DIRECT TRANSFER TRIP REQUIREMENTS

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USE : This document outlines the Direct Transfer Trip (DTT) requirements for customer generation installed on distribution and transmission circuits.

STANDARD ORIGINATED	PREVIOUS STANDARD REVISION	PREVIOUS STANDARD NUMBERS
04-01-25	N/A	EG 453.10 (12-07-20)

REVISION SUMMARY: Updated generator to customer facility per 2026 IURC documentation.

REFERENCE(S): (All references are latest revision; unless noted)

National Standard(s)

a. IEEE 1547: Standard for Interconnection and Interoperability of Distributed Energy Resources with associated Electric Power System Interfaces

b. UL 1741: Standards for Inverters, Converters, Controllers and Interconnection System Equipment for use with Distributed Energy Resources

SPECIFICATIONS:

1. GENERAL:

1.1. Direct Transfer Trip (DTT) is a protection scheme installed for high-speed tripping of a customer facilities. The DTT scheme provides a fast fault clearing function protecting both the customer facilities and NIPSCO's electric grid from an islanded condition, while maximizing public and personnel safety. A fast fault clearing function such as DTT helps to maintain power quaility for all customers on the NIPSCO electric grid.

1.2. This document outlines Direct Transfer Trip requirements for customers connected to the NIPSCO electric grid at nominal voltages of 12,470 V (12.5 kV), 34,500 V (34 kV), and 69,000 V (69 kV) with customer facilities. Such requirements are based on the nameplate capacity and on the customer facility type.

1.3. Requirements mentioned in this document are applicable only to customers connected to the NIPSCO electric grid. Customers connected at 12.5 kV will be governed by section 2 of this document, customers, connected at 34 kV and 69 kV will be governed by section 3 of this document, and customers connected at a voltage level above 69 kV will be evaluated by NIPSCO Transmission Planning Department on a case-by-case basis.

2. REQUIREMENTS WHEN CONNECTED TO 12.5 kV

2.1. Customer shall be required to install a remote-source Direct Transfer Trip (DTT) scheme.

2.2. Customer with a single customer facility with nameplate capacity of greater than 500 kW shall be required to have provision for remote-source DTT regardless of the generation or storage device type.

2.3. Customer with multiple customer facilities with an aggregate nameplate capacity of greater than 500 kW at a single site is subject to review by NIPSCO's Distribution Planning Department. The customer may be required to have provision(s) for remote-source DTT irrespective of the generation or storage device type.

2.4. Customer facilities not included in Requirements 2.2 and 2.3 will be assessed for remote-source DTT by NIPSCO's Distribution Planning Department.

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2.5. In evaluation of aggregate customer facilities for remote-source DTT requirements, NIPSCO may take into consideration the presence of any pre-existing generation on the NIPSCO grid in relation to the requested interconnection point.

2.6. Interconnection customers who meet the remote-source DTT requirement as described in this document shall be required to install protection and communication equipment to support remote-source DTT capability.

2.7. NIPSCO will specify the remote-source DTT design scheme, equipment, and communication channel.

2.8. Remote-source DTT will issue a trip to the customer facilities' recloser upon detection of a fault on the NIPSCO source circuit.

2.9. Protection and communication equipment and their operation will be satisfactorily tested by NIPSCO before the customer facilities project is commissioned.

2.10. Interconnection Customers may request NIPSCO to investigate remote-sourcing of DTT from multiple sources. This would be provisional and at customers' expense.

3. REQUIREMENTS WHEN CONNECTED AT 34,500 V (34 kV) AND 69,000 V (69kV)

3.1. Customer shall be required to install either a remote-source DTT scheme or a localized tripping scheme for occurrences of isolated or islanded conditions.

3.2. Customer with a single customer facility with nameplate capacity of 3,000 KVA or greater shall be required to have provision for remote-source DTT irrespective of the generation or storage device type.

3.3. Customer with multiple customer facilities with an aggregate nameplate capacity of 3,000 KVA or greater at a single location is required to have provision for remote-source DTT irrespective of the generation or storage device type.

3.4. Customers with customer facilities not included in Requirements 3.2 and 3.3 will be assessed for remote-source DTT by NIPSCO's Transmission Planning Department based on generation and storage types as follows.

3.4.1. Devices utilizing inverter based technology that meets the provisions of the most recently approved versions of IEEE 1547 "Standard for Interconnection and Interoperability of Distributed Energy Resources with Associated Electric Power System Interfaces" or UL 1741 "Standards for Inverters, Converters, Controllers and Interconnection System Equipment for Use with Distributed Energy Resources" may be excluded for the remote-source DTT requirement. Generator protection system and inverter system should be certified to pass the anti-islanding test.

3.4.2. Synchronous generators may be excluded from the remote-source DTT provided the installed protection system is able to detect and trip for an islanding condition utilizing over/under voltage and over/under frequency relays, as well as additional protective relaying which may be required. Protection equipment is expected to comply with NIPSCO's protection system requirements and should minimize out-of-synchronism conditions utilizing out-of-step relaying.

3.4.3. Combined Heat and Power (CHP) plant may be excluded from the remote-source DTT requirements provided it meets the same protection requirement applicable to synchronous generator as mentioned in section 3.4.2.

3.4.4. Induction generators may be excluded from remote-source DTT requirement.

3.5. In evaluation of aggregate customer facilities for remote-source DTT requirements, NIPSCO may take into consideration the presence of any pre-existing generation on the NIPSCO system in close proximity of the requested interconnect point.

3.6. Interconnection customers who meet remote-source DTT requirement as described in this document will be required to install protection and communication equipment to support remote-source DTT capability.

3.7. NIPSCO will specify remote-source DTT design scheme, equipment, and communication channel.

3.8. Remote-source DTT will issue a trip to the customer facility upon detection of a fault in the NIPSCO electrical system and upon loss of the communication channel.

3.9. Remote-source DTT will be required for both line relaying and breaker failure. Customer main breaker shall include local breaker failure protection with DTT initiation.

3.10. Protection and communication equipment and their operation will be satisfactorily tested by NIPSCO before the generation project is commissioned.

3.11. Interconnection customers may request NIPSCO to investigate remote-sourcing of DTT from multiple sources. This would be provisional and at the expense of the customer.

4. COST

Cost of the upgrades to the protection and communication equipment/channel to facilitate remote-source DTT at the NIPSCO substation would be the responsibility of the customer per the interconnection agreement.

5. MAINTENANCE

NIPSCO reserves the right to test relaying and communication equipment associated with successful remote-source DTT between the source substation and the customer facility whenever deemed necessary. Customer facility owner is responsible for maintenance of their equipment and for carrying out periodic testing in the presence of NIPSCO personnel of either remote-source or local tripping schemes at intervals not to exceed five (5) years.