



The ultimate solution for maintaining your nationwide generator network

Docking Stations and Selector Switches within a Generator System

1.0 Introduction:

Generator docking stations can be permanently installed to allow the rapid connection of temporary power from a mobile generator to avoid delays when emergency electrical power is needed in case of a utility outage.

This Information Sheet looks at the benefits of installing generator docking stations which permit the rapid connection of mobile generators during power outages.

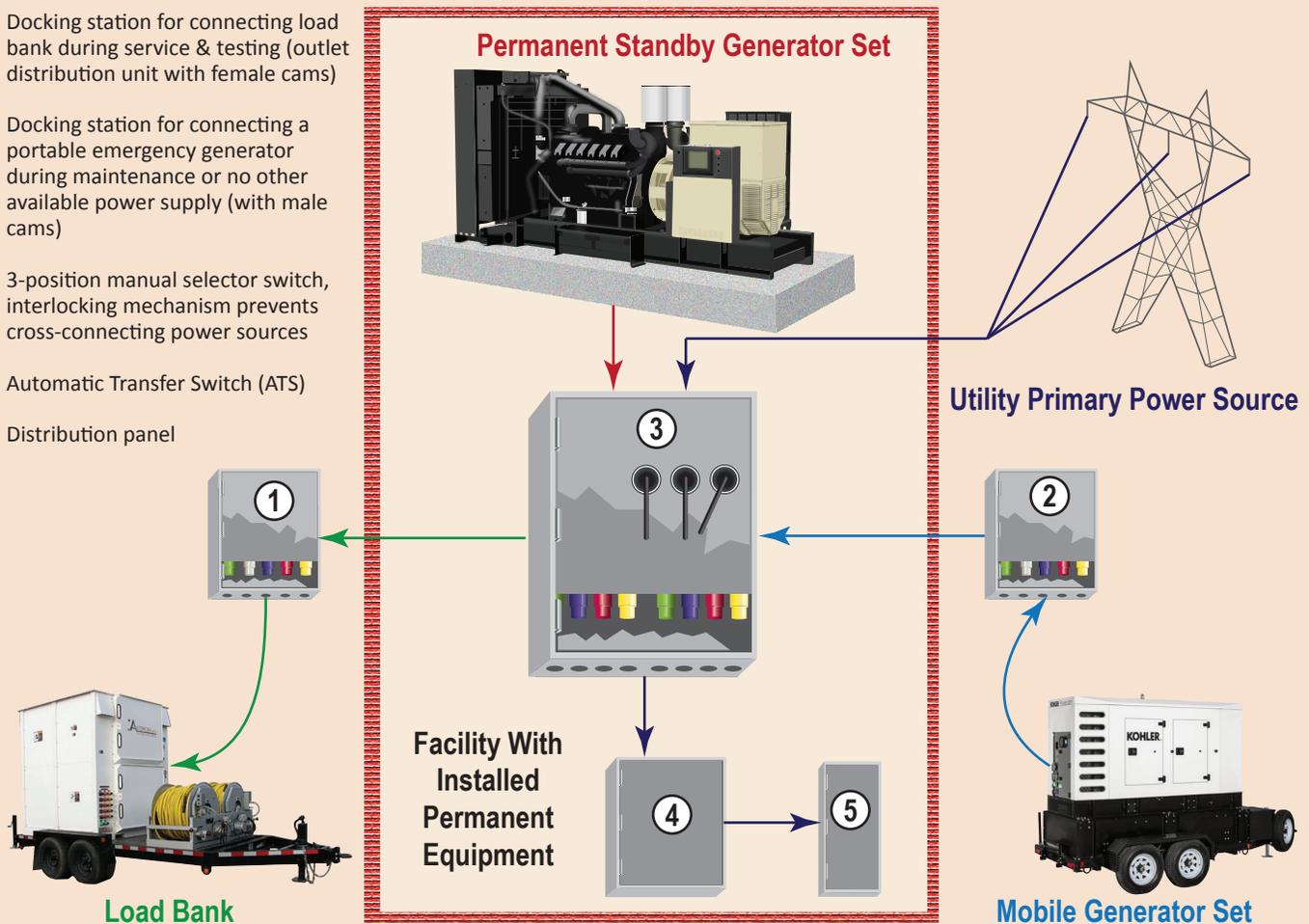
2.0 What is a Docking Station & Selector Switch:

A permanent, stationary, standby generator system is connected to the load via an Automatic Transfer Switch (ATS). Mechanically and electrically interlocked contactors ensure the load can only be connected to the generator or utility power, never both. There can be instances such as during maintenance, or equipment failure, when a mobile generator has to be connected to supply the load. It is expedient to have a connection system that enables rapid connection, particularly in critical power installations. The solution is a docking station that you can easily connect a mobile generator to and a selector switch to manually select the docking station.

A manual transfer switch enables easy selection between power sources and through interlocking, isolates power feeds. (See Diagram Two)

Typical Standby Power System Utilizing 3-Position Manual Transfer Switch & Docking Stations - Diagram One

- ① Docking station for connecting load bank during service & testing (outlet distribution unit with female cams)
- ② Docking station for connecting a portable emergency generator during maintenance or no other available power supply (with male cams)
- ③ 3-position manual selector switch, interlocking mechanism prevents cross-connecting power sources
- ④ Automatic Transfer Switch (ATS)
- ⑤ Distribution panel



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Docking stations would be installed on the exterior, with the manual transfer switch installed inside adjacent to switchgear system.

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3.0 Benefits of a Docking Station:

The following are the benefits in using a docking station and manual transfer switch. (see diagram one front-page)

3.1 Emergency Power -

Facilities equipped with standby emergency power systems that have installed a docking station have a quick connection solution should the permanent emergency power system not be available during a utility outage.

A Docking Station box installed, along with a manual transfer switch, enables a mobile generator set to be quickly and easily connected by means of camlok receptacle cables. The mobile generator will then supply power to the facility until the utility or standby system is back online.

3.2 Planned Maintenance -

Planned maintenance is recommended to ensure when an outage occurs the standby emergency power system is fully functional and able to run up and power the load while the utility is down. While not only best service practice, many critical installations falling under NFPA 110 regulations are subject to planned maintenance which includes load banking the generator to ensure it can carry its required load.

During load bank testing the generator is off line (See Diagram One). A mobile generator set is brought in to provide power should an interruption to the utility occur during maintenance and/or testing. Connecting the mobile set through a docking station and selector switch ensures on-site emergency power is available during permanent standby system maintenance.

4.0 3-way Manual Transfer Switch:

While a docking station enables quick connection of a mobile generator or load bank, installing a manual transfer switch between the docking station and the ATS enables the operator to easily switch to a portable load bank or mobile generator set, and at the same time ensure total system integrity as designed. Benefits of installing a switch and docking station are as follows:

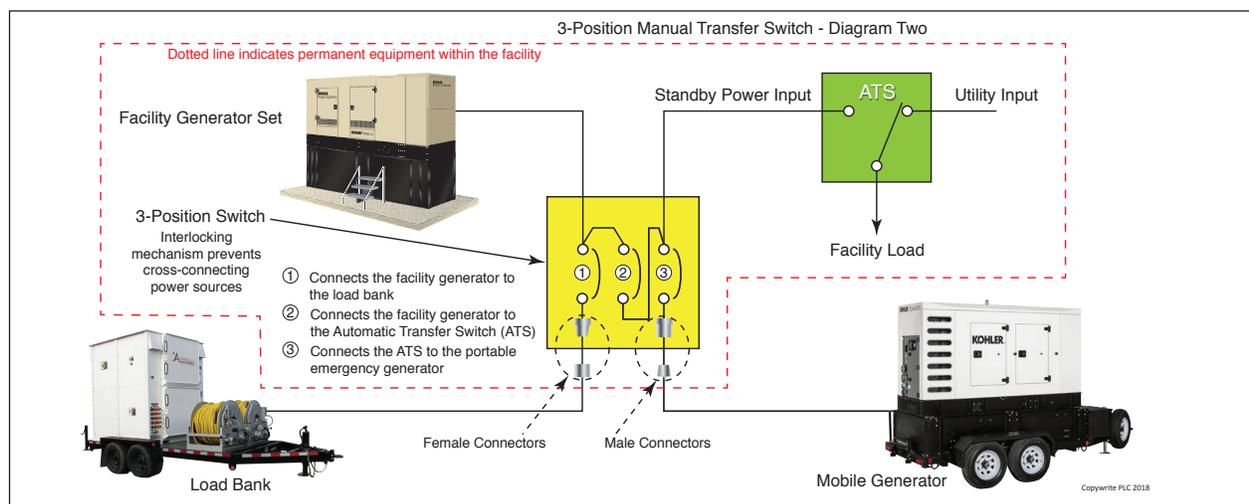
4.1 Safety to Operator and System -

With a docking station and a manual transfer switch permanently installed into the system (See Diagram Two), there is no possibility of inadvertently connecting an external source that could feed into the utility power or generator circuits should either source unexpectedly power up. The combination is an important contributor to operator safety during maintenance and the connection of emergency mobile power.

4.2 Ease of Operation and Speed -

By installing a docking station with camlok connectors, an operator does not have to manually connect cables to terminals. In an emergency situation such as no power to a critical facility, speed of connection is also critical.

A permanently installed manual selector switch enables quick changeover of power and minimum downtime.



5.0 Specifications:

A suitable UL listed docking station should be selected with sufficient amperage capacity to meet the output of the load and emergency generator to be utilized. The marketplace offers docking stations in the 100 to 4000 amp range. The smaller sizes are normally wall mounted while larger units above 1,200 amps will be floor/pad mounted.

6.0 Construction:

Underwriters Laboratory (UL) requires all standby power connection boxes (docking stations) to be designed, tested, and manufactured to specific standards. UL1008 covers all transfer switch equipment. We recommend that a weather-proof NEMA 3R (rated for indoor/outdoor use), powder-coated, steel or aluminum enclosure with a weather guard for the cable entry always be purchased.

7.0 Emergency Preparedness:

Statistics show that the number of natural disasters as well as their intensity, are on the rise. Natural disasters mostly occur in coastal areas and in the mid-west and southern states of the USA. This results in more frequent utility supply interruptions and/or brownouts. Also in many areas, the grid capacity to supply power can be stretched, especially during periods of peak demand as can be experienced during the summer months.

8.0 Location:

It is recommended that the permanent docking stations be installed in a convenient location, so as to allow for ease of placing the mobile generator or load bank source nearby, thus minimizing any disruption.



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