

# PSI Control Solutions



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## NEC Requirements Emergency and Standby Power

# **NEC Requirements** **Emergency and Standby Power** **How to Implement**

- 1. Emergency Power Systems – Legally Required**
- 2. Standby Power Systems – Legally Required & Optional**
  - **Temporary Source of Power for Maintenance or Repair of Alternate Power Source**

## Specifying Alternate Power needs

Interpreting specifications ... selecting appropriate / required equipment

## Design / Build your best solution

Connecting equipment to the electrical system

Combo MTS (Rotary Switch) & Gen Tap Box  
or  
MTS (Breaker / Breaker) with Tap Box

NEC 700.3(F)  
COMPLIANT!



Generator Docking Station with Main Breaker  
or  
Dual Purpose Generator Docking Station (Load Bank)

MTS (Rotary Switch)



Generator Tap Box  
or  
MTS (Breaker / Breaker) with Generator Tap Box



Cam-Lok® Power Cables



Automatic Transfer Switch  
2



MTS (Breaker / Breaker)



# *NEC Requirements*

## *Emergency and Standby Power*

### **Emergency Systems – Legally Required**

#### **NFPA 2017 / NEC 700. Emergency Systems**

##### NEC 700.2

- Legally Required by governmental agency  
Applies to buildings such as hospitals and public utility facilities

##### NEC 700.3(F)

- Permanent switching required to connect a second temporary generator during periodic testing (i.e. *Combo MTS & Gen Tap Box*)
- Manual Switching to second temporary generator permissible (i.e. *Manual Transfer Switch*)

##### NEC 700.3

- Periodic tests to be done under anticipated load (i.e. Load Bank)
- Manual switching to Load Bank is permissible (i.e. *Gen Docking Station with Main Breaker* or *Dual Purpose Generator Docking Station*)

##### NEC 700.2

- If supplying power essential to human life, transfer equipment shall be automatic (i.e. *Automatic Transfer Switch*); Mechanical or electrical interlocking is required

##### NEC 700.12 & NEC 700.5

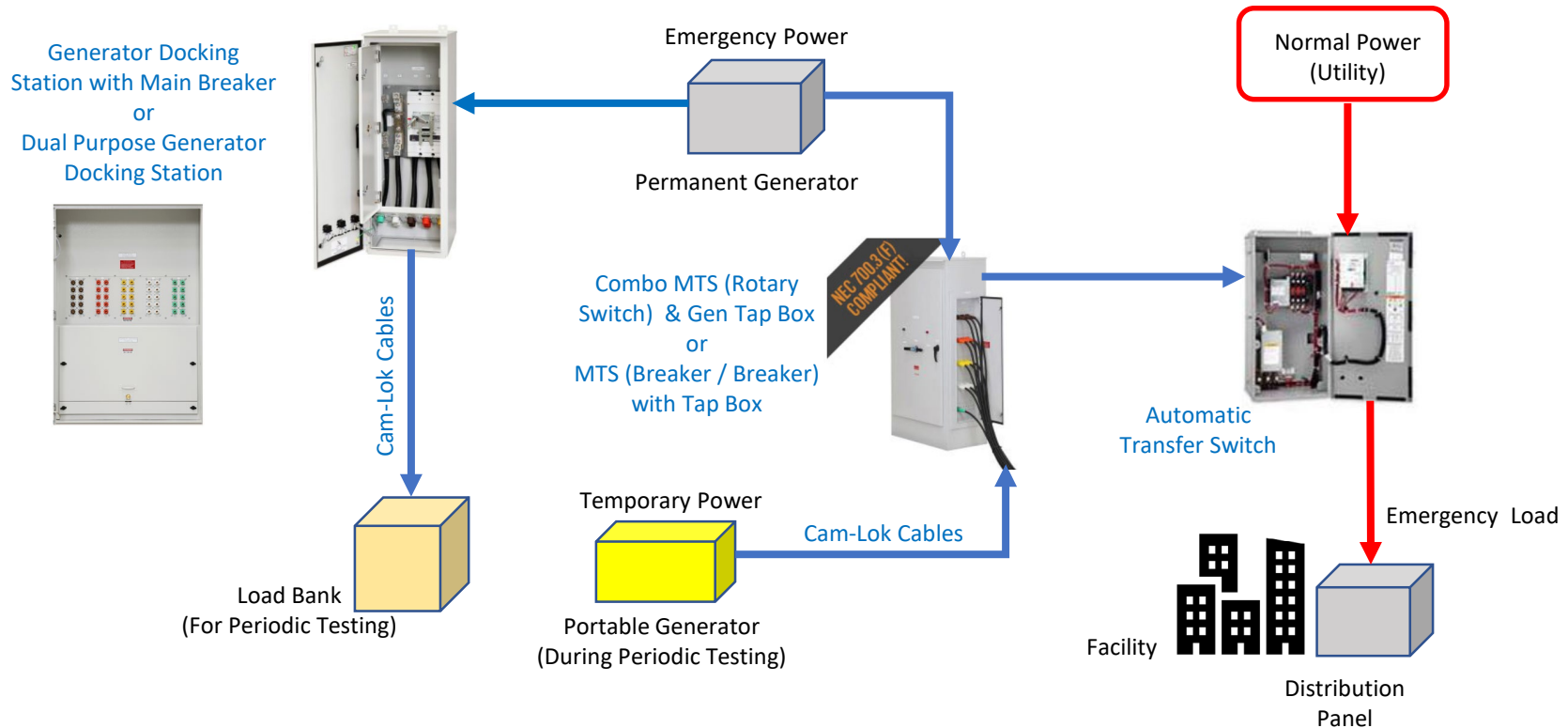
- Transfer shall not exceed 10 seconds
- Transfer equipment shall be automatic
- Transfer equipment shall supply only emergency loads

##### NEC 700.6

- Audible & Visual Signals are required when in use & when not functioning

# NEC Requirements Emergency and Standby Power Emergency Systems – Legally Required

## NFPA 2017 / NEC 700. Emergency Systems



# *NEC Requirements*

## *Emergency and Standby Power*

### **Standby Systems – Legally Required**

#### **NEC 701. Legally Required Standby Systems**

##### NEC 700.

- Legally Required System supplying “Non Emergency” Loads ... i.e. HVAC, Telephone, Smoke Evacuation, Lighting (but not Egress or Emergency Lighting), or Necessary Industrial Process Systems

##### NEC 701.3

- Periodic tests to be done under anticipated load (i.e. Load Bank)
- Manual switching to Load Bank is permissible (i.e. *Generator Docking Station with Main Breaker* or *Dual Purpose Generator Docking Station*)

##### NEC 701.5

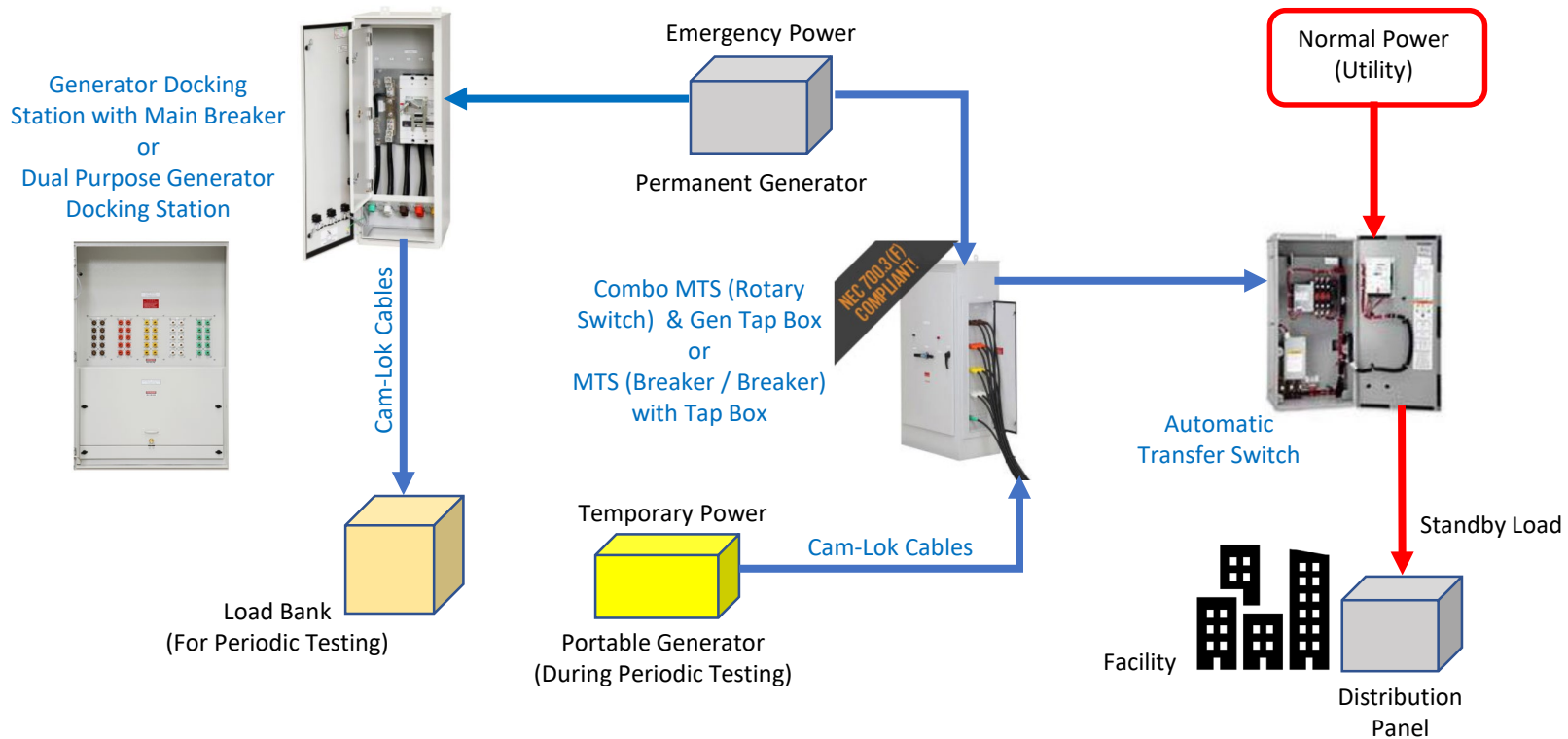
- Transfer equipment shall be automatic (i.e. *Automatic Transfer Switch*)
- Unlike Emergency Transfer Equipment, it is not prohibited from supplying other loads

##### NEC 701.6

- Audible & Visual Signals are required when in use & when not functioning

# NEC Requirements Emergency and Standby Power Standby Systems – Legally Required

## NEC 701. Legally Required Standby Systems



# *NEC Requirements*

## *Emergency and Standby Power*

### **Standby Systems – Optional**

#### **NEC 702. Optional Standby Systems**

##### NEC 702.

- This system is not legally required; It is chosen for convenience

##### NEC 702.4(B)

- The type of transfer equipment employed (Automatic Transfer Switch or Manual Transfer Switch), determines the size of the Optional Standby System

##### NEC 702.4(B)(1)

- When manual transfer equipment is used (i.e. *Manual Transfer Switch*), the “user” can manually select the load connected to the Optional Standby System (i.e. manually turn off certain circuit breakers)

##### NEC 702.4(B)(2)

- When / If automatic transfer equipment is used (i.e. *Automatic Transfer Switch*), the Standby System shall be sized to the full load being transferred (unless using Automatic Load Shedding)

##### NEC 702.5(Exception)

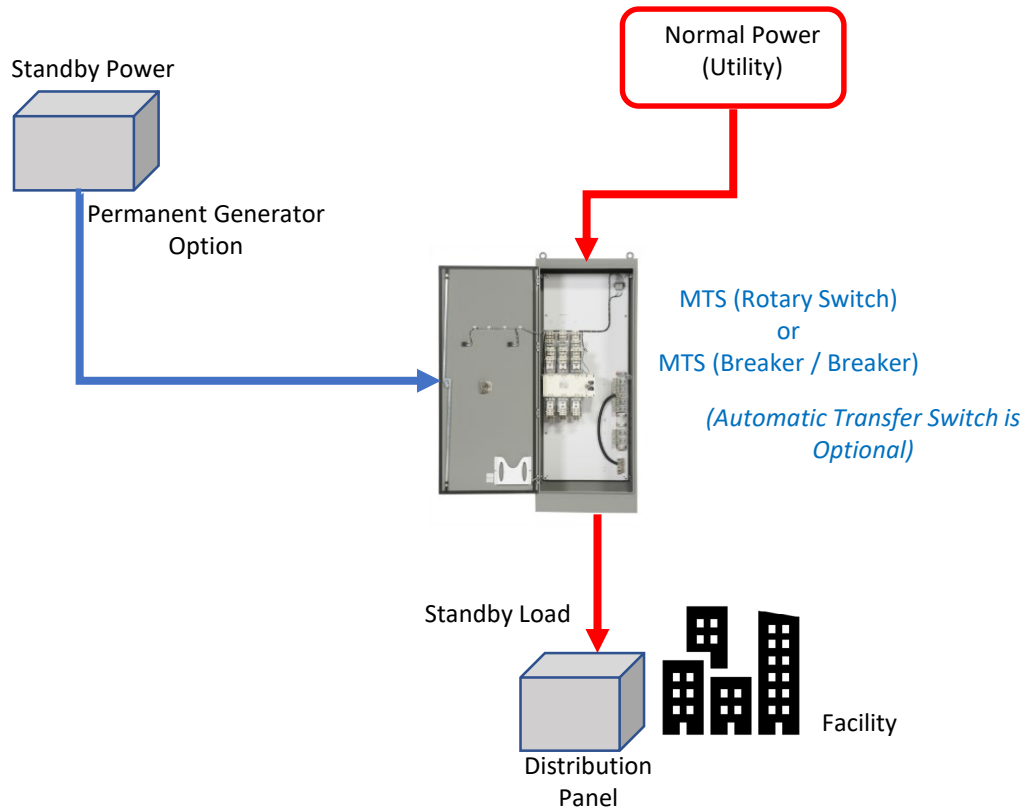
- Transfer equipment (Automatic Transfer Switch or Manual Transfer Switch), is not needed if a portable generator is used; Must ensure only “qualified persons” operate & normal supply is physically isolated

##### NEC 702.6

- Audible & Visual Signals are required when in use except for when portable generators are employed

# NEC Requirements Emergency and Standby Power Standby Systems – Optional

## NEC 702. Optional Standby Systems (With Permanent Generator Option)





# NEC Requirements Emergency and Standby Power Standby Systems – Optional

## NEC 702. Optional Standby Systems (With Portable Generator Option)

