

Direct Transfer Trip Mitigation For Increased DER on the LIPA system

Considering Delay of First Shot Reclose or Block of First Shot Reclose (Reclose Block) Of Substation Feeders

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DER Requirement for Feeders With Reclosing

- **Protect the LIPA System and the equipment of all the customers on the feeder**
- **Require DER is offline before feeder recloses after a trip**
- **Avoid severe transient impacts that can damage customer equipment**
- **Inverter based DER is designed to be offline 2 seconds after feeder de-energized with anti-islanding methods**
- **Presently the first shot reclose delay after initial trip is either instantaneous or 300ms, depending on the relays installed**

Benefits of both approaches

Both Delay of first shot reclose 2.5s and Block of first shot reclose have these benefits:

- No MAIFI impact for LIPA customers
- No DTT for small DER but feeder relays may need to be replaced
- No Verizon recurring billing for DTT communication line

Detriment of Block of first shot reclose

- **DER Cost:**
 - Comparable/higher installation cost compared to reclose delay
- **Equipment impact**
 - Modification of all vintages of switchgear may not be feasible
 - Additional HV equipment and maintenance
- **Switchgear and exit cable testing impact**

Conclusions

- **Both Delay and Block of first shot reclose:**
 - Mitigate DTT requirement to DER
 - Are desirable to DER Developers
 - May require relay replacement
- **Delay of First shot reclose is preferred for these reasons:**
 - Lower/comparable cost of Block of first shot reclose, considering installation and O&M costs . Costs may be much lower if only relay settings are needed.
 - Less switchgear modifications, should be feasible for all switchgear
 - No modifications to HV equipment or feeder testing procedures

Next Steps

- PSEG LI plans to incorporate Reclose Delay into the screening requirements. This may not eliminate all DTT for all levels of DER and Reclose Block may still be an option at some substations
- Applicable Reviews
- Implementation Time Frame /Applicability
- Review screening criteria requirements and update technical documents as applicable
- A notice will be posted on PSEG LI Website advising SGIP project applicants about the proposed actions being considered with respect to direct transfer requirement