

DSO

DISTRIBUTION SYSTEM OPERATOR

N-3 Service Regional Development Programme

UK
Power
Networks 
Delivering your electricity



N-3: What is it?

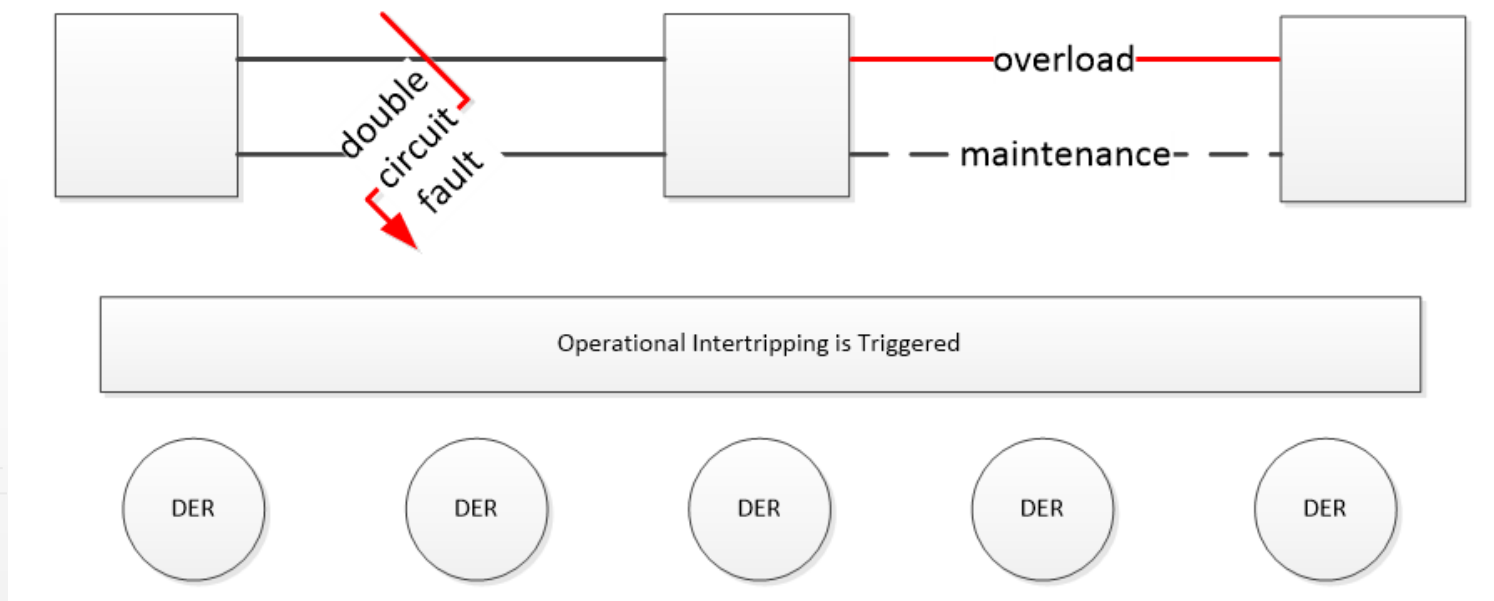


In the context of a Regional Development Programme (RDP), an N-3 event is a ‘double circuit fault’ on the transmission network occurring while a transmission circuit is out of service during planned maintenance.

The N-3 Operational Intertripping Scheme (OTS) is a mechanism to ensure that, during an N-3 event, the transmission network remains operable by disconnecting the output of the distributed connected generators, required to reduce the power flowing toward the transmission network, below the limit requested by National Grid ESO. Only distributed connected generators that have this requirement in their connection agreement are managed by the N-3 Operational Intetripping scheme.

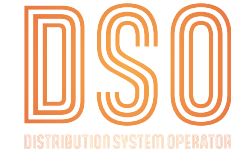
N-3 Operational Intertripping Scheme, is a Post Fault service which allows generation capacity to be disconnected within 30 seconds of the N-3 event.

N-3: How does it operate?



N-3 event= (In context of RDP) a double circuit fault on a line under maintenance that triggers a pre-armed curtailment instruction towards DERs within a specified GSP.

N-3- How does it operate?



The GSP in UK Power Networks managed by the N-3 Operational Intertripping scheme are Bolney, Ninfield, Sellindge, Canterbury and Richborough in Southern Power Networks (SPN).



N-3: How does it operate?



When a transmission circuit in one of the 5 GSPs where N-3 is operational is out of service, an 'arming' request is sent from the ESO Control Room (ENCC) to UK Power Networks' Control Room via ICCP. The arming request is sent for each of the Grid Supply Points (GSP) at risk of being overloaded in the event of an additional double-circuit fault.

The arming instruction from the ESO Control Room includes a pre-defined cap that UK Power Networks needs to keep the power flow below, following an N-3 event.

Once the system has been armed, in the event of a double circuit fault affecting the 5 GSPs, the NG transmission owner (TO) will issue an OTS instruction to UK Power Networks, in the following ways:

- Physical OTS link from Sellindge 400kV substation to Sellindge 132kV substation, and to UKPN Advanced Distribution Management System (ADMS) via UKPN RTU.
- ICCP link between ESO and UKPN ADMS.

Once UK Power Networks receives the OTS instruction, it sends a control signal to open the circuit breakers of the DER required to achieve a pre-defined MW cap within the selected GSP.