

Associated Risks: Generators Installation, Safety Precautions and Regular Maintenance Schedules

Due to the increasing risk of power outages across the country, more and more facilities are installing back-up generators. Here are our 'Top 5' tips for working with and/or installing power generators:

Selecting a Generator

When it comes to portable generators, only a limited number of appliances can be energized in the event of a power failure. It is essential to determine the 'constant wattage' which is the sum total of the wattages of each individual appliance that you wish to keep functional.

Motor driven appliances, like refrigerators and air-conditioners, can require up to three times as much power as their constant wattage at the time of starting up. The chosen generator should meet or exceed the 'constant wattage' rating and have a 'surge rating' that exceeds the 'start-up wattage' requirements.

Installation Procedures

Equipment should always be installed, serviced and repaired only by Authorized Service Dealers, or competent, qualified and certified technicians who have a thorough knowledge of the equipment and always comply with standard operating procedures, applicable codes and regulations. NFPA section 110 provides important information on 'Standards for Emergency and Standby Power Systems'.

The unit should be placed outdoors in a protective enclosure, where sufficient air for cooling and ventilation is available in an unobstructed manner. The generator should be placed on a non-combustible, non-conducting level surface situated slightly above ground level to prevent contact from rising water levels.

The generator should be installed in close proximity to the location of the transfer switch and the fuel supply, to reduce the required length of cabling and piping respectively. You may be required to seek a permit if you intend to store a large fuel tank. The fuel pipe sizing, construction and layout must comply with National Fire Protection Association (NFPA) section 54 for natural gas

applications and NFPA section 58 for liquid propane applications.

It is essential to consult a qualified electrician to determine grounding requirements and follow procedures that meet local regulations.

The unit should be connected to the electrical system supplied by the utility only by means of the automatic transfer switch. This will ensure isolation between the generator's electric system and the utility distribution system. In the absence of a transfer switch, the safest option is to plug the essential appliances directly into the generator.

Safety Precautions

Installation, repair and maintenance should always be in accordance with the manufacturer's instructions and recommendations.

Exhaust fumes emitted by generator sets contain poisonous gases like carbon monoxide that can be life threatening and result in death. Exhaust systems must be properly installed, adequate ventilation must be provided to ensure unobstructed flow of cooling and ventilating air and emissions must be directed away from inhabited zones.

The area around the generator must be clean and free of clutter and any combustible material.

Electrical Hazards

All power voltage supplies should be turned off at the source while installing or servicing the generator. All electrical connections, such as wires, cables and terminals must be properly insulated and covered, and should not be touched with bare hands or while in contact with water. This is essential to prevent the occurrence of an electric shock.

Fuel or oil spills around the generator, leakages from the unit's fuel system and fuel supply lines, and presence of combustible materials around the generator will pose the risk of an explosion.

A fire extinguisher should be readily available. Use of extinguishers that operate on carbon tetra-chloride is strictly prohibited due to the fact that the fumes are toxic and can deteriorate the insulation on the wiring of generators.

Smoking in the vicinity of the equipment can be fatal.

Regular Maintenance Schedule

Annual, semi-annual or quarterly maintenance schedules should be strictly followed to increase the reliability of the equipment. When the unit is inspected and exercised regularly, it continues to deliver consistent output as per expectations. Proactive maintenance also helps in detecting damages and defects at an early stage allowing preventive measures to be taken in a timely fashion. Following the original manufacturers recommended maintenance schedule is strongly advised.

While Intact Public Entities Inc. does its best to provide useful general information and guidance on matters of interest to its clients, statutes, regulations and the common law continually change and evolve, vary from jurisdiction to jurisdiction, and are subject to differing interpretations and opinions. The information provided by Intact Public Entities Inc. is not intended to replace legal or other professional advice or services. The information provided by Intact Public Entities Inc. herein is provided "as is" and without any warranty, either express or implied, as to its fitness, quality, accuracy, applicability or timeliness. Before taking any action, consult an appropriate professional and satisfy yourself about the fitness, accuracy, applicability or timeliness of any information or opinions contained herein. Intact Public Entities Inc. assumes no liability whatsoever for any errors or omissions associated with the information provided herein and furthermore assumes no liability for any decision or action taken in reliance on the information contained in these materials or for any damages, losses, costs or expenses in a way connected to it. Intact Public Entities Inc. is operated by a wholly owned subsidiary of Intact Financial Corporation. Intact Design® and Risk Management Centre of Excellence® are registered trademark of Intact Financial Corporation or its affiliates. All other trademarks are properties of their respective owners. TM & © 2021 Intact Public Entities Inc. and/or its affiliates. All Rights Reserved.