging requirements may be waived.

9. References

Shipek, John; SCL Engineer, subject matter expert, and originator of 7660.24 (john.shipek@seattle.gov)

Rayovac: www.rayovac.com

Rayovac; Application Notes & Product Data Sheet, OEM 151 (R-3/99)

Energizer: www.data.energizer.com/

Energizer : Product Datasheet, Form No. EBC-1203J

Duracell: www.duracell.com

Duracell: Product Data Sheets, 6/08

IEC Standard for Primary Batteries, Part I: General (86-1) and Part II: Specification Sheets (86-2), 1982