Government of the District of Columbia
Department of Consumer and Regulatory Affairs

Interpretation of Regulations Document
Reliable Source of Power

2018-004

References:

- **Section 913.2 IBC** 913.2 Protection against interruption of service. The fire pump, driver and controller shall be protected in accordance with NFPA 20 against possible interruption of service through damage caused by explosion, fire, flood, earthquake, rodents, insects, windstorm, freezing, vandalism and other adverse conditions.
- **NFPA 20 Standard**

The question has arisen whether or not a standby generator is required for buildings that require fire pumps. As per the National Fire Protection Association (NFPA) 20, *Standard for the Installation of Stationary Pumps for Fire Protection*, does not require that the normal power source be infallible. NFPA 20 provides the code official the following guidance for deciding whether the power source is reliable:

1. The power source has not experienced any shutdowns longer than 4 continuous hours in the year before the fire pump installation plans are submitted for approval. If the normal source power plant has been intentionally shut down for longer than 4 hours in the past, it is reasonable to require a backup source of power.
2. Power outages, other than those caused by natural disasters or electric grid management (regional blackout), have not been experienced in the area of the protected facility. If the normal source of power fails under these circumstances, the fire protection system could be supplied through the fire department connection. However, if the power grid is known to have had problems in the past (e.g., switch failures or substation shorting), it is reasonable to require a backup source of power.
3. The normal source of power is **not** supplied by overhead conductors immediately outside the protected facility. According to NFPA 20, many utility providers will disconnect power to the facility during an emergency by physically cutting the overhead conductors which could mistakenly cut the power supplying the fire pump. Additionally, fire departments will never operate aerial apparatus near live overhead power lines, so if the normal source of power must be shut off a backup source of power is required.
4. Only the disconnect switches and overcurrent protection devices permitted by NFPA 20 are installed in the normal source of power. Power disconnection and activated overcurrent protection should only occur in the fire pump controller.

A letter from Pepco Holdings, Inc. dated May 13, 2015 demonstrates their reliability exceeds 99.96% in years 2010 through 2014. Therefore, based on PEPCO's record of reliability and the guidance provided by NFPA 20, PEPCO is regarded as a reliable source of power IF the site conditions reflect the circumstances in items 1-4 above.

Lynn Underwood, MCP
Chief Building Official, DCRA

January 30, 2018

Pepco Holdings, Inc

701 Ninth Street, NW
Washington, DC 20068
202 872-2195
May 13, 2015

[redacted]

This letter is in response to your recent inquiry regarding the installation of an electric motor-driven fire pump in a commercial building in the District of Columbia in accordance with NFPA 20, Standard for the Installation of Stationary Pumps for Fire Protection (NFPA 20).

NFPA 20 Section 9.2.1 requires an electric motor-driven fire pump be provided with a normal source of power as a continually available source. NFPA 20 Section 9.3.2 requires at least one alternate source of power be provided where the normal source is not reliable.

Potomac Electric Power Company (Pepco) provides electric service to the District of Columbia and has had the following results for the past five years based on the Average Service Availability Index (ASAI) (IEEE 1366, 2003) [1]. This is the ratio of the total number of customer hours that service was available during the year to the total customer hours of demand:

Year	ASAI
2010	99.9694%
2011	99.9694%
2012	99.9749%
2013	99.9763%
2014	99.9845%

We believe that the ASAI information demonstrates the reliability of the Pepco electric service for purposes of evaluating the requirements of NFPA 20 Section 9.3.2.

Should you have any questions, please feel free to contact me on (202) 872-2195.

Sincerely,

Joseph L. Navarra
Finance Manager

[1] For further information on ASAI, please reference IEEE 1366-2003, IEEE Guide for Electric Power Distribution Reliability Indices.