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DISTRIBUTION ENGINEERING DEPARTMENT
DISTRIBUTION DESIGN AND ANALYSIS

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TRANSFER OF LOAD FROM COMPANY'S SUPPLY
TO CUSTOMER'S EMERGENCY GENERATORS

FILE:

Standards Manual
Application and Design Manual No. 4

Field Manuals
No. 1 - Section 11, EO Specifications
No. 4 - Section 1, Services, Underground
No. 6 - Section 8, Operating Procedures
No. 16 - Section 4, Electric Services

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**TRANSFER OF LOAD FROM COMPANY'S SUPPLY
TO CUSTOMER'S EMERGENCY GENERATORS**

1. **PURPOSE** - This specification gives the requirements and characteristics of the transfer switch used with a customer owned low-voltage emergency generator. The operation of the transfer switch is such as to prevent the accidental paralleling of the emergency generator with the Con Edison secondary system.
2. **AREAS APPLICABLE** - All customer service areas.
3. **APPROVED SYSTEMS** - Transfer of load from the Company's supply to the customer's emergency generator can be accomplished using a transfer switch or an interlock system. The preferred method is to use an automatic transfer switch.
4. **THE TRANSFER SWITCH** - A transfer switch is a device that transfers load from one supply to another supply either manually or automatically.
5. **TRANSFER SWITCH CHARACTERISTICS**
 - 5.1 Construction, ratings and performance of automatic or manual transfer switches shall be in accordance with ANSI/UL 1008-1988.
 - 5.2 A transfer switch shall be three-phase, load break, double throw (break-before-make), as shown in the Attachment. The customer load is permanently connected to the blades of the switch. The Company supply and the customer's emergency generator are connected to stationary contacts at opposite sides of the switch. Blades of all three phases shall move simultaneously when transferring load to either the Company or customer emergency generator supply.
6. **THE AUTOMATIC TRANSFER SWITCH**
 - 6.1 An automatic transfer switch must be capable of automatically transferring a customer load from the normal supply to a stable alternate supply, in the event of failure of the normal supply, and manually returning the load to the normal supply after the normal supply has been restored and has become

stable. A minimum time interval of five minutes must be allowed before returning the load to the normal supply.

- 6.2** An automatic transfer switch must also be capable of manual operation if its automatic operation malfunctions.

7.0 THE BYPASS/ISOLATION SWITCH

- 7.1** A manually operated, three-phase, double throw load break bypass/isolation switch can be used with each transfer switch to provide means of bypassing and isolating the transfer switch, thus, permitting its maintenance and repair (See Attachment).

- 7.2** A mechanical interlock shall be provided between the transfer switch and the bypass switch to prevent the operation of the transfer switch whenever the bypass switch is used.

- 8. SHORT CIRCUIT DUTY** - The transfer switch and its isolating bypass switch, if provided, shall have the ability to withstand the available fault current at the location where the switches are installed.

- 9. APPROVED INTERLOCK** - The Company supply and the customer emergency generator may both be connected to a common switchboard main bus, provided that their paralleling to the main bus is prevented by means of a key interlock circuit breaker system or a combination of electrical and key interlock system using circuit breakers.

- 10. SERVICE DISCONNECT DEVICE** - A service disconnect device is required for both transfer switch and interlock type systems.

11. COMPANY'S APPROVAL OF CUSTOMER'S INSTALLATION

- 11.1** Before the customer's emergency equipment is installed, the customer shall submit to the Company, for its approval, the following requirements:

11.1.1 A one-line electrical diagram showing the proposed installation and the means used to prevent parallel operation.

11.1.2 A written statement signed by the customer stating that the emergency facilities will be used only during an interruption of the Company's electrical service, or a Company announced voltage reduction, and for

necessary testing purposes. Customers using emergency generating equipment under other than the above specified circumstances will be required to take service under the appropriate service classifications that permit parallel operation.

- 11.1.3 The Company reserves the right of field inspection to ensure compliance with subparagraph 11.1.1.



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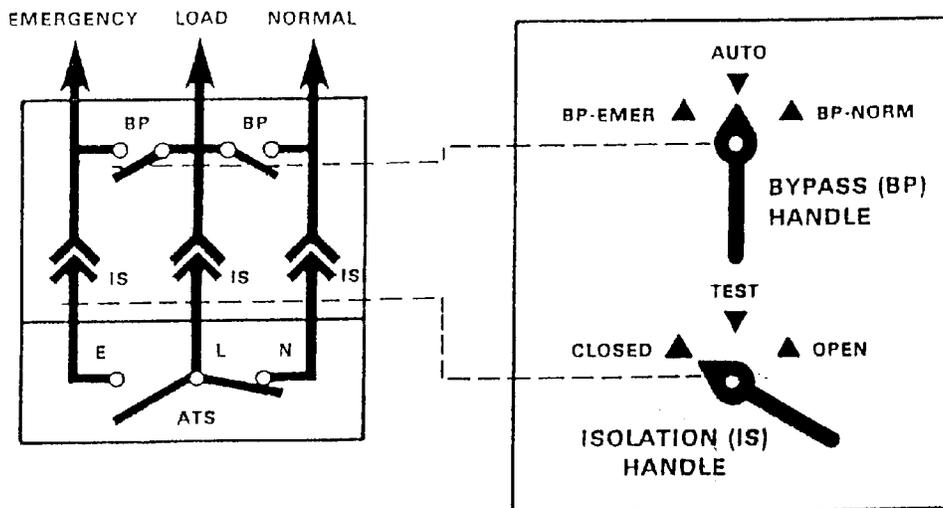
Paul Miroulis/jc

Attachment

<u>REVISION 2:</u> Editorial changes. Next Review Date: 11/98	<u>FILE:</u> <u>Standards Manual</u> Application and Design Manual No. 4 <u>Field Manuals</u> No. 1 - Section 11, EO Specifications No. 4 - Section 1, Services, Underground No. 6 - Section 8, Operating Procedures No. 16 - Section 4, Electric Services
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ATTACHMENT

TRANSFER SWITCHING SCHEME



Legend:

- ATS = Automatic Transfer Switch
- BP = Bypass Switch
- IS = Isolation Switch
- LOAD = Customer Load
- NORMAL = Con Edison Supply
- EMERGENCY = Customer Emergency Generator