



Smart Street Trial Design & Test Regimes

29 January 2016

A large, white, stylized illustration of a cityscape is positioned at the bottom of the page. The city includes various buildings, a bus, a train, and people walking. A prominent sign on a post in the center of the city reads "SMART STREET" in bold, green, uppercase letters. The sign is set against a green background that matches the overall theme of the document.

SMART STREET

VERSION HISTORY

Version	Date	Author	Status	Comments
First Draft	23/10/2015	Dan Harber/ Ben Ingham	1.0	
1.0	29/01/2016	Ben Ingham	Issued	

LIST OF ABBREVIATIONS

Abbreviation	Explanation
AVC	Automatic voltage control
C ₂ C	Capacity to Customers (Second Tier LCN Fund project)
CLASS	Customer Load Active System Services (Second Tier LCN Fund project)
COP	Codes of practice
CRMS	Control room management system
CVR	Conservation voltage reduction
DG	Distributed generation
DSSE	Distribution system state estimator
HV	High voltage (11kV / 6.6kV)
IPSA	Interactive power system analysis
LCT	Low carbon technology
LCN Fund	Low Carbon Networks Fund
LV	Low voltage (400V / 230V)
NMS	Network management system
OHL	Overhead line
OLTC	On-load tap changer
RTU	Remote terminal unit
SCADA	Supervisory control and data acquisition system
SP5	Spectrum Power 5 (Siemens optimisation software)
THD	Total harmonic distortion
VVC	Volt/Var control

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1 INTRODUCTION

1.1 Purpose of document

The purpose of this document is to achieve the associated deliverable related to the following Smart Street **SDRC 9.2.1 – Publish the trials and test regimes design report on the Smart Street website by October 2015.**

This document describes the Smart Street trial methodology and the resultant test regimes to enable all relevant parties to understand what techniques will be trialled. The report aims to summarise when, where and how the Smart Street techniques will be applied and the anticipated outputs to successfully achieve the project objectives.

This document should be considered as a 'living document', as it will be updated with any lessons learnt as the trials progress. Please be aware that this document refers to both the Smart Street [Site Selection Methodology](#) and the [Network Design Methodology](#).

1.2 What is Smart Street?

Smart Street aims to utilise advanced real time optimisation software to simultaneously manage HV and LV network assets to respond to customers' changing demands. Voltage management on HV networks will look to reduce network losses while conservation voltage reduction (CVR) on the LV networks will look to reduce energy demand. Capacitor banks on the HV network are being utilised to help manage network losses by adjusting the networks power factor. On the LV network, a mix of capacitor banks and controlled meshing of networks will be integrated to flatten the voltage profile and improve energy efficiency. The meshing of LV networks will also aim to release additional network capacity.

1.3 Conservation voltage reduction (CVR)

Electrical equipment made for the European market, including household appliances and lighting, is designed to operate most efficiently in the region of 230 to 220 volts. This equipment can, however, operate adequately at voltages in the region of 200 volts. If power is delivered at voltages higher than these optimum levels, then energy will be consequently wasted. Excess voltage can shorten the useful life of electrical equipment, since the excess energy is dissipated as heat. Therefore optimising network voltages reduces overall energy consumption, improves power quality and extends the life of the customer's equipment. Smart Street proposes to optimise network voltages by using CVR on the LV trial networks.

CVR on a distribution network is defined as a reduction of energy consumption resulting from a decrease in feeder voltage. Smart Street proposes to optimise the voltage by utilising on-load tap changing (OLTC) transformers. These transformers will be able to regulate the voltage along the feeder while maintaining statutory limits. This will allow for the peak load to be reduced, hence reducing the annual energy consumption.

Additionally Smart Street will utilise shunt capacitors on the LV feeders to allow for a voltage boost at the end of the circuit to reduce voltage drop. This will allow for a flatter voltage profile, allowing for the OLTC to tap closer to the lower limit.

1.4 LV network meshing

In addition to the proposed CVR techniques, Smart Street will assess the benefits of meshing LV networks to balance load while releasing network capacity at times of high demand.

Our project partner, Kelvatek, has developed new controllable retrofit vacuum switching devices especially for this project. These devices are to be utilised at the existing distribution boards and in link boxes across the LV trial circuits. The devices will have the capability to be remotely controlled allowing both sensing of feeder flows and reconfiguration of the LV network.

1.5 Smart Street equipment

1.5.1 Kelvatek LV vacuum technology

The Weezap is an LV vacuum circuit breaker that can be fitted directly onto an existing LV fuse board in place of an existing fuse carrier. The device has the ability to open and close the circuit locally or remotely while providing protection against overload and fault conditions. It will have the ability to communicate to the control room via onsite Gateway devices allowing remote monitoring and control.

The Lynx is an LV vacuum switch that is designed to fit directly into existing LV link boxes in place of solid links. The device has the ability to open and close the circuit at the link box either locally or remotely. A Gateway device will again allow remote monitoring and control.

Both devices are able to measure circuit voltage, current, power factor, real power, apparent power, reactive power, frequency, total harmonic distortion (THD), and individual harmonics including magnitude and phase. Data intervals can be configured to calculate the mean values over a range from one minute to one hour.

1.5.2 ABB capacitors

The trials will employ 84 LV capacitors to apply voltage boosts on distribution circuits when required. Five units will be located at distribution substations and the remaining 79 will be installed on the LV feeders in line with the Smart Street network design methodology.

The trials will also employ six capacitors on the HV network to allow for reactive compensation. Three ground-mounted capacitor units and three pole-mounted units will be installed on the HV rings based on network modelling studies. The capacitor banks are designed to have reactors in series to lower the resonance below critical order harmonics. This design tunes the resonant frequency of the system well below the fifth harmonic.

The optimisation software will switch the capacitors directly when communications are available. This will be achieved by sending close/open commands issued by the network management system (NMS). In the event of a loss of communications, the local controller will be able to operate based on the latest assigned set points. In this instance the capacitor unit will be operated based on the voltage measured at the point of connection. This enables safe operation in the event of a communications failure.

1.5.3 Efacec OLTC transformers

Five on-load tap changing transformers are to be installed at distribution substations and will operate via an automatic voltage control relay (AVC). The Spectrum optimisation software will communicate with the AVC and alter the voltage set points to allow the transformer to switch to the optimum tap setting.

1.5.4 Gridkey end-point monitoring units

Monitoring units will be installed at the end of feeders with the highest calculated voltage drop to record circuit measurements for both voltage optimisation purposes and to validate network modelling results during the research phase of the project. They will be solely used to measure voltage.

1.5.5 Siemens Spectrum software

The optimisation software is part of the already available Spectrum Power system developed by Siemens. Spectrum Power 5 (SP5) will manage and control the various devices based on calculated load flow analysis. Spectrum will be responsible for optimising the operation of both the LV and HV networks in terms of voltage optimisation and network configuration.

1.6 Network management and control

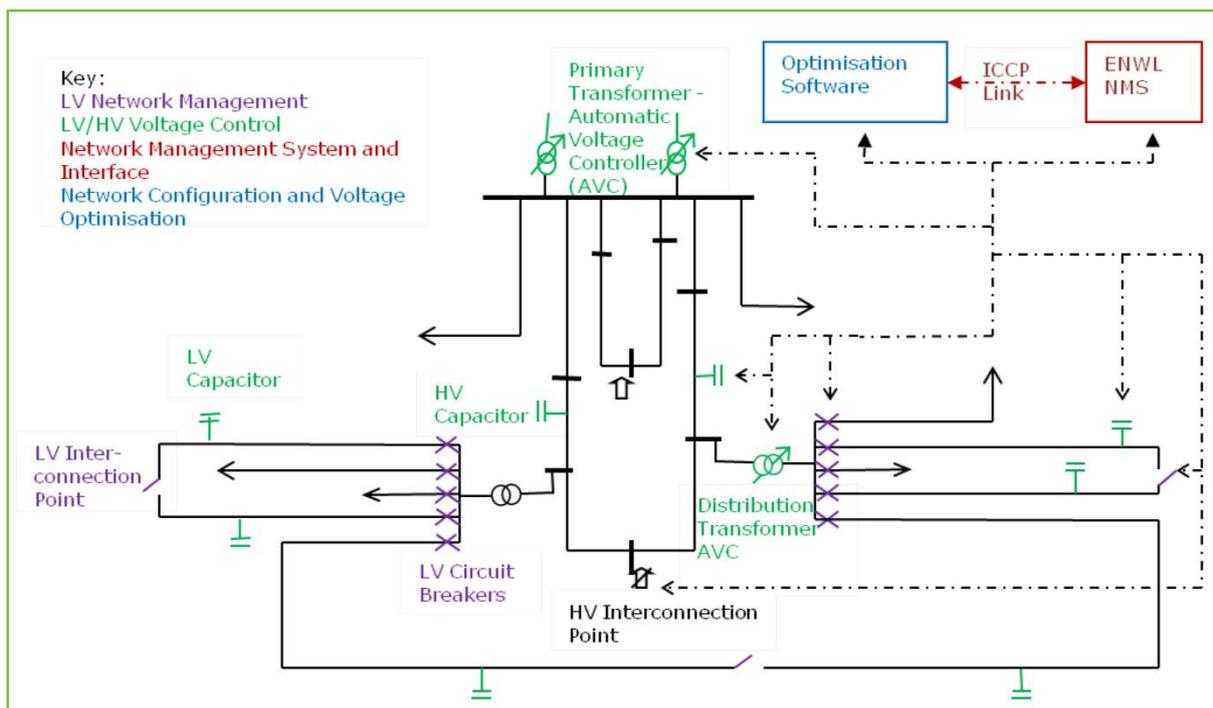
Electricity North West's existing NMS will interface with the optimisation software using an inter control communications protocol (ICCP) link which has been developed specifically for Smart Street. This will allow all network configuration commands to be controlled via the NMS which will be overseen by trained control engineers. This will allow for control staff to react to any violations which will be indicated as an alarm within both Spectrum and the NMS.

1.6.1 Control systems

Figure 1 shows an example of how the various Smart Street technologies will be installed across the trial networks. The optimisation will include the ability to optimise for violations, losses and to minimise load as a single VVC function. The opportunity to mesh the trial networks will also be included in this function, but radial configurations will be the preferred running arrangement. This is specified to minimise customer outages during electrical faults. Therefore the switching equipment shall be closed (create loop or mesh networks) if the objective-function results in positive changes to the network above a set threshold.

The optimisation application calculates the optimal procedures to reach the optimisation objectives, which may be different for HV and LV depending on the chosen function. The user can select if the switching equipment shall be included or inhibited in the optimisation scheme and only specified remote controlled switches will be included in the optimisation.

Figure 1: Smart Street network management



Voltage control commands will be sent directly by Spectrum without the need for input from the NMS. An alarm will, however, be sent to the NMS should any of the operations cause the network to exceed statutory limits. The SP5 algorithms should automatically correct any limit violation instantaneously, but a control engineer will be able to override the optimisation if required.

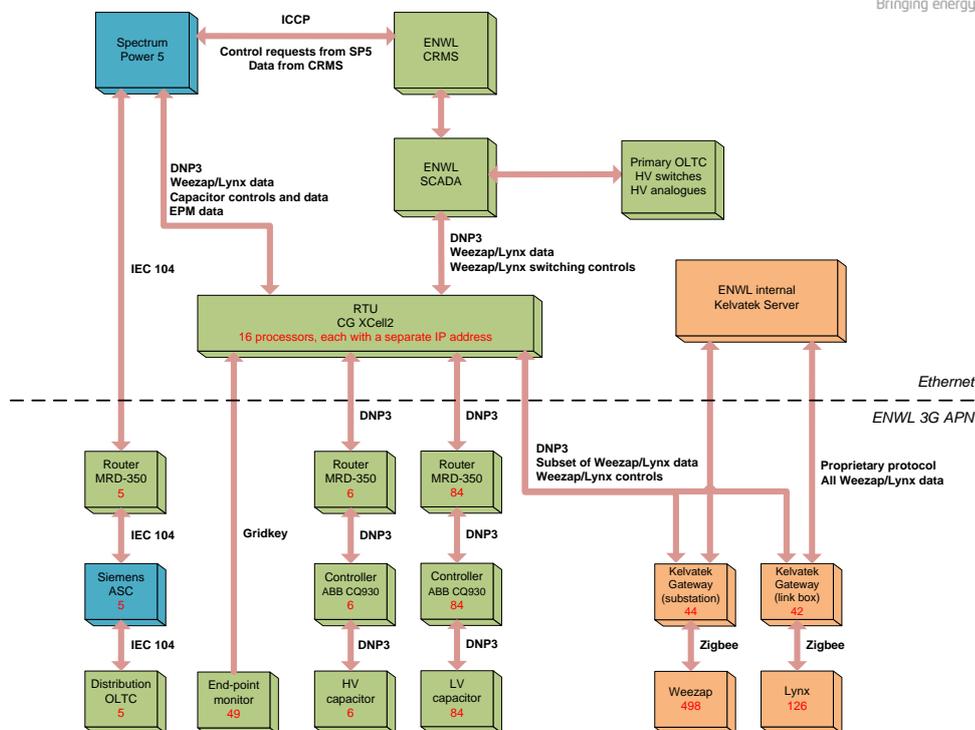
1.6.2 Communications architecture

A selection of network measurements will be directed to Spectrum 5 which will be used in the optimisation process. This data will also be archived to support the research phase of the trials which is being carried out by our academic partners. All data collected by the Weezap and Lynx devices will be archived on Kelvatek's purpose built server.

Figure 2: Communications architecture

Smart Street Connectivity

Version 2.6
Date 15-Sep-2015
Author D Hough



Equipment counts in red. Please treat these as an indication, as they are subject to change throughout the lifetime of the project.

On site both the Weezap and Lynx devices are connected to a gateway via the Zigbee wireless protocol. The Gateways act as both a local control panel for operators and an RTU passing the data onto both the Smart Street Kelvatek Server (via a propriety protocol) and to the sixteen CG RTUs via a DNP3 link. The CG units act as a data concentrator and splitter, passing the information onto both SP5 and the NMS. The data from the HV and LV capacitor banks is sent via an MRD-350 modem to the CG RTUs, while the end-point monitors (EPM) talk directly to the CG units. The five OLTC units communicate directly to SP5, again via an MRD-350 modem. CRMS and SP5 are connected via an ICCP link which allows data on switch states etc to be passed between the two systems. SP5 also uses this link to send requests to operate the Kelvatek devices to CRMS as determined by the optimisation software.

1.7 Overview of the Smart Street test regimes

A summary of the Smart Street trials is shown in Figure 3 below.

Figure 3: List of Smart Street trials

Smart Street trial	Test regime
Trial 1: LV voltage control	T1.1 On-load tap changing distribution transformer only
	T1.2 On-load tap changing distribution transformer and capacitor(s) on LV circuits
	T1.3 Capacitors at distribution substation only
	T1.4 Capacitors at distribution substation and on LV circuits
	T1.5 Capacitor(s) on LV circuits only
Trial 2: LV network management and interconnection	T2.1 LV radial circuits
	T2.2 LV interconnected circuits
Trial 3: HV voltage control	T3.1 Voltage controllers at primary substation only
	T3.2 Voltage controllers at primary substation and capacitors on HV circuits
Trial 4: HV network management and interconnection	T4.1 HV radial circuits
	T4.2 HV interconnected circuits
Trial 5: Network configuration and voltage optimisation	T5.1 Losses reduction
	T5.2 Energy consumption reduction.

The Smart Street trials will take place over a two year period using an off/on test regime which will result in one year's worth of data for both network normal running configurations and for Smart Street operation. This will allow for the two scenarios to be compared and analysed enabling the overall benefits of Smart Street to be calculated.

Trials 1 and 3 will aim to reduce network losses or energy consumption via a combination of CVR and voltage optimisation techniques. The trials will aim to test the voltage control equipment in both isolation and in combination to fully assess the benefits of these techniques. Trials 2 and 4 will aim to compare the benefits of radial and interconnected circuits across the LV and HV trial areas. It is believed that meshing these networks at optimal times will allow for the release of extra network capacity while increasing the power quality of the networks. Finally, Trial 5 will aim to assess the reduction in losses and energy consumption achieved by the optimisation software.

The proposed trial regimes have been designed to apply all of the test criteria highlighted in Figure 1, while allowing for direct comparisons over each trial area at different times of the year. Direct comparisons can also be made to the overall benefit of each technology type installed on Rural, Urban and Dense Urban networks. Please refer to the [Site Selection Methodology](#) for details on how the trial circuits were selected.

2 TRIAL 1: LV VOLTAGE CONTROL

2.1 Why we need to carry out this trial

Smart Street is predominantly utilising the vast amount of its proposed technology across the LV trials networks. It is therefore important that we assess the benefits of each of these technologies individually to understand their full impact on the network.

Trial 1 will look at the LV voltage control techniques that will be optimised by Siemens Spectrum software and will aim to quantify the benefits of LV voltage optimisation. Our academic partners will model the LV trial networks to calculate and quantify the benefits of the Smart Street voltage control techniques. In particular they will carry out analysis and modelling of the trial networks to develop CVR and voltage optimisation models to calculate the expected reduction of losses and demand. The data collected during Trial 1 will be used to validate and improve these LV models which will quantify the CVR and voltage optimisation benefits of Smart Street.

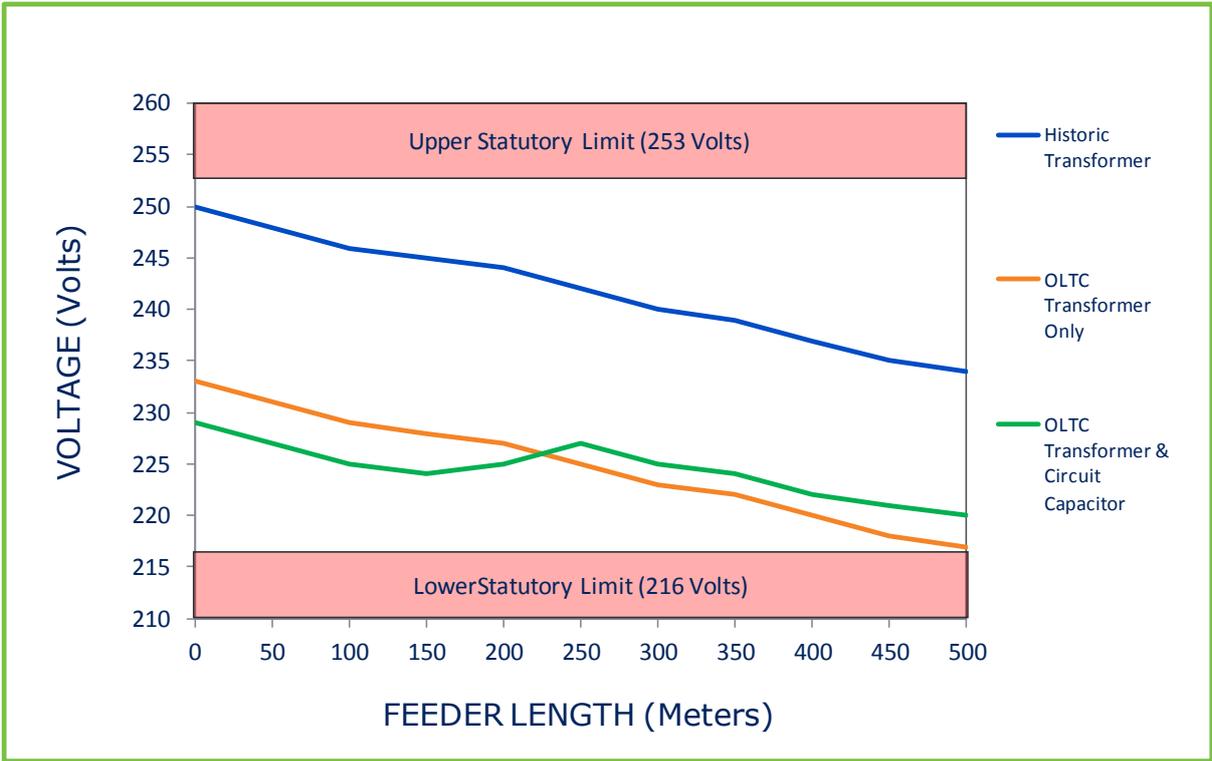
2.2 Trial objectives

The objective of this trial is to collect monitoring data across the LV trial networks that will be used to quantify the benefits of the Smart Street LV voltage control techniques.

2.3 Approach to Trial 1 test regimes

Figure 4 shows the hypothetical voltage profile of a typical network feeder under three different configurations. The historic profile shows an existing network configuration where the transformer tap setting is set at approximately 250 volts at the LV busbars. This is common working practice to allow for a maximum voltage drop scenario at times of maximum demand when using a static transformer. This, however, wastes energy during times of lower demand. The OLTC only profile allows for the tap setting to be matched to the demand and hence reduce the sending voltage while maintaining the voltage profile within statutory limits. The final profile shows the effect of utilising a midpoint circuit capacitor in addition to the OLTC. This third technique allows for a voltage boost at the midpoint, thus allowing for the sending voltage to be lowered further.

Figure 4: Smart Street voltage optimisation technique



Trial 1 will therefore utilise five test regimes to assess the practical benefits of this optimisation technique by accessing the equipment in isolation and in combination with LV capacitors. Each of these scenarios will be compared to the existing circuit running arrangements, ie during the trial 'off' period. A combination of Weezap, Lynx, LV capacitors and end-point monitoring devices will provide network monitoring measurements. These measurements are to be collected during the network configurations described below.

2.3.1 Test regime T1.1 – On-load tap changing distribution transformer only

One OLTC transformer is to be located at each of the five main trial areas (excluding Wigton*). One of the most heavily loaded substations in the area has been selected to gain the best voltage fluctuations for the proposed voltage control techniques. Comparisons of the corresponding circuit's on / off periods will quantify the benefits of the OLTC operation. The OLTC optimisation will be controlled by Spectrum, which will set voltage targets for the transformer taps to switch to. During the week off scenarios, the tap will be locked on the historic tap position.

2.3.2 Test regime T1.2 – On-load tap changing distribution transformer and capacitor(s) on LV circuits

All of the OLTC transformers will have at least two capacitors on the corresponding LV circuits to test the combined benefits of the two technologies. A mix of radial and interconnected capacitors will be installed on OLTC fed circuits to maximum the learning outcomes. Both the OLTCs and LV capacitors will be optimised by Spectrum in real time. The LV capacitors will be inhibited during the technique described in 2.3.1.

2.3.3 Test regime T1.3 – Capacitors at distribution substation only

One capacitor unit is to be located at each of the five main trial areas (excluding Wigton*). Where possible, these capacitors will be installed at spare ways on the LV distribution board. Again, one of the most heavily loaded substations in the area has been selected to gain the best voltage fluctuations for the proposed voltage control techniques. Comparisons of the corresponding circuit's on / off periods will quantify the benefits of the substation capacitors.

2.3.4 Test regime T1.4 – Capacitors at distribution substation and on LV circuits

All of the substation capacitors will have at least two capacitors fitted on the corresponding LV circuits to test the combined benefits. A combination of radial and interconnected capacitors will be installed on these circuits to maximum the learning outcomes. All capacitors will be optimised by Spectrum in real time. The LV capacitors will be inhibited during the technique described in 2.3.3.

2.3.5 Test regime T1.5 – Capacitors on LV circuits only

The remaining trial circuits that are not involved in the previous four voltage control techniques will be available for this final voltage control technique. Capacitors will be installed on these circuits as described in the Smart Street network design methodology. Comparisons of the corresponding circuits for both on and off periods will quantify the benefits of the LV capacitors.

** Test regimes T1.1 to T1.4 will not be applied to the Wigton trial area as all of the necessary equipment will not be available.*

2.4 Summary of Trial 1

Figure 5 shows a summary of the five test regimes incorporated in Trial 1. The proposed test cycle allows for all combinations of equipment to be tested in a four week period including the required off period. This cycle will be repeated over the two year trial to accumulate the necessary data required to analyse the benefits of the Smart Street technology over each season.

Figure 5: Summary of LV voltage control test regimes

Test regime	Substations	Test cycle			
		Week 1	Week 2	Week 3	Week 4
T1.1 – OLTC transformer only	Circular Road Shakespeare Avenue	Trial off period	Trial off period	Trial active	Trial not active
T1.2 – OLTC transformer and LV circuit capacitors	Vauxhall Road Ashbourne Avenue Brynton Road No 8	Trial off period	Trial off period	Trial not active	Trial active
T1.3 – Substation capacitors only	Kennedy Way Fell View Drive Maldon Close	Trial off period	Trial off period	Trial active	Trial Not active
T1.4 – Substation capacitors and LV circuit capacitors	Walmer Road Brynton Road No 70	Trial off period	Trial off period	Trial not active	Trial active
T1.5 – Capacitors on LV circuits only	All remaining substations with capacitors	Trial off period	Trial off period	Trial active	Trial active

Trial off period – All networks are run in their historic radial configurations. Optimisation is switched out, all Smart Street equipment is inhibited, all interconnection is inhibited. OLTC tap positions will be fixed to the historic position.

Trial not active – Optimisation is active, but voltage control equipment related to the specific test regime is inhibited.

Trial active – Optimisation is active and voltage control equipment related to the specific test regime is available for optimisation routine.

3 TRIAL 2: LV NETWORK MANAGEMENT AND INTERCONNECTION

3.1 Why we need to carry out this Trial

Trial 2 will look at the LV network management and interconnection techniques that will be optimised by Siemens Spectrum software and will aim to quantify the benefits of network power quality and the implications on LCT uptake.

The University of Manchester will model the LV trial networks to produce practical rules to determine optimal locations for interconnection. Further rules are to be developed for network operation taking into account the characteristics of the meshed feeders, different penetrations of LCT, and coordination with voltage regulation devices. Queens University Belfast will carry out simulations to quantify the potential impact on a customer's electrical installation of interconnecting LV networks while managing voltages within a tighter band.

3.2 Trial objectives

The objective of this trial is to collect monitoring data across the LV trial networks that will be used to quantify the benefits of the Smart Street network management and interconnection techniques. The data collected will be used to validate and improve the network models used to carry out this analysis.

The learning outcomes will be used to publish the specifications for LV network management and the new interface arrangements required with the optimisation software. A methodology will be developed for interconnecting LV networks, including design considerations, the selection and deployment of voltage regulation equipment and the protection arrangements required for safe interconnected operation.

3.3 Approach to Trial 2 test regimes

Our low voltage distribution networks have historically been designed to operate as passive radial systems with minimal control and simple protection schemes. These configurations have been effective for a number of years due to low running costs and minimal associated maintenance. However, these networks are becoming increasingly unfit for purpose due to the growing uptake of DG and LCTs at a domestic level. Smart Street proposes to facilitate the rapid connection of these devices by releasing network capacity while minimising voltage, thermal and harmonic issues associated with these technologies.

This network management technique will be achieved by meshing the trial networks via controllable switch devices (ie Weezaps and Lynx devices). Spectrum 5 will consider the network configuration during each optimisation run by using both the measured values and the results of the distribution system state estimator. SP5 then produces a set of switching operations and voltage set points to configure the network in the optimum state based on the selected consideration. SP5 can look to optimise the network to minimise violations of operator configured limits, losses or a combination of the two.

Trial 2 will therefore look to compare the benefits of radial and interconnected configurations across the LV trial networks. The network design methodology has allowed for each of the circuit configurations discussed in Trial 1 to be combined with both radial and interconnected scenarios to maximise the learning outcomes. A combination of Weezap, Lynx, LV capacitors and end-point monitoring devices will provide network monitoring measurements. These measurements will be time stamped and archived every time a change in the switch state occurs. The radial and interconnected network configurations described below will be assessed during this trial.

3.3.1 Test regime T2.1 – radial LV circuits

This technique can be carried out on all of the LV trial circuits. Around 60% of these circuits will not have the capability for interconnection, so will run as radials for the duration of the trial period. The remaining circuits will run as either radial or interconnected circuits depending on which scenario is considered the optimal configuration at that specific time. This will be determined by the optimisation algorithms in SP5.

3.3.2 Test regime T2.2 – interconnected LV circuits

This technique can be carried out on all circuits that are fitted with a Lynx device (see appendices for circuit configuration matrices). The Spectrum software will control when the LV circuits will be interconnected based on the results of the optimisation software.

3.4 Summary of Trial 2

The test cycle (shown in Figure 6) was chosen to allow for all possible combinations of LV interconnection in conjunction with Trial 1. This means that over the four week cycle, each of the voltage control techniques in Trial 1 will be tested in both radial and interconnected network configurations. The time at which the networks will be interconnected will be controlled by the optimisation software. Again, the trial off period will allow for comparison between existing and Smart Street network configurations.

Figure 6: Summary of LV network management and interconnection test regimes

Test regime	Test cycle			
	Week 1	Week 2	Week 3	Week 4
T2.1 – Radial LV circuits	Trial off period	Trial off period	Trial active	Trial active
T2.2 – Interconnected LV circuits	Trial off period	Trial off period	Trial active	Trial active

Trial off period – All networks are run in their historic radial configurations. Optimisation is switched out, all Smart Street equipment is inhibited, and all interconnection is inhibited. OLTC tap positions will be fixed to the historic position.

Trial active – Optimisation is active and remote switching points related to the specific test regime are available for optimisation routine.

4 TRIAL 3: HV VOLTAGE CONTROL

4.1 Why we need to carry out this trial

The reactive power consumed by electrical equipment such as transformers, electric motors, and static converters adds unnecessary load to distribution networks. In addition, reactive power can also lead to considerable energy loss through the dissipation of heat. This trial looks at reducing reactive power on the HV trial networks by carrying out power factor correction with the addition of shunt capacitor banks.

The trial will also look to build upon the demand management techniques developed in Electricity North West's Second Tier project, [CLASS](#). These techniques look to manage electricity consumption at peak times by adjusting the primary transformer tap settings to lower the sending voltage. At times of low demand; a voltage boost looks to permit further generation capacity on the network.

The combination of these two techniques will aim to improve energy efficiency by reducing circuit losses and reducing overall power consumption. This trial will therefore look at the HV voltage control techniques that will be optimised by Siemens Spectrum software.

4.2 Trial objectives

The objective of this trial is to collect monitoring data across the HV trial networks that will be used to quantify the benefits of the HV voltage control techniques. Our academic partners will model the HV trial networks to calculate and quantify the benefits of these control techniques. The circuit data will then be used to validate the results of the modelling.

4.3 Approach to Trial 3 test regimes

This trial looks to exploit the natural relationship between voltage and demand to reduce load at times of peak demand. This will be achieved by actively managing peak demand via automatic voltage controllers located at the primary substations. The optimisation software will be able to reduce the primary sending voltage while not adversely affecting customer perceptions of their electricity supply. Conversely, at times of low demand the optimisation will look to increase the sending voltage at the primary to allow for additional capacity for local generation should it be available.

In addition to active demand management, this trial will deploy capacitors on the HV trial circuits which aim to reduce circuit losses. The optimisation routine will decide when to switch these capacitor banks in to minimise reactive power flow.

4.3.1 Test regime T3.1 – Voltage controllers at primary substation

This technique will utilise the existing voltage controllers at the primary substations and will be optimised by SP5. The optimisation routine will aim to increase/decrease the primary sending voltage, while maintaining all circuits within statutory limits. This will be achieved by tapping the primary transformer at times of high/low demand, which will be calculated by the data model in SP5. As this process will need to make sure that all other circuits feed from the primary will stay within statutory limits, the tap control will be initiated via the existing NMS system. These tap commands will therefore have to be approved by a control engineer to ensure existing operational protocol is followed. The HV capacitor banks will be inhibited during this test regime to analyse the voltage controllers in isolation.

4.3.2 Test regime T3.2 – Voltage controllers and capacitor on HV circuits

This technique will utilise the existing voltage controllers in addition to the capacitors located on the HV rings. These capacitors have been installed on the trial networks based on IPSA modelling results produced during the network design phase. The models have identified the optimal size and position of the capacitor banks to adjust the power factor as close to unity as possible during times of peak load. These capacitors will, however, be optimised based on voltage set-points to maintain circuits within statutory limits.

4.4 Summary of Trial 3

The test cycle (shown in Figure 7) was chosen to allow for the two separate HV control techniques to be applied to all combinations of the LV control techniques derived in Trial 1. This means that over the eight week cycle, each of the voltage control techniques in Trial 1 will be tested with the HV capacitors both active and inhibited. This will allow us to fully understand the interaction of the LV and HV voltage control techniques.

Figure 7: Summary of HV voltage control test regimes

Test regime	Test cycle							
	Wk 1	Wk 2	Wk 3	Wk 4	Wk 5	Wk 6	Wk 7	Wk 8
T3.1 – Voltage controllers at primary substation	Trial off period	Trial off period	Trial active	Trial not active	Trial off period	Trial off period	Trial not active	Trial active
T3.2 – voltage controllers and HV capacitors	Trial off period	Trial off period	Trial not active	Trial active	Trial off period	Trial off period	Trial active	Trial not active

Trial off period – All networks are run in their historic radial configurations. Optimisation is switched out, all Smart Street equipment is inhibited, all interconnection is inhibited. The voltage target for the primary transformer will be set to the 'business as usual' setting.

Trial not active – Optimisation is active, but voltage control equipment related to the specific test regime is inhibited.

Trial active – Optimisation is active and voltage control equipment related to the specific test regime is available for optimisation routine.

5 TRIAL 4: HV NETWORK MANAGEMENT AND INTERCONNECTION

5.1 Why we need to carry out this trial

Electricity North West's Second Tier project, 'Capacity to Customers', has shown that interconnecting our HV radial circuits at times of peak demand can reduce circuit losses and release unused network capacity. Smart Street will use this technique by closing normally open points on the HV trial circuits at optimal times. The Smart Street optimisation software will calculate when it is advantageous to open and close the automation points on the HV networks. This trial will look to combine this technique in combination with the previous trials to fully assess the benefits of Smart Street.

5.2 Trial objectives

The objective of this trial is to collect monitoring data across the HV trial networks that will be used to quantify the benefits of the Smart Street network management and interconnection techniques. The data collected during Trial 4 will be used to validate and improve the HV network models that will be used to develop practical rules to determine the most suitable location of voltage control equipment and optimal scenarios for HV interconnection.

5.3 Approach to Trial 4 test regimes

SP5 will continuously monitor the data supplied by the Smart Street devices and run a periodic study to determine the optimal topology for the network based on both the measured values and the results of the DSSE.

These measurements will be time stamped and archived every time that a change in switch state occurs. The network configurations described below will be assessed during this trial.

5.3.1 Test regime T4.1 – radial HV circuits

All HV trial circuits will run in radial configurations throughout the trial off periods as the switching points will be inhibited in SP5. This test scenario will also apply when the optimisation software decides that a closed ring would not be beneficial during trial on periods. This will be dependent on the VVC objective-function results where the calculated positive changes to the network will have to be above a user defined target threshold.

5.3.2 Test regime T4.2 – interconnected HV circuits

Ten of the eleven HV trial circuits will have the ability to interconnect, allowing for the optimisation to control five possible HV rings. The HV circuit out of Wigton Primary will remain in radial operation for the length of the trial period and so will be disregarded for this test. Again, the time at which the HV circuits will be interconnected will depend on the VVC objective-function results.

5.4 Summary of Trial 4

The test cycle (shown in Figure 8) was chosen to allow for all possible combinations of HV interconnection in combination with Trials 1 and 3. This means that over the eight week cycle, each of the voltage control techniques will be tested in both radial and interconnected network configurations. The time at which the networks will be interconnected will be controlled by the optimisation software.

Figure 8: Summary of HV network management and interconnection test regimes

Test regime	Test cycle							
	Wk 1	Wk 2	Wk 3	Wk 4	Wk 5	Wk 6	Wk 7	Wk 8
4.1 – Radial HV circuits	Trial off period	Trial off period	Trial active	Trial active	Trial off period	Trial off period	Trial active	Trial active
4.2 – Interconnected HV circuits	Trial off period	Trial off period	Trial active	Trial active	Trial off period	Trial off period	Trial active	Trial active

Trial off period – All networks are run in their historic radial configurations. Optimisation is switched out, all Smart Street equipment is inhibited, and all interconnection is inhibited. The voltage target for the primary transformer will be set to the 'business as usual' setting.

Trial active – Optimisation is active and remote switching points related to the specific test regime are available for optimisation routine.

6 TRIAL 5: NETWORK CONFIGURATION AND VOLTAGE OPTIMISATION

6.1 Why we need to carry out this trial

At the core of Smart Street is the ability to simultaneously optimise network configurations and voltage profiles in real time. This will enable utilities and consumers to save energy and lower operating costs by reducing the need to generate additional energy. As a consequence it will also help to lower greenhouse gas emissions to enable a greener network.

Siemens Spectrum 5 optimisation software will aim to optimise both interconnected configurations and voltage profiles across HV and LV networks. This final trial will aim to assess the reduction in losses and energy consumption achieved by the optimisation software.

6.2 Trial objectives

The objective of this trial is to utilise all of the data collected in the previous four trials to calculate the overall reduction in losses and energy consumption when comparing the Smart Street network with the historical network. The trial will also look to quantify any potential trade-off in performance that may exist between reducing losses on the HV network and the implementation of CVR on the LV network. The learning outcomes will be used to publish the specifications, settings and configuration parameters required to optimise the operation of the distribution networks.

6.3 Approach to Trial 5 test regimes

The Volt/VAr Control (VVC) application available on Spectrum Power is able to determine control actions of OLTC transformers, shunt capacitor banks and remote-controllable switches to optimise the network for a chosen function. The specific user defined functions that are available are:

- Minimise limit violations
- Minimise power losses and limit violations
- Minimise active power consumption (power demand) and limit violations
- Minimise reactive power consumption and limit violations
- Maximise power revenue and minimise limit violations
- Minimise violations and power losses (HV) and active power consumption (LV)

The VVC optimisation consists of three basic components: A set of variables, an objective function to be optimised (minimise or maximise) and a set of constraints that specify the feasible values of the variables. The aim of the optimisation routine is to find the total objective function extreme, while satisfying all constraints. These constraints include power flow equations and operational voltage limits. The VVC therefore provides a centralised coordinated control of the network regulating controllers and provides the following modes of operation.

- Open loop – The optimal setting/switching orders calculated from VVC are not automatically executed, but available for review in the user interface.
- Closed loop – The optimal setting/switching orders calculated from VVC are immediately executed after VVC calculation.

For the Smart Street trials it has been decided to run the VVC in 30 minute closed loop cycles. All VVC commands to OLTC transformers will be sent as voltage set-points while all commands to capacitor banks will be in the form of open/close instructions due to the capacitor control interface.

6.3.1 Test regime T5.1 – losses reduction

Loss reduction optimisation will be applied to all HV circuits and all LV circuits that are not capable of CVR (ie substations that are not feed by OLTCs and substation capacitors). The optimisation will be applied to these circuits during the trial on periods, but the equipment that can be controlled by SP5 will vary depending on the test cycles of the other four trials. The VVC will aim to minimise the sum of power losses in lines, transformers and capacitors on these trial networks.

6.3.2 Test regime T5.2 – energy consumption reduction

Energy consumption reduction will be applied at the ten LV substations that are capable of CVR. (ie substations that are feed by OLTCs and substation capacitors). Again, the optimisation will be applied during the trial on periods, but the test cycles of the other four trials will decide what equipment will be available. The VVC will aim to minimise the sum of the power losses and the customer demand on these trial networks.

6.4 Summary of Trial 5

Figure 9: Summary of network configuration and voltage optimisation test regimes

	Trial 1	Trial 2	Trial 3	Trial 4
Week 1	Off	Off	Off	Off
Week 2	Off	Off	Off	Off
Week 3	T1.1 / T1.3 / T1.5	On	T3.1	On
Week 4	T1.2 / T1.4 / T1.5	On	T3.2	On
Week 5	Off	Off	Off	Off
Week 6	Off	Off	Off	Off
Week 7	T1.1 / T1.3 / T1.5	On	T3.2	On
Week 8	T1.2 / T1.4 / T1.5	On	T3.1	On

Figure 9 highlights the eight week cycle of all the previous trial combinations. Over this eight week cycle one week will be dedicated to allowing for full optimisation (week 4 highlighted in yellow). This will allow for the full optimisation scenario to run over each season while testing all technologies in isolation. It has also been proposed to run the full optimisation scenario for two weeks in the summer and two weeks in the winter. This is to maximise the data collected on the full Smart Street optimisation method. The full test regime can be found in the appendices.

7 DESIGN CONSIDERATIONS

7.1 Additional data requirements

- Oil samples will be taken from the five OLTC transformers every six months to evaluate the rate of degradation to the transformers due to constant tapping operations. The oil will undergo the standard dissolved gas analysis (DGA) to test for chemical indicators of both wear and developing faults.
- In order to assess the carbon impact of the Smart Street methodology it has also be necessary to data on any alterations to the network specifically for the project. This will primarily require the as laid drawings for any asset replacements needed.
- The data will be extracted from the SP5 historian system in a .csv format on a monthly basis and transferred to the universities via Electricity North West's secure Globalscape file transfer system. This file will contain the analogues received from each device as well as the network topology at the time. In addition the Kelvatek server stores data from the Weezap and Lynx devices which can be used as a back up should the SP5 data become unavailable at any point during the trials.
- By utilising the Kelvatek Weezap devices a benefit to the company's performance under the interruption incentives scheme is envisaged. The benefits of this technology are likely to come from three areas. Firstly the auto-reclosing ability of the devices is expected to reduce the interruption time for transient faults, and should in fact mean that many customers are restored within the three minute threshold thus not becoming liable for the accrual of customer interruptions (CIs) and customer minutes lost (CMLs). Secondly Kelvatek offer a fault location service based on the data received from these devices which should allow for developing faults to be located and repaired in working hours before they become permanent. This will benefit the business in that the repair will be carried out in working hours reducing the staffing costs. In addition the total interruption time to customers for the repair will be shorter than if we had to wait for the fault to develop naturally. Finally as the Smart Street devices are linked into the Electricity North West's CRMS then we will be alerted instantly to a trip, with indication as to the exact substation, way and phase that has faulted. This will allow us to dispatch sooner and to the right location rather than trying to narrow down the faulty circuit based on customer calls. Points one and two are currently analysed as part of our business as usual Fault Support Centre (FSC) and any statistic relating to the Smart Street circuits will be separated out. The third point will be assessed through the project trial period; however it may be that the benefits from the earlier dispatch time are negated by the earlier incident start time.

7.2 Operational considerations

- It is planned to leave the tap position as system normal for the first three months of the trials at sites that incorporate both OLTCs and HV capacitors. This will allow for sufficient data to be collected to allow a lower tap position to be selected which will allow the capacitors to operate during the trial on periods without causing issues with low volts in the off periods.
- The use of the SP5 optimisation functionality during both planned and unplanned (fault) switching on the network is covered by Electricity North West code of practice (COP). This will require the optimisation to be disabled during any activities on the trial circuits. Disabling of the optimisation functionality will cause all devices to return to their system normal state.

8 FINAL SUMMARY

The Smart Street test regimes have been designed to allow for monthly comparisons of each trial technique over the two year trial period. 52 weeks of the 'trial off' period will provide baseline data, while 52 weeks of 'trial on' data will look to compare the various Smart Street technologies. The 'trial on' period will consist of:

- 24 weeks of data for all LV voltage control equipment in isolation
- 28 weeks of data for LV voltage control equipment in combination.
- 28 weeks of possible HV capacitor data (depending on optimisation results).
- 52 weeks of possible LV and HV interconnection (depending on optimisation results).
- 16 weeks of full optimisation data, spread over all seasons.

The trials will maximise learning on circuits fitted with OLTCs and substation capacitors which are capable of CVR due to the limited number of test circuits available.

The Smart Street trial design and the associated test schedule will be re-evaluated after every three months once the trials commence in December 2015. This will ensure that the data collected is fit for purpose and that all the Smart Street hypotheses are met in a timely fashion. Our academic partners will analyse the research data and make suggestions for possible changes to the test schedule to maximise the learning.

This document should therefore be considered as a 'living document', as it will be updated with any lessons learnt as the series of trials progress. Throughout the trial findings will be collated in more detail and communicated to all interested stakeholders via a range of knowledge dissemination routes including conferences, closedown reports and additional white papers. All key documents and any other relevant information related to the trials will be placed on the [Smart Street website](#)

9 APPENDICES

9.1 Denton East equipment matrix

	DISTRIBUTION SUBSTATION	WAY NUMBER	CIRCUIT NUMBER	CIRCUIT NAME	OLTC	SUBSTATION CAPACITOR	CIRCUIT CAPACITOR	INTER CONNECTION	END POINT MONITORING	LYNX MONITORING	
D E N T O N E A S T	CIRCULAR ROAD	4	1.1.4	LB X125 - Stockport Rd No.350 S/Stn	*						
		5	1.1.5	LB X6076 Foxdenton Walk			*	*		*	
		6	1.1.6	Birthfield Walk			*		*		
	HODNET WALK	1	1.2.1	Essington Walk			*		*		
		3	1.2.3	LB X6076 - Circular Rd S/Stn				*		*	
	KENNEDY WAY	2	1.3.2	Bottle End / 200kVAr Cap		*					
		3	1.3.3	Millbrook Ave & Ruskin Ave S/S			*	*		*	
		4	1.3.4	Warren Close to Ruskin Ave S/S			*	*		*	
		5	1.3.5	Tomcroft Lane to X851			*		*		
	SCOTT ROAD	2	1.4.2	Scott Rd Nearside							
		3	1.4.3	Stockport Rd Nearside to x865 & Stockport Rd Farside			*		*		
		4	1.4.4	Wakeling Rd Farside to X866			*	*	*	*	
		5	1.4.5	Wakeling Rd Nearside to X866			*	*	*	*	
	TOWN LANE (NO 52)	2	1.5.2	Town Lane to X643			*	*		*	
		3	1.5.3	Town Lane to X471 - Town Ln S/Stn			*		*		
		4	1.5.4	Acre St Near Side to Birch Grove S/S						*	
		5	1.5.5	Longmeadow Grove							
	VICTORIA STREET (DENTON)	1	1.6.1	Victoria St x232							
		3	1.6.3	Victoria St x132				*		*	
	PENDLE ROAD	3	1.7.3	Pendle to Smith Street - LB X8783			*	*		*	
4		1.7.4	Pendle Rd to Stockport rd X952 - Mount Pleasant S/Stn				*		*		

9.2 Egremont equipment matrix

	DISTRIBUTION SUBSTATION	WAY NUMBER	CIRCUIT NUMBER	CIRCUIT NAME	OLTC	SUBSTATION CAPACITOR	CIRCUIT CAPACITOR	INTER CONNECTION	END POINT MONITORING	LYNX MONITORING
E G R E M O N T	ELECTRIC HOUSE	2	2.1.2	Jordan Engineering						
		3	2.1.3	North Rd			*	*	*	*
		4	2.1.4	Windrigg Cl						
		5	2.1.5	Main St West						
		6	2.1.6	Main St East			*			*
	FELL VIEW DRIVE	2	2.2.2	Fell View Dr/ Queensgate		*	*			*
		3	2.2.3	Bookwell LB111				*		*
		4	2.2.4	Hagget end LB110			*		*	
		5	2.2.5	Greendykes/Dale View Gardens			*	*	*	*
	SMITHFIELD	2	2.3.2	Greenmoor Rd LB105						
		3	2.3.3	Copeland Ave Lb104				*		*
		4	2.3.4	Smithfield Rd / Howbank Rd				*	*	*
		5	2.3.5	Howbank Rd / Beach Ln			*	*	*	*
		6	2.3.6	Gillfoot Rd West				*	*	*
		7	2.3.7	Howbank Rd West			*	*	*	*
		8	2.3.8	The Crescent			*	*	*	*
	CROFT TERRACE	2	2.4.2	South St LB113			*			*
		3	2.4.3	Beck Green LB116			*		*	
		4	2.4.4	Cross Side						
	DRYDENWAY	2	2.5.2	Chaucer Ave			*		*	
		3	2.5.3	Milton Place						
		4	2.5.4	Keats Drive / Spencer Close to LB108			*	*	*	*
		5	2.5.5	Croadalla Ave / Coleridge Drive to LB107			*	*	*	*
		6	2.5.6	Dryden Way to Castlecroft			*			*
	SHAKESPEARE AVEUNE	7	2.5.7	Infants School						
		2	2.6.2	Shakespeare Ave Interconnector Castle Croft SS		*	*	*	*	*
		3	2.6.3	Tennyson Dr /Shakespeare ave/ Croadella to LB107			*	*	*	*
		4	2.6.4	Southey Dr / Tennyson Dr to LB 108			*	*	*	*
		5	2.6.5	Southey Dr/Southey Walk/Orgill Junior School to LB			*			*
		6	2.6.6	Wordsworth Cl / Goldsmith Rd						
		7	2.6.7	Shakespeare Ave/Wordsworth CL/Broadfield HSE/LB138			*		*	*
	BRIDGE END IND EST	2	2.7.2	Industrial Est South						
3		2.7.3	Industrial Est North			*		*	*	
4		2.7.4	Cringlewaithe SS							

9.3 Green Street equipment matrix

	DISTRIBUTION SUBSTATION	WAY NUMBER	CIRCUIT NUMBER	CIRCUIT NAME	OLTC	SUBSTATION CAPACITOR	CIRCUIT CAPACITOR	INTER CONNECTION	END POINT MONITORING	LYNX MONITORING
GREEN STREET	CAMBERWELL CRESCENT	2	3.1.2	Nearside Camberwell Crescent North			*		*	
		3	3.1.3	Farside Camberwell Crescent North & Link Box 502			*		*	
		4	3.1.4	Farside Camberwell Crescent South & Link Box 499				*		*
		5	3.1.5	Nearside Camberwell Crescent South						
	CAUNCE ROAD	1	3.2.1	Stanley Place towards Platt Ln			*		*	
		2	3.2.2	LB480 and Quarry Place						
		4	3.2.4	Wells Place			*	*		*
		5	3.2.5	Knowles Place						
	LINNEY STREET	2	3.3.2	Linney Square				*		*
		3	3.3.3	Caunce Rd towards Isabella Square			*		*	
		4	3.3.4	Linney St						
		5	3.3.5	LB456263 Schofield Ln				*		*
		7	3.3.7	Lorne St			*		*	*
	MALDON CLOSE	2	3.4.2	Link Box Shildon Close				*	*	*
		3	3.4.3	Link Box Wilston Ave			*		*	
		4	3.4.4	Link Box Camberwell Cres			*	*		*
		5	3.4.5	Link Box Bamford Dr			*	*		*
		6	3.4.6	New School						
	MOAT HOUSE STREET	2	3.5.2	LB535 Manchester Rd			*		*	
		4	3.5.4	Dobson Park Way						
	PETTICOAT LANE	2	3.6.2	Thirlmere Ave			*		*	
		3	3.6.3	Link Box 528 Windermere Rd			*	*		*
		4	3.6.4	Link Box 536 Kendal Rd			*			*
		5	3.6.5	Coniston Ave/Derwent Ave				*		*
		6	3.6.6	Haweswater Ave						
	VAUXHALL ROAD	2	3.7.2	Hackworth Cl (RR30) S/Stn			*	*		*
		3	3.7.3	Shopping Precinct						
		4	3.7.4	Shopping Precinct	*					
5		3.7.5	School							
		6	3.7.6	Vauxhall Rd			*	*		

9.4 Hindley Green equipment matrix

	DISTRIBUTION SUBSTATION	WAY NUMBER	CIRCUIT NUMBER	CIRCUIT NAME	OLTC	SUBSTATION CAPACITOR	CIRCUIT CAPACITOR	INTER CONNECTION	END POINT MONITORING	LYNX MONITORING
H I N D L E Y G R E E N	ASHBOURNE AVENUE	2	4.1.2	Claremont Ave (LB 581)	*		*		*	
		4	4.1.4	Nearside Lancaster Rd to LB599 // Hollins Ln S/Stn			*	*	*	
		5	4.1.5	Farside Lancaster Rd to LB598 // Walmer Rd S/Stn				*	*	
		6	4.1.6	Farside Ashbourne Ave to LB576A // Borsdane Ave S/Stn				*	*	
		7	4.1.7	Nearside Ashbourne Ave to LBx7474 // LCC School Hindley S/S						
	BORSDANE AVENUE	2	4.2.2	To LB576A // Ashbourn Ave S/Stn				*		*
		3	4.2.3	Far Side Borsdane Ave						
		4	4.2.4	Borsdane Ave LB576		*	*	*	*	*
		5	4.2.5	Unit 1 + L/L						
	BRIDGEWATER STREET	1	4.3.1	Lancaster Rd (5c .1)			*	*		*
		2	4.3.2	Lancaster Rd / Lincoln Rd / New Flats Opp S/S				*		*
		3	4.3.3	Lancaster Rd to Bridge St & Bridgewater St (LB565/LB563)				*		*
		6	4.3.6	BridgeWater St Both Sides North (LB570)		*	*	*	*	*
		7	4.3.7	Castle Hill Rd Nearside to LB570			*	*		*
		8	4.3.8	Castle Hill Rd Farside to LB565		*	*	*	*	*
	CASTLE HILL	9	4.3.9	Bell St to Gloucester Cres (LB572)				*		*
		2	4.4.2	Hindley Mill Lane (LB584)						
		3	4.4.3	Castle Hill to LB 570 (B)				*		*
		4	4.4.4	Gloucester Cres to LB572		*				*
		5	4.4.5	Sandy Lane to LB577		*	*			*
		6	4.4.6	Castle Hill South to LB570 (D)		*	*			*
		7	4.4.7	Castle Hill North to LB585						
	GIDLOW STREET	1	4.5.1	Oldbridge Dr/Prodesse Ct			*		*	
		2	4.5.2	Ladies Lane Evens South X7150			*		*	
		3	4.5.3	Margret St/Deansgate			*		*	
		4	4.5.4	Ladies Lane Evens North Lb551						
		5	4.5.5	Ladies Ln LB550 & Lb 553						
	GLOUCESTER CRESCENT	2	4.6.2	Smithwood Ave & Dodhurst Rd			*		*	
		3	4.6.3	Sandy Lane to LB577 // Castle Hill S/Stn				*		*
		4	4.6.4	Sandy Lane towards Long Lane			*		*	
		5	4.6.5	Gloucester Cres To LB572 // Bridgewater St S/Stn			*	*	*	*
		6	4.6.6	Worcester Ave						
VICARAGE	1	4.7.1	Farside Atherton Rd to LB561A // Dickenson St S/Stn			*				
	2	4.7.2	Farside Atherton Rd to LB556 // Grosvenor St Hindley S/Stn			*			*	
	3	4.7.3	Nearside Atherton Rd towards Wenlock Street, Road & Grove							
	4	4.7.4	Nearside Atherton Rd // Dickenson St S/Stn			*		*		
	5	4.7.5	Nearside Atherton Rd to George St							
	6	4.7.6	Nearside Atherton Rd to LB549 // Armistead St S/Stn							
	7	4.7.7	Nearside Park Rd (Odd No's)							
	8	4.7.8	Farside Park Rd (Even No's)							
VICTORIA FARM	2	4.8.2	Nearside Atherton Rd Tee & Ashfield Ave							
	3	4.8.3	Farside Atherton Rd towards Atherton (Cinnamon Avenue)			*		*		
	4	4.8.4	Farside Atherton Rd to LB562 // Dickenson St S/Stn							
	5	4.8.5	Kenilworth Dr to LB564 & LB563A			*		*		
	6	4.8.6	Askwith Rd To LB 456338			*		*		
WALMER ROAD	4	4.9.4	Bedford Gardens / Norfolk Close			*		*		
	7	4.9.7	LB598 Broadway		*	*	*	*	*	
	8	4.9.8	Brookdale Rd			*		*		
	9	4.9.9	Belmont Rd to LB580 // Leicester Ave S/Stn							

9.5 Longsight equipment matrix

	DISTRIBUTION SUBSTATION	WAY NUMBER	CIRCUIT NUMBER	CIRCUIT NAME	OLTC	SUBSTATION CAPACITOR	CIRCUIT CAPACITOR	INTER CONNECTION	END POINT MONITORING	LYNX MONITORING
LONGSIGHT	BIRCH LANE NURSING HOME	3	5.1.3	Nursing Home						
		4	5.1.4	Grenville St			*	*	*	*
	BRYNTON ROAD (NO 70)	2	5.2.2	Brynton Rd to X755		*	*	*	*	*
		3	5.2.3	Brynton Rd X48		*	*	*	*	*
		4	5.2.4	Birchfields Rd X705			*	*	*	*
		5	5.2.5	Bottle End / 200kVAr Cap						
	BRYNTON ROAD (NO 8)	3	5.3.3	Brynton Rd North to X850	*		*	*	*	*
		4	5.3.4	X705 Birchfields Rd			*	*	*	*
		5	5.3.5	Copthorne Crescent North						
	DALTON ELLIS HALL ANSON ROAD	6	5.3.6	Brynton Rd (New Link Box)			*	*	*	*
		2	5.4.2	Farside Anson Rd			*	*	*	*
		4	5.4.3	Delta Box						
	GREVILLE STREET	5	5.4.4	Walton Hall						
		2	5.5.2	Longford Place			*	*	*	*
		3	5.5.3	Tagore Close Nearside			*	*	*	*
		4	5.5.4	Tagore Close Farside & X6123				*	*	*
			5	5.5.5	Greton Close Nearside					
			6	5.5.6	Greton Close Farside					

9.6 Wigton equipment matrix

	DISTRIBUTION SUBSTATION	WAY NUMBER	CIRCUIT NUMBER	CIRCUIT NAME	OLTC	SUBSTATION CAPACITOR	CIRCUIT CAPACITOR	INTER CONNECTION	END POINT MONITORING	LYNX MONITORING
WIGTON	WESTERN BANK	2	6.1.2	Green Acres LB R398			*	*	*	*
		3	6.1.3	Green Acres 6-18A, 18-36 61-67						
		4	6.1.4	Green Acres 17-59 AND 82-92						
		5	6.1.5	Longhead Farm						
		6	6.1.6	LB Wampool Place				*	*	*
	WIZA CRESCENT	2	6.2.2	Burnside Farside				*	*	*
		3	6.2.3	WaverLn/Burnside Nearside			*	*	*	*
		4	6.2.4	Park Rd Via Waver Ln			*	*	*	*
		5	6.2.5	Waver Ln/Wiza Ava/Throstle Ave				*	*	*
		6	6.2.6	LB R263 Throstle Ave direct				*	*	*
	EDEN CLOSE	3	6.3.3	Industrial estate						
		5	6.3.5	Box Wampool Place			*	*	*	*
		6	6.3.6	Ellen Close						
		7	6.3.7	Wasdale and Langdale			*	*	*	

9.7 Test regime: Week 1 – Week 12

DISTRIBUTION SUBSTATION	CIRCUIT NUMBER	CIRCUIT NAME	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 12				
			01/02/16	08/02/16	02/02/16	09/02/16	16/02/16	23/02/16	01/03/16	08/03/16	15/03/16	22/03/16	29/03/16	05/04/16				
DENTON EAST	CIRCULAR ROAD	1.1.4	LB X125 - Stockport Rd No.350 S/Stn	OFF	OFF	OFF	OFF	OFF	OFF	T1.1	T1.2	OFF	OFF	T1.1	T1.2			
		1.1.5	LB X6076 Foxdenton Walk	OFF	OFF	OFF	OFF	OFF	OFF	T1.1	T2.2	T1.2	T2.2	OFF	OFF	T1.1	T2.2	
	HODNET WALK	1.1.6	Birthfield Walk	OFF	OFF	OFF	OFF	OFF	OFF	T1.1	T1.2	OFF	OFF	OFF	T1.1	T1.2		
		1.2.1	Essington Walk	OFF	OFF	OFF	OFF	OFF	OFF	T1.5	T1.5	OFF	OFF	OFF	T1.5	T1.5		
	KENNEDY WAY	1.2.3	LB X6076 - Circular Rd S/Stn	OFF	OFF	OFF	OFF	OFF	OFF	T2.2		OFF	OFF	OFF	T2.2			
		1.3.2	Bottle End / 200kVA Cap	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF		
		1.3.3	Millbrook Ave & Ruskin Ave S/S	OFF	OFF	OFF	OFF	OFF	OFF	T1.3	T2.2	T1.4	T2.2	OFF	OFF	T1.3	T2.2	
		1.3.4	Warren Close to Ruskin Ave S/S	OFF	OFF	OFF	OFF	OFF	OFF	T1.3	T2.2	T1.4	T2.2	OFF	OFF	T1.3	T2.2	
	SCOTT ROAD	1.3.5	Tomcroft Lane to X851	OFF	OFF	OFF	OFF	OFF	OFF	T1.3	T1.4			OFF	OFF	T1.3	T1.4	
		1.4.2	Scott Rd Nearside	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	
		1.4.3	Stockport Rd Nearside to x865 & Stockport Rd Farside	OFF	OFF	OFF	OFF	OFF	OFF	T1.5	T1.5	OFF	OFF	OFF	OFF	T1.5	T1.5	
		1.4.4	Wakeling Rd Farside to X866	OFF	OFF	OFF	OFF	OFF	OFF	T1.5	T2.2	T1.5	T2.2	OFF	OFF	T1.5	T2.2	
	TOWN LANE (NO 52)	1.4.5	Wakeling Rd Nearside to X866	OFF	OFF	OFF	OFF	OFF	OFF	T2.2		T2.2	OFF	OFF	OFF	T2.2		
		1.5.2	Town Lane to X643	OFF	OFF	OFF	OFF	OFF	OFF	T1.5	T2.2	T1.5	T2.2	OFF	OFF	T1.5	T2.2	
1.5.3		Town Lane to X471 - Town Ln S/Stn	OFF	OFF	OFF	OFF	OFF	OFF	T1.5	T1.5	OFF	OFF	OFF	OFF	T1.5	T1.5		
1.5.4		Acre St Near Side to Birch Grove S/S	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF		
VICTORIA STREET (DENTON)	1.5.5	Longmeadow Grove	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF			
	1.6.1	Victoria St x232	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF			
PENDLE ROAD	1.6.3	Victoria St x132	OFF	OFF	OFF	OFF	OFF	OFF	OFF	T2.2		OFF	OFF	T2.2				
	1.7.3	Pendle to Smith Street - LB X8783	OFF	OFF	OFF	OFF	OFF	OFF	T1.5	T2.2	T1.5	T2.2	OFF	OFF	T1.5	T2.2		
	1.7.4	Pendle Rd to Stockport rd X952 - Mount Pleasant S/Stn	OFF	OFF	OFF	OFF	OFF	OFF	OFF	T2.2	T2.2	OFF	OFF	OFF	T2.2	T2.2		
GERMONT	ELECTRIC HOUSE	2.1.2	Jordan Engineering	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF			
		2.1.3	North Rd	OFF	OFF	OFF	OFF	OFF	OFF	T1.5	T2.2	T1.5	T2.2	OFF	OFF	T1.5	T2.2	
		2.1.4	Windrigg Cl	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	
		2.1.5	Main St West	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	
	FELL VIEW DRIVE	2.1.6	Main St East	OFF	OFF	OFF	OFF	OFF	OFF	T1.5		T1.5		OFF	OFF	T1.5		
		2.2.2	Fell View Dr/ Queensgate	OFF	OFF	OFF	OFF	OFF	OFF	T1.3	T1.4			OFF	OFF	T1.3	T1.4	
		2.2.3	Bookwell LB111	OFF	OFF	OFF	OFF	OFF	OFF	T1.3	T2.2	T1.4	T2.2	OFF	OFF	T1.3	T2.2	
		2.2.4	Hagget end LB110	OFF	OFF	OFF	OFF	OFF	OFF	T1.3	T1.4			OFF	OFF	T1.3	T1.4	
	SMITHFIELD	2.2.5	Greendykes/Dale View Gardens	OFF	OFF	OFF	OFF	OFF	OFF	T1.3	T2.2	T1.4	T2.2	OFF	OFF	T1.3	T2.2	
		2.3.2	Greenmoor Rd LB105	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	
		2.3.3	Copeland Ave LB104	OFF	OFF	OFF	OFF	OFF	OFF	T2.2		T2.2	OFF	OFF	OFF	T2.2		
		2.3.4	Smithfield Rd / Howbank Rd	OFF	OFF	OFF	OFF	OFF	OFF	T2.2		T2.2	OFF	OFF	OFF	T2.2		
	CROFT TERRACE	2.3.5	Howbank Rd / Beach Ln	OFF	OFF	OFF	OFF	OFF	OFF	T1.5	T2.2	T1.5	T2.2	OFF	OFF	T1.5	T2.2	
		2.3.6	Gillfoot Rd West	OFF	OFF	OFF	OFF	OFF	OFF	T1.5	T2.2	T1.5	T2.2	OFF	OFF	T1.5	T2.2	
		2.3.7	Howbank Rd West	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	
		2.3.8	The Crescent	OFF	OFF	OFF	OFF	OFF	OFF	T1.5	T2.2	T1.5	T2.2	OFF	OFF	T1.5	T2.2	
	DRYDENWAY	2.4.2	South St LB113	OFF	OFF	OFF	OFF	OFF	OFF	T1.5	T1.5	OFF	OFF	OFF	OFF	T1.5	T1.5	
		2.4.3	Beck Green LB116	OFF	OFF	OFF	OFF	OFF	OFF	T1.5	T1.5	OFF	OFF	OFF	OFF	T1.5	T1.5	
	SHAKESPEARE AVEUNE	2.4.4	Cross Side	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	
		2.5.2	Chaucer Ave	OFF	OFF	OFF	OFF	OFF	OFF	T1.5	T1.5	OFF	OFF	OFF	OFF	T1.5	T1.5	
		2.5.3	Milton Place	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	
		2.5.4	Keats Drive / Spencer Close to LB108	OFF	OFF	OFF	OFF	OFF	OFF	T1.5	T2.2	T1.5	T2.2	OFF	OFF	T1.5	T2.2	
	SHAKESPEARE AVEUNE	2.5.5	Croadalla Ave / Coleridge Drive to LB107	OFF	OFF	OFF	OFF	OFF	OFF	T2.2		T2.2	OFF	OFF	OFF	T2.2		
		2.5.6	Dryden Way to Castlecroft	OFF	OFF	OFF	OFF	OFF	OFF	T1.5		T1.5		OFF	OFF	T1.5		
		2.5.7	Infants School	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	
		2.6.2	Shakespeare Ave Interconnector Castle Croft SS	OFF	OFF	OFF	OFF	OFF	OFF	T1.1		T1.2		OFF	OFF	T1.1		
	BRIDGE END IND EST	2.6.3	Tennyson Dr /Shakespeare ave/ Croadella to LB107	OFF	OFF	OFF	OFF	OFF	OFF	T1.1	T2.2	T1.2	T2.2	OFF	OFF	T1.1	T2.2	
		2.6.4	Southey Dr / Tennyson Dr to LB 108	OFF	OFF	OFF	OFF	OFF	OFF	T1.1	T2.2	T1.2	T2.2	OFF	OFF	T1.1	T2.2	
		2.6.5	Southey Dr/Southey Walk/Orgill Junior School to LB	OFF	OFF	OFF	OFF	OFF	OFF	T1.1	T1.2			OFF	OFF	T1.1	T1.2	
		2.6.6	Wordsworth Cl / Goldsmith Rd	OFF	OFF	OFF	OFF	OFF	OFF	T1.1	T1.2			OFF	OFF	T1.1	T1.2	
	CAMBERWELL CRESCENT	2.6.7	Shakespeare Ave/Wordsworth CL/Broadfield HSE/LB138	OFF	OFF	OFF	OFF	OFF	OFF	T1.1	T1.2			OFF	OFF	T1.1	T1.2	
		2.7.2	Industrial Est South	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	
		2.7.3	Industrial Est North	OFF	OFF	OFF	OFF	OFF	OFF	T1.5	T1.5	OFF	OFF	OFF	OFF	T1.5	T1.5	
		2.7.4	Cringlewithe SS	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	
GREEN STREET	CAUNCE ROAD	3.1.2	Nearside Camberwell Crescent North	OFF	OFF	OFF	OFF	OFF	OFF	T1.5	T1.5	OFF	OFF	OFF	T1.5	T1.5		
		3.1.3	Farside Camberwell Crescent North & Link Box 502	OFF	OFF	OFF	OFF	OFF	OFF	T1.5	T1.5	OFF	OFF	OFF	T1.5	T1.5		
		3.1.4	Farside Camberwell Crescent South & Link Box 499	OFF	OFF	OFF	OFF	OFF	OFF	T2.2		T2.2	OFF	OFF	T2.2			
		3.1.5	Nearside Camberwell Crescent South	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	
	LINNEY STREET	3.2.1	Stanley Place towards Platt Ln	OFF	OFF	OFF	OFF	OFF	OFF	T1.5	T1.5	OFF	OFF	OFF	OFF	T1.5	T1.5	
		3.2.2	LB480 and Quarry Place	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	
		3.2.4	Wells Place	OFF	OFF	OFF	OFF	OFF	OFF	T1.5	T2.2	T1.5	T2.2	OFF	OFF	T1.5	T2.2	
		3.2.5	Knowles Place	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	
	MALDON CLOSE	3.3.2	Linney Square	OFF	OFF	OFF	OFF	OFF	OFF	T2.2		T2.2	OFF	OFF	T2.2			
		3.3.3	Caunce Rd towards Isabella Square	OFF	OFF	OFF	OFF	OFF	OFF	T1.5	T1.5	OFF	OFF	OFF	OFF	T1.5	T1.5	
		3.3.4	Linney St	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	
		3.3.5	LB456263 Schofield Ln	OFF	OFF	OFF	OFF	OFF	OFF	T2.2		T2.2	OFF	OFF	OFF	T2.2		
	MOAT HOUSE STREET	3.3.7	Lorne St	OFF	OFF	OFF	OFF	OFF	OFF	T1.5	T1.5	OFF	OFF	OFF	OFF	T1.5	T1.5	
		3.4.2	Link Box Shildon Close	OFF	OFF	OFF	OFF	OFF	OFF	T1.3	T2.2	T1.4	T2.2	OFF	OFF	T1.3	T2.2	
		3.4.3	Link Box Wilton Ave	OFF	OFF	OFF	OFF	OFF	OFF	T1.3	T1.4	T1.4	T2.2	OFF	OFF	T1.3	T1.4	
		3.4.4	Link Box Camberwell Cres	OFF	OFF	OFF	OFF	OFF	OFF	T1.3	T2.2	T1.4	T2.2	OFF	OFF	T1.3	T2.2	
	PETTICOAT LANE	3.4.5	Link Box Bamford Dr	OFF	OFF	OFF	OFF	OFF	OFF	T1.3	T2.2	T1.4	T2.2	OFF	OFF	T1.3	T2.2	
		3.4.6	New School	OFF	OFF	OFF	OFF	OFF	OFF	T1.3	T1.4			OFF	OFF	T1.3	T1.4	
		3.5.2	LB535 Manchester Rd	OFF	OFF	OFF	OFF	OFF	OFF	T1.5	T1.5	OFF	OFF	OFF	OFF	T1.5	T1.5	
		3.5.4	Dobson Park Way	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	
	VAUXHALL ROAD	3.6.2	Thirmere Ave	OFF	OFF	OFF	OFF	OFF	OFF	T1.5	T1.5	OFF	OFF	OFF	OFF	T1.5	T1.5	
		3.6.3	Link Box 528 Windermere Rd	OFF	OFF	OFF	OFF	OFF	OFF	T1.5	T2.2	T1.5	T2.2	OFF	OFF	T1.5	T2.2	
		3.6.4	Link Box 536 Kendal Rd	OFF	OFF	OFF	OFF	OFF	OFF	T1.5	T1.5	OFF	OFF	OFF	OFF	T1.5	T1.5	
		3.6.5	Coniston Ave/Derwent Ave	OFF	OFF	OFF	OFF	OFF	OFF	T2.2		T2.2	OFF	OFF	OFF	T2.2		
	ASHBOURNE AVENUE	3.6.6	Haweswater Ave	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	
		3.7.2	Hackworth Cl (RR30) S/Stn	OFF	OFF	OFF	OFF	OFF	OFF	T1.1	T2.2	T1.2	T2.2	OFF	OFF	T1.1	T2.2	
		3.7.3	Shopping Precinct	OFF	OFF	OFF	OFF	OFF	OFF	T1.1	T1.2			OFF	OFF	T1.1	T1.2	
		3.7.4	Shopping Precinct	OFF	OFF	OFF	OFF	OFF	OFF	T1.1	T1.2			OFF	OFF	T1.1	T1.2	
	HINDLEY GREEN	ASHBOURNE AVENUE	3.7.5	School	OFF	OFF	OFF	OFF	OFF	T1.1	T1.2			OFF	OFF	T1.1	T1.2	
			3.7.6	Vauxhall Rd	OFF	OFF	OFF	OFF	OFF	OFF	T1.1	T1.2			OFF	OFF	T1.1	T1.2
			4.1.2	Claremont Ave (LB 581)	OFF	OFF	OFF	OFF	OFF	OFF	T1.1	T1.2			OFF	OFF	T1.1	T1.2
			4.1.4	Nearside Lancaster Rd to LB599 // Hollins Ln S/Stn	OFF	OFF	OFF	OFF	OFF	OFF	T1.1</							

9.8 Test regime: Week 13 – Week 28

DISTRIBUTION SUBSTATION	CIRCUIT NUMBER	CIRCUIT NAME	WEEK 13	WEEK 14	WEEK 15	WEEK 16	WEEK 17	WEEK 18	WEEK 19	WEEK 20	WEEK 21	WEEK 22	WEEK 23	WEEK 24	WEEK 25	WEEK 26	WEEK 27	WEEK 28					
			12/04/16	19/04/16	26/04/16	03/05/16	10/05/16	17/05/16	24/05/16	31/05/16	07/06/16	14/06/16	21/06/16	28/06/16	05/07/16	12/07/16	19/07/16	26/07/16					
DENTON EAST	CIRCULAR ROAD	1.1.4	LB X125 - Stockport Rd No.350 S/Stn	OFF	OFF	T1.1	T1.2	OFF	OFF	T1.1	T1.2	OFF	OFF	T1.1	T1.2	OFF	OFF	T1.1	T1.2				
		1.1.5	LB X6076 Foxdenton Walk	OFF	OFF	T1.1	T2.2	T1.2	T2.2	OFF	OFF	T1.1	T2.2	T1.2	T2.2	OFF	OFF	T1.1	T2.2	T1.2			
		1.1.6	Birchfield Walk	OFF	OFF	T1.1	T1.2	OFF	OFF	OFF	OFF	T1.1	T1.2	OFF	OFF	OFF	OFF	OFF	OFF	T1.1	T1.2		
	HODNET WALK	1.2.1	Essington Walk	OFF	OFF	T1.5	T1.5	OFF	OFF	OFF	T1.5	T1.5	OFF	OFF	OFF	OFF	OFF	OFF	OFF	T1.5	T1.5		
		1.2.3	LB X6076 - Circular Rd S/Stn	OFF	OFF	T2.2	OFF	OFF	OFF	OFF	T2.2	OFF	OFF	T2.2	OFF								
		1.3.2	Bottle End / 200kVAr Cap	OFF	OFF	OFF	OFF																
	KENNEDY WAY	1.3.3	Millbrook Ave & Ruskin Ave S/S	OFF	OFF	T1.3	T2.2	T1.4	T2.2	OFF	OFF	T1.3	T2.2	T1.4	T2.2	OFF	OFF	OFF	T1.3	T2.2	T1.4	T2.2	
		1.3.4	Warren Close to Ruskin Ave S/S	OFF	OFF	T1.3	T2.2	T1.4	T2.2	OFF	OFF	T1.3	T2.2	T1.4	T2.2	OFF	OFF	OFF	OFF	T1.3	T2.2	T1.4	T2.2
		1.3.5	Tomcroft Lane to X851	OFF	OFF	T1.3	T1.4	OFF	OFF	OFF	OFF	T1.3	T1.4	OFF	OFF	OFF	OFF	OFF	OFF	T1.3	T1.4	OFF	OFF
	SCOTT ROAD	1.4.2	Scott Rd Neaside	OFF	OFF	OFF	OFF	OFF															
		1.4.3	Stockport Rd Neaside to x865 & Stockport Rd Farside	OFF	OFF	T1.5	T1.5	OFF	OFF	OFF	T1.5	T1.5	OFF	OFF	OFF	OFF	OFF	OFF	OFF	T1.5	T1.5	OFF	OFF
		1.4.4	Wakeling Rd Farside to X866	OFF	OFF	T1.5	T2.2	T1.5	T2.2	OFF	OFF	T1.5	T2.2	T1.5	T2.2	OFF	OFF	OFF	OFF	T1.5	T2.2	T1.5	T2.2
	TOWN LANE (NO 52)	1.5.2	Town Lane to X643	OFF	OFF	T1.5	T2.2	T1.5	T2.2	OFF	OFF	T1.5	T2.2	T1.5	T2.2	OFF	OFF	OFF	OFF	T1.5	T2.2	T1.5	T2.2
		1.5.3	Town Lane to X471 - Town Ln S/Stn	OFF	OFF	T1.5	T2.2	T1.5	T2.2	OFF	OFF	T1.5	T2.2	T1.5	T2.2	OFF	OFF	OFF	OFF	T1.5	T2.2	T1.5	T2.2
		1.5.4	Acre St Near Side to Birch Grove S/S	OFF	OFF	OFF	OFF	OFF	OFF														
	VICTORIA STREET (DENTON)	1.5.5	Longmadow Grove	OFF	OFF	OFF	OFF	OFF	OFF														
		1.6.1	Victoria St x232	OFF	OFF	OFF	OFF	OFF	OFF														
1.6.3		Victoria St x132	OFF	OFF	T2.2	T2.2	OFF	OFF	OFF	T2.2	T2.2	OFF	OFF	T2.2	T2.2	OFF	OFF	OFF	T2.2	T2.2	OFF	OFF	
PENDLE ROAD	1.7.3	Pendle to Smith Street - LB X8783	OFF	OFF	T1.5	T2.2	T1.5	T2.2	OFF	OFF	T1.5	T2.2	T1.5	T2.2	OFF	OFF	OFF	OFF	T1.5	T2.2	T1.5	T2.2	
	1.7.4	Pendle Rd to Stockport rd X952 - Mount Pleasant S/Stn	OFF	OFF	T2.2	T2.2	OFF	OFF	OFF	T2.2	T2.2	OFF	OFF	T2.2	T2.2	OFF	OFF	OFF	T2.2	T2.2	OFF	OFF	
EGREMONT	ELECTRIC HOUSE	2.1.2	Jordan Engineering	OFF	OFF	OFF	OFF	OFF															
		2.1.3	North Rd	OFF	OFF	T1.5	T2.2	T1.5	T2.2	OFF	OFF	T1.5	T2.2	T1.5	T2.2	OFF	OFF	OFF	T1.5	T2.2	T1.5	T2.2	
		2.1.4	Windrigg Ct	OFF	OFF	OFF	OFF	OFF	OFF														
	FELL VIEW DRIVE	2.1.5	Main St West	OFF	OFF	OFF	OFF	OFF	OFF														
		2.1.6	Main St East	OFF	OFF	T1.5	T1.5	OFF	OFF	OFF	T1.5	T1.5	OFF	OFF	OFF	OFF	OFF	OFF	OFF	T1.5	T1.5	OFF	OFF
		2.2.2	Fell View Dr/ Queensgate	OFF	OFF	T1.3	T1.4	OFF	OFF	OFF	T1.3	T1.4	OFF	OFF	OFF	OFF	OFF	OFF	OFF	T1.3	T1.4	OFF	OFF
		2.2.3	Bookwell LB111	OFF	OFF	T1.3	T2.2	T1.4	T2.2	OFF	OFF	T1.3	T2.2	T1.4	T2.2	OFF	OFF	OFF	OFF	T1.3	T2.2	T1.4	T2.2
		2.2.4	Haggat end LB110	OFF	OFF	T1.3	T1.4	OFF	OFF	OFF	T1.3	T1.4	OFF	OFF	OFF	OFF	OFF	OFF	OFF	T1.3	T1.4	OFF	OFF
		2.2.5	Greenykn/Dale View Gardens	OFF	OFF	T1.3	T2.2	T1.4	T2.2	OFF	OFF	T1.3	T2.2	T1.4	T2.2	OFF	OFF	OFF	OFF	T1.3	T2.2	T1.4	T2.2
	SMITHFIELD	2.3.2	Greenmoor Rd LB105	OFF	OFF	OFF	OFF	OFF	OFF														
		2.3.3	Copeland Ave LB104	OFF	OFF	T2.2	T2.2	OFF	OFF	OFF	T2.2	T2.2	OFF	OFF	T2.2	T2.2	OFF	OFF	OFF	T2.2	T2.2	OFF	OFF
		2.3.4	Smithfield Rd / Howbank Rd	OFF	OFF	T2.2	T2.2	OFF	OFF	OFF	T2.2	T2.2	OFF	OFF	T2.2	T2.2	OFF	OFF	OFF	T2.2	T2.2	OFF	OFF
		2.3.5	Howbank Rd / Beach Ln	OFF	OFF	T1.5	T2.2	T1.5	T2.2	OFF	OFF	T1.5	T2.2	T1.5	T2.2	OFF	OFF	OFF	OFF	T1.5	T2.2	T1.5	T2.2
		2.3.6	Gillfoot Rd West	OFF	OFF	T1.5	T2.2	T1.5	T2.2	OFF	OFF	T1.5	T2.2	T1.5	T2.2	OFF	OFF	OFF	OFF	T1.5	T2.2	T1.5	T2.2
		2.3.7	Howbank Rd West	OFF	OFF	OFF	OFF	OFF	OFF														
	CROFT TERRACE	2.3.8	The Crescent	OFF	OFF	T1.5	T2.2	T1.5	T2.2	OFF	OFF	T1.5	T2.2	T1.5	T2.2	OFF	OFF	OFF	OFF	T1.5	T2.2	T1.5	T2.2
		2.4.2	South St LB113	OFF	OFF	T1.5	T1.5	OFF	OFF	OFF	T1.5	T1.5	OFF	OFF	T1.5	T1.5	OFF	OFF	OFF	T1.5	T1.5	OFF	OFF
		2.4.3	Beck Green LB116	OFF	OFF	T1.5	T1.5	OFF	OFF	OFF	T1.5	T1.5	OFF	OFF	T1.5	T1.5	OFF	OFF	OFF	T1.5	T1.5	OFF	OFF
	DRYDENWAY	2.4.4	Cross Side	OFF	OFF	OFF	OFF	OFF	OFF														
		2.5.2	Chaucer Ave	OFF	OFF	T1.5	T1.5	OFF	OFF	OFF	T1.5	T1.5	OFF	OFF	OFF	OFF	OFF	OFF	OFF	T1.5	T1.5	OFF	OFF
		2.5.3	Milton Place	OFF	OFF	OFF	OFF	OFF	OFF														
		2.5.4	Keats Drive / Spencer Close to LB108	OFF	OFF	T1.5	T2.2	T1.5	T2.2	OFF	OFF	T1.5	T2.2	T1.5	T2.2	OFF	OFF	OFF	OFF	T1.5	T2.2	T1.5	T2.2
		2.5.5	Croadalla Ave / Coleridge Drive to LB107	OFF	OFF	T2.2	T2.2	OFF	OFF	OFF	T2.2	T2.2	OFF	OFF	T2.2	T2.2	OFF	OFF	OFF	T2.2	T2.2	OFF	OFF
		2.5.6	Dryden Way to Castlecroft	OFF	OFF	T1.5	T1.5	OFF	OFF	OFF	T1.5	T1.5	OFF	OFF	OFF	OFF	OFF	OFF	OFF	T1.5	T1.5	OFF	OFF
	SHAKESPEARE AVEUNE	2.5.7	Infants School	OFF	OFF	OFF	OFF	OFF	OFF														
		2.6.2	Shakespeare Ave Interconnector Castle Croft SS	OFF	OFF	T1.1	T1.2	OFF	OFF	OFF	T1.1	T1.2	OFF	OFF	OFF	OFF	OFF	OFF	OFF	T1.1	T1.2	OFF	OFF
		2.6.3	Tennyson Dr / Shakespeare ave/ Croadalla to LB107	OFF	OFF	T1.1	T2.2	T1.2	T2.2	OFF	OFF	T1.1	T2.2	T1.2	T2.2	OFF	OFF	OFF	OFF	T1.1	T2.2	T1.2	T2.2
		2.6.4	Southey Dr / Tennyson Dr to LB 108	OFF	OFF	T1.1	T2.2	T1.2	T2.2	OFF	OFF	T1.1	T2.2	T1.2	T2.2	OFF	OFF	OFF	OFF	T1.1	T2.2	T1.2	T2.2
		2.6.5	Southey Dr/Southey Walk/Orgill Junior School to LB	OFF	OFF	T1.1	T1.2	OFF	OFF	OFF	T1.1	T1.2	OFF	OFF	OFF	OFF	OFF	OFF	OFF	T1.1	T1.2	OFF	OFF
		2.6.6	Wordsworth Ct / Goldsmith Rd	OFF	OFF	T1.1	T1.2	OFF	OFF	OFF	T1.1	T1.2	OFF	OFF	OFF	OFF	OFF	OFF	OFF	T1.1	T1.2	OFF	OFF
	BRIDGE END IND EST	2.6.7	Shakespeare Ave/Wordsworth CL/Broadfield HSE/LB138	OFF	OFF	T1.1	T1.2	OFF	OFF	OFF	T1.1	T1.2	OFF	OFF	OFF	OFF	OFF	OFF	OFF	T1.1	T1.2	OFF	OFF
		2.7.2	Industrial Est South	OFF	OFF	OFF	OFF	OFF	OFF														
		2.7.3	Industrial Est North	OFF	OFF	T1.5	T1.5	OFF	OFF	OFF	T1.5	T1.5	OFF	OFF	OFF	OFF	OFF	OFF	OFF	T1.5	T1.5	OFF	OFF
2.7.4		Cringlewithe SS	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	
GREEN STREET	CAMBERWELL CRESCENT	3.1.2	Neaside Camberwell Crescent North	OFF	OFF	T1.5	T1.5	OFF	OFF	T1.5	T1.5	OFF	OFF	T1.5	T1.5	OFF	OFF	OFF	T1.5	T1.5	OFF	OFF	
		3.1.3	Farside Camberwell Crescent North & Link Box 502	OFF	OFF	T1.5	T1.5	OFF	OFF	OFF	T1.5	T1.5	OFF	OFF	OFF	OFF	OFF	OFF	OFF	T1.5	T1.5	OFF	OFF
		3.1.4	Farside Camberwell Crescent South & Link Box 499	OFF	OFF	T2.2	T2.2	OFF	OFF	OFF	T2.2	T2.2	OFF	OFF	T2.2	T2.2	OFF	OFF	OFF	T2.2	T2.2	OFF	OFF
	CAUNCE ROAD	3.1.5	Neaside Camberwell Crescent South	OFF	OFF	OFF	OFF	OFF	OFF														
		3.2.1	Stanley Place towards Platt Ln	OFF	OFF	T1.5	T1.5	OFF	OFF	OFF	T1.5	T1.5	OFF	OFF	OFF	OFF	OFF	OFF	OFF	T1.5	T1.5	OFF	OFF
		3.2.2	LB480 and Quarry Place	OFF	OFF	OFF	OFF	OFF	OFF														
		3.2.4	Wells Place	OFF	OFF	T1.5	T2.2	T1.5	T2.2	OFF	OFF	T1.5	T2.2	T1.5	T2.2	OFF	OFF	OFF	OFF	T1.5	T2.2	T1.5	T2.2
		3.2.5	Knives Place	OFF	OFF	OFF	OFF	OFF	OFF														
		3.3.2	Linney Square	OFF	OFF	T2.2	T2.2	OFF	OFF	OFF	T2.2	T2.2	OFF	OFF	OFF	OFF	OFF	OFF	OFF	T2.2	T2.2	OFF	OFF
	LINNEY STREET	3.3.3	Caunce Rd towards Isabella Square	OFF	OFF	T1.5	T1.5	OFF	OFF	OFF	T1.5	T1.5											

9.9 Test regime: Week 29 – Week 44

DISTRIBUTION SUBSTATION	CIRCUIT NUMBER	CIRCUIT NAME	WEEK 29	WEEK 30	WEEK 31	WEEK 32	WEEK 33	WEEK 34	WEEK 35	WEEK 36	WEEK 37	WEEK 38	WEEK 39	WEEK 40	WEEK 41	WEEK 42	WEEK 43	WEEK 44					
			02/08/16	09/08/16	16/08/16	23/08/16	30/08/16	06/09/16	13/09/16	20/09/16	27/09/16	04/10/16	11/10/16	18/10/16	25/10/16	01/11/16	08/11/16	15/11/16					
DENTON EAST	CIRCULAR ROAD	1.1.4	LB X125 - Stockport Rd No.350 S/Stn	OFF	OFF	T1.1	T1.2	OFF	OFF	T1.2	T1.2	OFF	OFF	T1.1	T1.2	OFF	OFF	T1.1	T1.2				
		1.1.5	LB X6076 Foxdenton Walk	OFF	OFF	T1.1	T2.2	OFF	OFF	T1.2	T2.2	OFF	OFF	T1.3	T2.2	T1.4	T2.2	OFF	OFF	T1.1	T2.2	T1.4	T2.2
		1.1.6	Birchfield Walk	OFF	OFF	T1.1	T1.2	OFF	OFF	T1.2	T1.2	OFF	OFF	T1.1	T1.2	OFF	OFF	OFF	OFF	T1.1	T1.2		
	HODNET WALK	1.2.1	Essington Walk	OFF	OFF	T1.5	T1.5	OFF	OFF	T1.5	T1.5	OFF	OFF	T1.5	T1.5	OFF	OFF	OFF	OFF	T1.5	T1.5		
		1.2.3	LB X6076 - Circular Rd S/Stn	OFF	OFF	T2.2		OFF	OFF			OFF	OFF	T2.2		OFF	OFF	OFF	OFF		T2.2		
	KENNEDY WAY	1.3.2	Bottle End / 200kVAr Cap	OFF	OFF			OFF	OFF			OFF	OFF			OFF	OFF	OFF	OFF				
		1.3.3	Millbrook Ave & Ruskin Ave S/S	OFF	OFF	T1.3	T2.2	T1.4	T2.2	OFF	OFF	T1.4	T2.2	T1.4	T2.2	OFF	OFF	T1.3	T2.2	T1.4	T2.2		
		1.3.4	Warren Close to Ruskin Ave S/S	OFF	OFF	T1.3	T2.2	T1.4	T2.2	OFF	OFF	T1.4	T2.2	T1.4	T2.2	OFF	OFF	T1.3	T2.2	T1.4	T2.2		
	SCOTT ROAD	1.3.5	Tomcroft Lane to X851	OFF	OFF	T1.3	T1.4			OFF	OFF	T1.3	T1.4			OFF	OFF	T1.3	T1.4				
		1.4.2	Scott Rd Nearside	OFF	OFF			OFF	OFF			OFF	OFF			OFF	OFF			OFF	OFF		
		1.4.3	Stockport Rd Nearside to x865 & Stockport Rd Farside	OFF	OFF	T1.5	T1.5	OFF	OFF	T1.5	T1.5	OFF	OFF	T1.5	T1.5	OFF	OFF	OFF	OFF	T1.5	T1.5		
		1.4.4	Wakeling Rd Farside to X866	OFF	OFF	T1.5	T2.2	T1.5	T2.2	OFF	OFF	T1.5	T2.2	T1.5	T2.2	OFF	OFF	T1.5	T2.2	T1.5	T2.2		
		1.4.5	Wakeling Rd Nearside to X866	OFF	OFF	T2.2		T2.2		OFF	OFF	T2.2		T2.2		OFF	OFF	T2.2		T2.2			
	TOWN LANE (NO 52)	1.5.2	Town Lane to X643	OFF	OFF	T1.5	T2.2	T1.5	T2.2	OFF	OFF	T1.5	T2.2	T1.5	T2.2	OFF	OFF	T1.5	T2.2	T1.5	T2.2		
		1.5.3	Town Lane to X471 - Town Ln S/Stn	OFF	OFF	T1.5	T1.5			OFF	OFF	T1.5	T1.5			OFF	OFF	T1.5	T1.5				
		1.5.4	Acre St Near Side to Birch Grove S/S	OFF	OFF					OFF	OFF					OFF	OFF						
		1.5.5	Longmeadow Grove	OFF	OFF					OFF	OFF					OFF	OFF						
VICTORIA STREET (DENTON)	1.6.1	Victoria St x232	OFF	OFF					OFF	OFF					OFF	OFF							
	1.6.3	Victoria St x132	OFF	OFF					OFF	OFF					OFF	OFF							
PENDLE ROAD	1.7.3	Pendle to Smith Street - LB X8783	OFF	OFF	T1.5	T2.2	T1.5	T2.2	OFF	OFF	T1.5	T2.2	T1.5	T2.2	OFF	OFF	T1.5	T2.2	T1.5	T2.2			
	1.7.4	Pendle Rd to Stockport rd X952 - Mount Pleasant S/Stn	OFF	OFF	T2.2		T2.2		OFF	OFF	T2.2		T2.2		OFF	OFF	T2.2		T2.2				
EGREMONI	ELECTRIC HOUSE	2.1.2	Jordan Engineering	OFF	OFF			OFF	OFF			OFF	OFF			OFF	OFF						
		2.1.3	North Rd	OFF	OFF	T1.5	T2.2	T1.5	T2.2	OFF	OFF	T1.5	T2.2	T1.5	T2.2	OFF	OFF	T1.5	T2.2	T1.5	T2.2		
		2.1.4	Windrigg Cl	OFF	OFF					OFF	OFF			OFF	OFF			OFF	OFF				
	FELL VIEW DRIVE	2.1.5	Main St West	OFF	OFF					OFF	OFF			OFF	OFF			OFF	OFF				
		2.1.6	Main St East	OFF	OFF	T1.5	T1.5			OFF	OFF	T1.5	T1.5			OFF	OFF	T1.5	T1.5				
		2.2.2	Fell View Dr/ Queensgate	OFF	OFF	T1.3	T1.4			OFF	OFF	T1.4	T1.4			OFF	OFF	T1.3	T1.4				
		2.2.3	Bookwell LB111	OFF	OFF	T1.3	T2.2	T1.4	T2.2	OFF	OFF	T1.4	T2.2	T1.4	T2.2	OFF	OFF	T1.3	T2.2	T1.4	T2.2		
		2.2.4	Hagget end LB110	OFF	OFF	T1.3	T1.4			OFF	OFF	T1.4	T1.4			OFF	OFF	T1.3	T1.4				
	SMITHFIELD	2.2.5	Greenykes/Dale View Gardens	OFF	OFF	T1.3	T2.2	T1.4	T2.2	OFF	OFF	T1.4	T2.2	T1.4	T2.2	OFF	OFF	T1.3	T2.2	T1.4	T2.2		
		2.3.2	Greenmoor Rd LB105	OFF	OFF					OFF	OFF					OFF	OFF						
		2.3.3	Copeland Ave LB104	OFF	OFF	T2.2		T2.2		OFF	OFF	T2.2		T2.2		OFF	OFF	T2.2		T2.2			
		2.3.4	Smithfield Rd / Howbank Rd	OFF	OFF	T2.2		T2.2		OFF	OFF	T2.2		T2.2		OFF	OFF	T2.2		T2.2			
		2.3.5	Howbank Rd / Beach Ln	OFF	OFF	T1.5	T2.2	T1.5	T2.2	OFF	OFF	T1.5	T2.2	T1.5	T2.2	OFF	OFF	T1.5	T2.2	T1.5	T2.2		
	CROFT TERRACE	2.3.6	Gillford Rd West	OFF	OFF	T1.5	T2.2	T1.5	T2.2	OFF	OFF	T1.5	T2.2	T1.5	T2.2	OFF	OFF	T1.5	T2.2	T1.5	T2.2		
		2.3.7	Howbank Rd West	OFF	OFF	T1.5	T2.2	T1.5	T2.2	OFF	OFF	T1.5	T2.2	T1.5	T2.2	OFF	OFF	T1.5	T2.2	T1.5	T2.2		
		2.3.8	The Crescent	OFF	OFF	T1.5	T2.2	T1.5	T2.2	OFF	OFF	T1.5	T2.2	T1.5	T2.2	OFF	OFF	T1.5	T2.2	T1.5	T2.2		
		2.4.2	South St LB113	OFF	OFF	T1.5	T1.5			OFF	OFF	T1.5	T1.5			OFF	OFF	T1.5	T1.5				
		2.4.3	Beck Green LB116	OFF	OFF	T1.5	T1.5			OFF	OFF	T1.5	T1.5			OFF	OFF	T1.5	T1.5				
	DRYDENWAY	2.4.4	Cross Side	OFF	OFF					OFF	OFF			OFF	OFF			OFF	OFF				
		2.5.2	Chaucer Ave	OFF	OFF	T1.5	T1.5			OFF	OFF	T1.5	T1.5			OFF	OFF	T1.5	T1.5				
		2.5.3	Milton Place	OFF	OFF					OFF	OFF			OFF	OFF			OFF	OFF				
		2.5.4	Keats Drive / Spencer Close to LB108	OFF	OFF	T1.5	T2.2	T1.5	T2.2	OFF	OFF	T1.5	T2.2	T1.5	T2.2	OFF	OFF	T1.5	T2.2	T1.5	T2.2		
		2.5.5	Croadalla Ave / Coleridge Drive to LB107	OFF	OFF	T2.2		T2.2		OFF	OFF	T2.2		T2.2		OFF	OFF	T2.2		T2.2			
	SHAKESPEARE AVENUE	2.5.6	Dryden Way to Castlecroft	OFF	OFF	T1.5	T1.5			OFF	OFF	T1.5	T1.5			OFF	OFF	T1.5	T1.5				
		2.5.7	Infants School	OFF	OFF					OFF	OFF			OFF	OFF			OFF	OFF				
		2.6.2	Shakespeare Ave Interconnector Castle Croft SS	OFF	OFF	T1.1	T1.2			OFF	OFF	T1.2	T1.2			OFF	OFF	T1.1	T1.2				
		2.6.3	Tennyson Dr / Shakespeare ave / Croadella to LB107	OFF	OFF	T1.1	T2.2	T1.2	T2.2	OFF	OFF	T1.2	T2.2	T1.2	T2.2	OFF	OFF	T1.1	T2.2	T1.2	T2.2		
		2.6.4	Southey Dr / Tennyson Dr to LB 108	OFF	OFF	T1.1	T2.2	T1.2	T2.2	OFF	OFF	T1.2	T2.2	T1.2	T2.2	OFF	OFF	T1.1	T2.2	T1.2	T2.2		
	BRIDGE END IND EST	2.6.5	Southey Dr/Southey Walk/Orgill Junior School to LB	OFF	OFF	T1.1	T1.2			OFF	OFF	T1.2	T1.2			OFF	OFF	T1.1	T1.2				
		2.6.6	Wordsworth Cl / Goldsmith Rd	OFF	OFF	T1.1	T1.2			OFF	OFF	T1.2	T1.2			OFF	OFF	T1.1	T1.2				
		2.6.7	Shakespeare Ave/Wordsworth CL/Broadfield HSE/LB138	OFF	OFF	T1.1	T1.2			OFF	OFF	T1.2	T1.2			OFF	OFF	T1.1	T1.2				
		2.7.2	Industrial Est South	OFF	OFF					OFF	OFF			OFF	OFF			OFF	OFF				
		2.7.3	Industrial Est North	OFF	OFF	T1.5	T1.5			OFF	OFF	T1.5	T1.5			OFF	OFF	T1.5	T1.5				
	GREEN STREET	CAMBERWELL CRESCENT	3.1.2	Nearside Camberwell Crescent North	OFF	OFF	T1.5	T1.5			OFF	OFF	T1.5	T1.5			OFF	OFF	T1.5	T1.5			
			3.1.3	Farside Camberwell Crescent North & Link Box 502	OFF	OFF	T1.5	T1.5			OFF	OFF	T1.5	T1.5			OFF	OFF	T1.5	T1.5			
			3.1.4	Farside Camberwell Crescent South & Link Box 499	OFF	OFF	T2.2		T2.2		OFF	OFF	T2.2		T2.2		OFF	OFF	T2.2		T2.2		
CAUNCE ROAD		3.1.5	Nearside Camberwell Crescent South	OFF	OFF					OFF	OFF			OFF	OFF			OFF	OFF				
		3.2.1	Stanley Place towards Platt Ln	OFF	OFF	T1.5	T1.5			OFF	OFF	T1.5	T1.5			OFF	OFF	T1.5	T1.5				
		3.2.2	LB480 and Quarry Place	OFF	OFF					OFF	OFF			OFF	OFF			OFF	OFF				
		3.2.4	Wells Place	OFF	OFF	T1.5	T2.2	T1.5	T2.2	OFF	OFF	T1.5	T2.2	T1.5	T2.2	OFF	OFF	T1.5	T2.2	T1.5	T2.2		
		3.2.5	Knowles Place	OFF	OFF					OFF	OFF			OFF	OFF			OFF	OFF				
LINNEY STREET		3.3.2	Linney Square	OFF	OFF	T2.2		T2.2		OFF	OFF	T2.2		T2.2		OFF	OFF	T2.2		T2.2			
		3.3.3	Caunce Rd towards Isabella Square	OFF	OFF	T1.5	T1.5			OFF	OFF	T1.5	T1.5			OFF	OFF	T1.5	T1.5				
		3.3.4	Linney St	OFF	OFF					OFF	OFF			OFF	OFF			OFF	OFF				
		3.3.5	LB450263 Schofield Ln	OFF	OFF	T2.2		T2.2		OFF	OFF	T2.2		T2.2		OFF	OFF	T2.2		T2.2			
		3.3.7	Lorne St	OFF	OFF	T1.5	T1.5			OFF	OFF	T1.5	T1.5			OFF	OFF	T1.5	T1.5				
MALDON CLOSE		3.4.2	Link Box Shildon Close	OFF	OFF	T1.3	T2.2	T1.4	T2.2	OFF	OFF	T1.4	T2.2	T1.4	T2.2	OFF	OFF	T1.3	T2.2	T1.4	T2.2		
		3.4.3	Link Box Wilton Ave	OFF	OFF	T1.3	T1.4			OFF	OFF	T1.4	T1.4			OFF	OFF	T1.3	T1.4				
		3.4.4	Link Box Camberwell Cres	OFF	OFF	T1.3	T2.2	T1.4	T2.2	OFF	OFF	T1.4	T2.2	T1.4	T2.2	OFF	OFF	T1.3	T2.2	T1.4	T2.2		
		3.4.5	Link Box Bamford Dr	OFF	OFF	T1.3	T2.2	T1.4	T2.2	OFF	OFF	T1.4	T2.2	T1.4	T2.2	OFF	OFF	T1.3	T2.2	T1.4	T2.2		
		3.4.6	New School	OFF	OFF	T1.3	T1.4			OFF	OFF	T1.4	T1.4			OFF	OFF	T1.3	T1.4				
MOAT HOUSE STREET		3.5.2	LB535 Manchester Rd	OFF	OFF	T1.5	T1.5																

9.11 Test regime: Week 61 – Week 76

	DISTRIBUTION SUBSTATION	CIRCUIT NUMBER	CIRCUIT NAME	WEEK 61	WEEK 62	WEEK 63	WEEK 64	WEEK 65	WEEK 66	WEEK 67	WEEK 68	WEEK 69	WEEK 70	WEEK 71	WEEK 72	WEEK 73	WEEK 74	WEEK 75	WEEK 76			
				14/03/17	21/03/17	28/03/17	04/04/17	11/04/17	18/04/17	25/04/17	02/05/17	09/05/17	16/05/17	23/05/17	30/05/17	06/06/17	13/06/17	20/06/17	27/06/17			
DENTON EAST	CIRCULAR ROAD	1.1.4	LB X125 - Stockport Rd No.350 S/Stn	T1.1	T1.2	OFF	OFF	T1.1	T1.2	OFF	OFF	T1.2	T1.2	OFF	OFF	T1.1	T1.2	OFF	OFF			
		1.1.5	LB X676 Foxdenton Walk	T1.1	T2.2	T1.2	OFF	OFF	T1.1	T2.2	T1.2	OFF	OFF	T1.2	T2.2	OFF	OFF	T1.1	T2.2	T1.2	OFF	
		1.1.6	Birchfield Walk	T1.1	T1.2	OFF	OFF	T1.1	T1.2	OFF	OFF	OFF	OFF	T1.2	T1.2	OFF	OFF	T1.1	T1.2	OFF	OFF	
	HODNET WALK	1.2.1	Essington Walk	T1.5	T1.5	OFF	OFF	T1.5	T1.5	OFF	OFF	OFF	OFF	T1.5	T1.5	OFF	OFF	T1.5	T1.5	OFF	OFF	
		1.2.2	LB X676 - Circular Rd S/Stn	T1.5	T2.2	OFF	OFF	T2.2		OFF	OFF	OFF	OFF			OFF	OFF	T2.2		OFF	OFF	
		1.2.3	Bottle End / 200kVAr Cap			OFF	OFF			OFF	OFF	OFF	OFF			OFF	OFF			OFF	OFF	
	KENNEDY WAY	1.3.1	Millbrook Ave & Ruskin Ave S/S	T1.3	T2.2	T1.4	T2.2	OFF	OFF	T1.3	T2.2	T1.4	T2.2	OFF	OFF	OFF	OFF	T1.3	T2.2	T1.4	T2.2	OFF
		1.3.2	Warren Close to Ruskin Ave S/S	T1.3	T2.2	T1.4	T2.2	OFF	OFF	T1.3	T2.2	T1.4	T2.2	OFF	OFF	OFF	OFF	T1.3	T2.2	T1.4	T2.2	OFF
		1.3.3	Tomcroft Lane to X851	T1.3	T2.2	T1.4	T2.2	OFF	OFF	T1.3	T2.2	T1.4	T2.2	OFF	OFF	OFF	OFF	T1.3	T2.2	T1.4	T2.2	OFF
	SCOTT ROAD	1.4.1	Scott Rd Neaside			OFF	OFF			OFF	OFF	OFF	OFF			OFF	OFF			OFF	OFF	
		1.4.2	Stockport Rd Neaside to x865 & Stockport Rd Farside	T1.5	T1.5	OFF	OFF	T1.5	T1.5	OFF	OFF	OFF	OFF	T1.5	T1.5	OFF	OFF	T1.5	T1.5	OFF	OFF	
		1.4.3	Wakeling Rd Farside to X866	T1.5	T2.2	T1.5	T2.2	OFF	OFF	T1.5	T2.2	T1.5	T2.2	OFF	OFF	OFF	OFF	T1.5	T2.2	T1.5	T2.2	OFF
	TOWN LANE (NO 52)	1.5.1	Wakeling Rd Neaside to X866	T1.5	T2.2	T1.5	T2.2	OFF	OFF	T1.5	T2.2	T1.5	T2.2	OFF	OFF	OFF	OFF	T1.5	T2.2	T1.5	T2.2	OFF
		1.5.2	Town Lane to X471 - Town Ln S/Stn	T1.5	T2.2	T1.5	T2.2	OFF	OFF	T1.5	T2.2	T1.5	T2.2	OFF	OFF	OFF	OFF	T1.5	T2.2	T1.5	T2.2	OFF
		1.5.3	Acres St Near Side to Birch Grove S/S	T1.5	T2.2	T1.5	T2.2	OFF	OFF	T1.5	T2.2	T1.5	T2.2	OFF	OFF	OFF	OFF	T1.5	T2.2	T1.5	T2.2	OFF
	VICTORIA STREET (DENTON)	1.6.1	Longmaslow Grove			OFF	OFF			OFF	OFF	OFF	OFF			OFF	OFF			OFF	OFF	
1.6.2		Victoria St x232			OFF	OFF			OFF	OFF	OFF	OFF			OFF	OFF			OFF	OFF		
1.6.3		Victoria St x132	T2.2	T2.2	OFF	OFF	T2.2		OFF	OFF	OFF	OFF	T2.2	T2.2	OFF	OFF	T2.2	T2.2	OFF	OFF		
PENDLE ROAD	1.7.1	Pendle to Smith Street - LB X8783	T1.5	T2.2	T1.5	T2.2	OFF	OFF	T1.5	T2.2	T1.5	T2.2	OFF	OFF	OFF	OFF	T1.5	T2.2	T1.5	T2.2	OFF	
	1.7.2	Pendle Rd to Stockport rd X952 - Mount Pleasant S/Stn	T2.2	T2.2	OFF	OFF	T2.2		OFF	OFF	OFF	OFF	T2.2	T2.2	OFF	OFF	T2.2	T2.2	OFF	OFF		
EGREMONT	ELECTRIC HOUSE	2.1.2	Jordan Engineering			OFF	OFF			OFF	OFF											
		2.1.3	North Rd	T1.5	T2.2	T1.5	T2.2	OFF	OFF	T1.5	T2.2	T1.5	T2.2	OFF	OFF	OFF	OFF	T1.5	T2.2	T1.5	T2.2	OFF
		2.1.4	Windridge Cl			OFF	OFF			OFF	OFF	OFF	OFF			OFF	OFF			OFF	OFF	
	FELL VIEW DRIVE	2.1.5	Main St West			OFF	OFF			OFF	OFF	OFF	OFF			OFF	OFF			OFF	OFF	
		2.1.6	Main St East	T1.5	T1.5	OFF	OFF	T1.5	T1.5	OFF	OFF	OFF	OFF	T1.5	T1.5	OFF	OFF	T1.5	T1.5	OFF	OFF	
		2.2.1	Fell View Dr Queensgate	T1.3	T1.4	OFF	OFF	T1.3	T1.4	OFF	OFF	OFF	OFF	T1.4	T1.4	OFF	OFF	T1.3	T1.4	OFF	OFF	
		2.2.2	Bookwell LB111	T1.3	T2.2	T1.4	T2.2	OFF	OFF	T1.3	T2.2	T1.4	T2.2	OFF	OFF	OFF	OFF	T1.3	T2.2	T1.4	T2.2	OFF
		2.2.4	Hagget end LB110	T1.3	T1.4	OFF	OFF	T1.3	T1.4	OFF	OFF	OFF	OFF	T1.4	T1.4	OFF	OFF	T1.3	T1.4	OFF	OFF	
	SMITHFIELD	2.2.5	Greenykes/Dale View Gardens	T1.3	T2.2	T1.4	T2.2	OFF	OFF	T1.3	T2.2	T1.4	T2.2	OFF	OFF	OFF	OFF	T1.3	T2.2	T1.4	T2.2	OFF
		2.3.2	Greenmoor Rd LB105			OFF	OFF			OFF	OFF	OFF	OFF			OFF	OFF			OFF	OFF	
		2.3.3	Copeland Ave LB104		T2.2	T2.2	OFF	OFF	T2.2		T2.2	OFF	OFF	T2.2	T2.2	OFF	OFF	T2.2	T2.2	OFF	OFF	
		2.3.4	Smithfield Rd / Howbank Rd		T2.2	T2.2	OFF	OFF	T2.2		T2.2	OFF	OFF	T2.2	T2.2	OFF	OFF	T2.2	T2.2	OFF	OFF	
		2.3.5	Howbank Rd / Beach Ln	T1.5	T2.2	T1.5	T2.2	OFF	OFF	T1.5	T2.2	T1.5	T2.2	OFF	OFF	OFF	OFF	T1.5	T2.2	T1.5	T2.2	OFF
		2.3.6	Gillfoot Rd West	T1.5	T2.2	T1.5	T2.2	OFF	OFF	T1.5	T2.2	T1.5	T2.2	OFF	OFF	OFF	OFF	T1.5	T2.2	T1.5	T2.2	OFF
		2.3.7	Howbank Rd West			OFF	OFF			OFF	OFF	OFF	OFF			OFF	OFF			OFF	OFF	
		2.3.8	The Crescent	T1.5	T2.2	T1.5	T2.2	OFF	OFF	T1.5	T2.2	T1.5	T2.2	OFF	OFF	OFF	OFF	T1.5	T2.2	T1.5	T2.2	OFF
	CROFT TERRACE	2.4.2	South St LB113	T1.5	T1.5	OFF	OFF	T1.5	T1.5	OFF	OFF	OFF	OFF	T1.5	T1.5	OFF	OFF	T1.5	T1.5	OFF	OFF	
		2.4.3	Beck Green LB116	T1.5	T1.5	OFF	OFF	T1.5	T1.5	OFF	OFF	OFF	OFF	T1.5	T1.5	OFF	OFF	T1.5	T1.5	OFF	OFF	
		2.4.4	Cross Side			OFF	OFF			OFF	OFF	OFF	OFF			OFF	OFF			OFF	OFF	
	DRYDENWAY	2.5.2	Chaucer Ave	T1.5	T1.5	OFF	OFF	T1.5	T1.5	OFF	OFF	OFF	OFF	T1.5	T1.5	OFF	OFF	T1.5	T1.5	OFF	OFF	
		2.5.3	Milton Place			OFF	OFF			OFF	OFF	OFF	OFF			OFF	OFF			OFF	OFF	
		2.5.4	Keats Drive / Spencer Close to LB108	T1.5	T2.2	T1.5	T2.2	OFF	OFF	T1.5	T2.2	T1.5	T2.2	OFF	OFF	OFF	OFF	T1.5	T2.2	T1.5	T2.2	OFF
	SHAKESPEARE AVENUE	2.5.5	Croadalla Ave / Coleridge Drive to LB107		T2.2	T2.2	OFF	OFF			OFF	OFF			OFF	OFF					OFF	
		2.5.6	Dryden Way to Castlecroft	T1.5	T1.5	OFF	OFF	T1.5	T1.5	OFF	OFF	OFF	OFF	T1.5	T1.5	OFF	OFF	T1.5	T1.5	OFF	OFF	
2.5.7		Infants School			OFF	OFF			OFF	OFF	OFF	OFF			OFF	OFF			OFF	OFF		
2.6.2		Shakespeare Ave Interconnector Castle Croft SS	T1.1	T1.2	OFF	OFF	T1.1	T1.2	OFF	OFF	OFF	OFF	T1.2	T1.2	OFF	OFF	T1.1	T1.2	OFF	OFF		
2.6.3		Tennyson Dr / Shakespeare Ave / Croadalla to LB107	T1.1	T2.2	T1.2	T2.2	OFF	OFF	T1.1	T2.2	T1.2	T2.2	OFF	OFF	OFF	OFF	T1.1	T2.2	T1.2	T2.2	OFF	
2.6.4		Southey Dr / Tennyson Dr to LB 108	T1.1	T2.2	T1.2	T2.2	OFF	OFF	T1.1	T2.2	T1.2	T2.2	OFF	OFF	OFF	OFF	T1.1	T2.2	T1.2	T2.2	OFF	
2.6.5		Southey Dr/Southey Walk/Orgill Junior School to LB	T1.1	T1.2	OFF	OFF	T1.1	T1.2	OFF	OFF	OFF	OFF	T1.2	T1.2	OFF	OFF	T1.1	T1.2	OFF	OFF		
BRIDGE END IND EST	2.7.2	Wordsworth Cl / Goldsmith Rd	T1.1	T1.2	OFF	OFF	T1.1	T1.2	OFF	OFF	OFF	OFF	T1.2	T1.2	OFF	OFF	T1.1	T1.2	OFF	OFF		
	2.7.3	Shakespeare Ave/Wordsworth Cl/Broadfield HSE/LB138	T1.1	T1.2	OFF	OFF	T1.1	T1.2	OFF	OFF	OFF	OFF	T1.2	T1.2	OFF	OFF	T1.1	T1.2	OFF	OFF		
GREEN STREET	CAMBERWELL CRESCENT	3.1.2	Nearside Camberwell Crescent North	T1.5	T1.5	OFF	OFF															
		3.1.3	Farside Camberwell Crescent North & Link Box 502	T1.5	T1.5	OFF	OFF	T1.5	T1.5	OFF	OFF	OFF	OFF	T1.5	T1.5	OFF	OFF	T1.5	T1.5	OFF	OFF	
		3.1.4	Farside Camberwell Crescent South & Link Box 499		T2.2	T2.2	OFF	OFF	T2.2	T2.2	OFF	OFF			OFF	OFF			OFF	OFF		
	CAUNCE ROAD	3.1.5	Nearside Camberwell Crescent South			OFF	OFF			OFF	OFF	OFF	OFF			OFF	OFF			OFF	OFF	
		3.2.1	Stanley Place towards Platt Ln	T1.5	T1.5	OFF	OFF	T1.5	T1.5	OFF	OFF	OFF	OFF	T1.5	T1.5	OFF	OFF	T1.5	T1.5	OFF	OFF	
		3.2.2	LB489 and Quarry Place			OFF	OFF			OFF	OFF	OFF	OFF			OFF	OFF			OFF	OFF	
		3.2.4	Wells Place	T1.5	T2.2	T1.5	T2.2	OFF	OFF	T1.5	T2.2	T1.5	T2.2	OFF	OFF	OFF	OFF	T1.5	T2.2	T1.5	T2.2	OFF
		3.2.5	Knowles Place			OFF	OFF			OFF	OFF	OFF	OFF			OFF	OFF			OFF	OFF	
	LINNEY STREET	3.3.2	Linney Square	T2.2	T2.2	OFF	OFF	T2.2	T2.2	OFF	OFF	OFF	OFF	T2.2	T2.2	OFF	OFF	T2.2	T2.2	OFF	OFF	
		3.3.3	Caunce Rd towards Isabella Square	T1.5	T1.5	OFF	OFF	T1.5	T1.5	OFF	OFF	OFF	OFF	T1.5	T1.5	OFF	OFF	T1.5	T1.5	OFF	OFF	
		3.3.4	Linney St			OFF	OFF			OFF	OFF	OFF	OFF			OFF	OFF			OFF	OFF	
	MALDON CLOSE	3.3.5	LB456/263 Schofield Ln		T2.2	T2.2	OFF	OFF	T2.2	T2.2	OFF	OFF			OFF	OFF			OFF	OFF		
		3.3.7	Lorne St	T1.5	T1.5	OFF	OFF	T1.5	T1.5	OFF	OFF	OFF	OFF	T1.5	T1.5	OFF	OFF	T1.5	T1.5	OFF	OFF	
		3.4.2	Link Box Shildon Close	T1.3	T2.2	T1.4	T2.2	OFF	OFF	T1.3	T2.2	T1.4	T2.2	OFF	OFF	OFF	OFF	T1.3	T2.2	T1.4	T2.2	OFF
		3.4.3	Link Box Willton Ave	T1.3	T1.4	OFF	OFF	T1.3	T1.4	OFF	OFF	OFF	OFF	T1.4	T1.4	OFF	OFF	T1.3	T1.4	OFF	OFF	
		3.4.4	Link Box Camberwell Cres	T1.3	T2.2	T1.4	T2.2	OFF	OFF	T1.3	T2.2	T1.4	T2.2	OFF	OFF	OFF	OFF	T1.3	T2.2	T1.4	T2.2	OFF
		3.4.5	Link Box Bamford Dr	T1.3	T2.2	T1.4	T2.2	OFF	OFF	T1.3	T2.2	T1.4	T2.2	OFF	OFF	OFF	OFF	T1.3	T2.2	T1.4	T2.2	OFF
	MOAT HOUSE STREET	3.4.6	New School	T1.3	T1.4	OFF																

9.12 Test regime: Week 77 – Week 92

	DISTRIBUTION SUBSTATION	CIRCUIT NUMBER	CIRCUIT NAME	WEEK 77	WEEK 78	WEEK 79	WEEK 80	WEEK 81	WEEK 82	WEEK 83	WEEK 84	WEEK 85	WEEK 86	WEEK 87	WEEK 88	WEEK 89	WEEK 90	WEEK 91	WEEK 92		
				04/07/17	11/07/17	18/07/17	25/07/17	01/08/17	08/08/17	15/08/17	22/08/17	29/08/17	05/09/17	12/09/17	19/09/17	26/09/17	03/10/17	10/10/17	17/10/17		
DENTON EAST	CIRCULAR ROAD	1.1.4	LB X125 - Stockport Rd No.350 S/Stn	T1.1	T1.2	OFF	OFF														
		1.1.5	LB X676 Foxdenton Walk	T1.1	T2.2	T1.2	OFF	OFF	T1.1	T2.2	T1.2	OFF	OFF	T1.1	T2.2	T1.2	OFF	OFF	T1.1	T2.2	
		1.1.6	Birchfield Walk	T1.1	T1.2	OFF	OFF	T1.1	T1.2												
	HODNET WALK	1.2.1	Essington Walk	T1.5	T1.5	OFF	OFF	T1.5	T1.5												
		1.2.3	LB X676 - Circular Rd S/Stn	T2.2		OFF	OFF	T2.2													
		1.3.2	Bottle End / 200kVAr Cap	OFF	OFF	OFF															
	KENNEDY WAY	1.3.3	Millbrook Ave & Ruskin Ave S/S	T1.3	T2.2	T1.4	T2.2	OFF	OFF	T1.3	T2.2	T1.4	T2.2	OFF	OFF	T1.3	T2.2	T1.4	T2.2	OFF	OFF
		1.3.4	Warren Close to Ruskin Ave S/S	T1.3	T2.2	T1.4	T2.2	OFF	OFF	T1.3	T2.2	T1.4	T2.2	OFF	OFF	T1.3	T2.2	T1.4	T2.2	OFF	OFF
		1.3.5	Tomcroft Lane to X851	T1.3	T2.2	T1.4	T2.2	OFF	OFF	T1.3	T2.2	T1.4	T2.2	OFF	OFF	T1.3	T2.2	T1.4	T2.2	OFF	OFF
	SCOTT ROAD	1.4.2	Scott Rd Nearside	OFF	OFF	OFF															
		1.4.3	Stockport Rd Nearside to x865 & Stockport Rd Farside	T1.5	T2.2	T1.5	T2.2	OFF	OFF	T1.5	T2.2	T1.5	T2.2	OFF	OFF	T1.5	T2.2	T1.5	T2.2	OFF	OFF
		1.4.4	Wakeling Rd Farside to X866	T1.5	T2.2	T1.5	T2.2	OFF	OFF	T1.5	T2.2	T1.5	T2.2	OFF	OFF	T1.5	T2.2	T1.5	T2.2	OFF	OFF
	TOWN LANE (NO 52)	1.5.2	Wakeling Rd Nearside to X866	T1.5	T2.2	T1.5	T2.2	OFF	OFF	T1.5	T2.2	T1.5	T2.2	OFF	OFF	T1.5	T2.2	T1.5	T2.2	OFF	OFF
		1.5.3	Town Lane to X471 - Town Ln S/Stn	T1.5	T2.2	T1.5	T2.2	OFF	OFF	T1.5	T2.2	T1.5	T2.2	OFF	OFF	T1.5	T2.2	T1.5	T2.2	OFF	OFF
		1.5.4	Acres St Near Side to Birch Grove S/S	T1.5	T2.2	T1.5	T2.2	OFF	OFF	T1.5	T2.2	T1.5	T2.2	OFF	OFF	T1.5	T2.2	T1.5	T2.2	OFF	OFF
	VICTORIA STREET (DENTON)	1.5.5	Longmeadow Grove	OFF	OFF	OFF															
		1.6.1	Victoria St x222	OFF	OFF	OFF															
1.6.3		Victoria St x132	T2.2	T2.2	OFF	OFF	T2.2	T2.2	OFF	OFF	T2.2	T2.2	OFF	OFF	T2.2	T2.2	OFF	OFF	T2.2	T2.2	
PENDLE ROAD	1.7.3	Pendle to Smith Street - LB X8783	T1.5	T2.2	T1.5	T2.2	OFF	OFF	T1.5	T2.2	T1.5	T2.2	OFF	OFF	T1.5	T2.2	T1.5	T2.2	OFF	OFF	
	1.7.4	Pendle Rd to Stockport rd X952 - Mount Pleasant S/Stn	T2.2	T2.2	OFF	OFF	T2.2	T2.2	OFF	OFF	T2.2	T2.2	OFF	OFF	T2.2	T2.2	OFF	OFF	T2.2	T2.2	
EGREMONT	ELECTRIC HOUSE	2.1.2	Jordan Engineering	OFF	OFF																
		2.1.3	North Rd	T1.5	T2.2	T1.5	T2.2	OFF	OFF	T1.5	T2.2	T1.5	T2.2	OFF	OFF	T1.5	T2.2	T1.5	T2.2	OFF	OFF
		2.1.4	Windrigg Cl	OFF	OFF	OFF															
	FELL VIEW DRIVE	2.1.5	Main St West	OFF	OFF	OFF															
		2.2.2	Fell View Dr Queensgate	T1.5	T1.5	OFF	OFF	T1.5	T1.5												
		2.2.3	Bookwell LB111	T1.3	T2.2	T1.4	T2.2	OFF	OFF	T1.3	T2.2	T1.4	T2.2	OFF	OFF	T1.3	T2.2	T1.4	T2.2	OFF	OFF
		2.2.4	Hagget end LB110	T1.3	T2.2	T1.4	T2.2	OFF	OFF	T1.3	T2.2	T1.4	T2.2	OFF	OFF	T1.3	T2.2	T1.4	T2.2	OFF	OFF
		2.2.5	Greenykes/Dale View Gardens	T1.3	T2.2	T1.4	T2.2	OFF	OFF	T1.3	T2.2	T1.4	T2.2	OFF	OFF	T1.3	T2.2	T1.4	T2.2	OFF	OFF
		2.3.2	Greenmoor Rd LB105	OFF	OFF	OFF															
	SMITHFIELD	2.3.3	Copeland Ave LB104	T2.2	T2.2	OFF	OFF	T2.2	T2.2												
		2.3.4	Smithfield Rd / Howbank Rd	T2.2	T2.2	OFF	OFF	T2.2	T2.2												
		2.3.5	Howbank Rd / Beach Ln	T1.5	T2.2	T1.5	T2.2	OFF	OFF	T1.5	T2.2	T1.5	T2.2	OFF	OFF	T1.5	T2.2	T1.5	T2.2	OFF	OFF
		2.3.6	Gillfoot Rd West	T1.5	T2.2	T1.5	T2.2	OFF	OFF	T1.5	T2.2	T1.5	T2.2	OFF	OFF	T1.5	T2.2	T1.5	T2.2	OFF	OFF
		2.3.7	Howbank Rd West	OFF	OFF	OFF															
		2.3.8	The Crescent	T1.5	T2.2	T1.5	T2.2	OFF	OFF	T1.5	T2.2	T1.5	T2.2	OFF	OFF	T1.5	T2.2	T1.5	T2.2	OFF	OFF
	CROFT TERRACE	2.4.2	South St LB113	T1.5	T1.5	OFF	OFF	T1.5	T1.5												
		2.4.3	Beck Green LB116	T1.5	T1.5	OFF	OFF	T1.5	T1.5												
		2.4.4	Cross Side	OFF	OFF	OFF															
	DRYDENWAY	2.5.2	Chaucer Ave	T1.5	T1.5	OFF	OFF	T1.5	T1.5												
		2.5.3	Milton Place	OFF	OFF	OFF															
		2.5.4	Keats Drive / Spencer Close to LB108	T1.5	T2.2	T1.5	T2.2	OFF	OFF	T1.5	T2.2	T1.5	T2.2	OFF	OFF	T1.5	T2.2	T1.5	T2.2	OFF	OFF
	SHAKESPEARE AVENUE	2.5.5	Croadalla Ave / Coleridge Drive to LB107	T2.2	T2.2	OFF	OFF	T2.2	T2.2												
		2.5.6	Dryden Way to Castlecroft	T1.5	T1.5	OFF	OFF	T1.5	T1.5												
		2.5.7	Infants School	OFF	OFF	OFF															
		2.6.2	Shakespeare Ave Interconnector Castle Croft SS	T1.1	T1.2	OFF	OFF	T1.1	T1.2												
		2.6.3	Tennyson Dr / Shakespeare Ave / Croadalla to LB107	T1.1	T2.2	T1.2	T2.2	OFF	OFF	T1.1	T2.2	T1.2	T2.2	OFF	OFF	T1.1	T2.2	T1.2	T2.2	OFF	OFF
		2.6.4	Southey Dr / Tennyson Dr to LB 108	T1.1	T2.2	T1.2	T2.2	OFF	OFF	T1.1	T2.2	T1.2	T2.2	OFF	OFF	T1.1	T2.2	T1.2	T2.2	OFF	OFF
		2.6.5	Southey Dr/Southey Walk/Orgill Junior School to LB	T1.1	T1.2	OFF	OFF	T1.1	T1.2												
	BRIDGE END IND EST	2.6.6	Wordsworth Cl / Goldsmith Rd	T1.1	T1.2	OFF	OFF	T1.1	T1.2												
		2.6.7	Shakespeare Ave/Wordsworth Cl/Broadfield HSELB138	T1.1	T1.2	OFF	OFF	T1.1	T1.2												
		2.7.2	Industrial Est South	OFF	OFF	OFF															
		2.7.3	Industrial Est North	T1.5	T1.5	OFF	OFF	T1.5	T1.5												
	2.7.4	Cringlewithe SS	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	
GREEN STREET	CAMBERWELL CRESCENT	3.1.2	Nearside Camberwell Crescent North	T1.5	T1.5	OFF	OFF	T1.5	T1.5												
		3.1.3	Farside Camberwell Crescent North & Link Box 502	T1.5	T1.5	OFF	OFF	T1.5	T1.5												
		3.1.4	Farside Camberwell Crescent South & Link Box 499	T2.2	T2.2	OFF	OFF	T2.2	T2.2												
	CAUNCE ROAD	3.1.5	Nearside Camberwell Crescent South	OFF	OFF	OFF															
		3.2.1	Stanley Place towards Platt Ln	T1.5	T1.5	OFF	OFF	T1.5	T1.5												
		3.2.2	LB480 and Quarry Place	OFF	OFF	OFF															
		3.2.4	Wells Place	T1.5	T2.2	T1.5	T2.2	OFF	OFF	T1.5	T2.2	T1.5	T2.2	OFF	OFF	T1.5	T2.2	T1.5	T2.2	OFF	OFF
		3.2.5	Knowles Place	OFF	OFF	OFF															
		3.3.2	Linney Square	T2.2	T2.2	OFF	OFF	T2.2	T2.2												
	LINNEY STREET	3.3.3	Caunce Rd towards Isabella Square	T1.5	T1.5	OFF	OFF	T1.5	T1.5												
		3.3.4	Linney St	OFF	OFF	OFF															
		3.3.5	LB456263 Schofield Ln	T2.2	T2.2	OFF	OFF	T2.2	T2.2												
	MALDON CLOSE	3.3.7	Lorne St	T1.5	T1.5	OFF	OFF	T1.5	T1.5												
		3.4.2	Link Box Shildon Close	T1.3	T2.2	T1.4	T2.2	OFF	OFF	T1.3	T2.2	T1.4	T2.2	OFF	OFF	T1.3	T2.2				

9.13 Test regime: Week 93 – Week 104

	DISTRIBUTION SUBSTATION	CIRCUIT NUMBER	CIRCUIT NAME	WEEK 93	WEEK 94	WEEK 95	WEEK 96	WEEK 97	WEEK 98	WEEK 99	WEEK100	WEEK101	WEEK102	WEEK103	WEEK104		
				24/10/17	31/10/17	07/11/17	14/11/17	21/11/17	28/11/17	05/12/17	12/12/17	19/12/17	26/12/17	02/01/18	09/01/18		
DENTON EAST	CIRCULAR ROAD	1.1.4	LB X125 - Stockport Rd No.350 S/Stn	T1.1	T1.2	OFF	OFF	T1.1	T1.2	T1.1	T1.2	T1.1	T1.2	T1.1	T1.2		
		1.1.5	LB X6076 Foxdenton Walk	T1.1	T2.2	T1.2	OFF	OFF	T1.1	T2.2	T1.2	T1.1	T2.2	T1.2	T1.1	T2.2	
		1.1.6	Birthfield Walk	T1.1	T1.2	OFF	OFF	T1.1	T1.2	T1.1	T1.2	T1.1	T1.2	T1.1	T1.2		
	HOONET WALK	1.2.1	Essington Walk	T1.5	T1.5	OFF	OFF	T1.5									
		1.2.3	LB X6076 - Circular Rd S/Stn		T2.2	OFF	OFF	T2.2					T2.2		T2.2		
		1.3.2	Bottle End / 200kVAr Cap			OFF	OFF										
	KENNEDY WAY	1.3.3	Millbrook Ave & Ruskin Ave S/S	T1.3	T2.2	T1.4	T2.2	OFF	OFF	T1.3	T2.2	T1.4	T2.2	T1.3	T2.2	T1.4	T2.2
		1.3.4	Warren Close to Ruskin Ave S/S	T1.3	T2.2	T1.4	T2.2	OFF	OFF	T1.3	T2.2	T1.4	T2.2	T1.3	T2.2	T1.4	T2.2
		1.3.5	Tomcroft Lane to X851	T1.3	T2.2	T1.4	T2.2	OFF	OFF	T1.3	T2.2	T1.4	T2.2	T1.3	T2.2	T1.4	T2.2
		1.4.2	Scott Rd Nearside			OFF	OFF										
		1.4.3	Stockport Rd Nearside to x865 & Stockport Rd Farside	T1.5	T2.2	T1.5	T2.2	OFF	OFF	T1.5	T2.2	T1.5	T2.2	T1.5	T2.2	T1.5	T2.2
	SCOTT ROAD	1.4.4	Wakeling Rd Farside to X866	T1.5	T2.2	T1.5	T2.2	OFF	OFF	T1.5	T2.2	T1.5	T2.2	T1.5	T2.2	T1.5	T2.2
		1.4.5	Wakeling Rd Nearside to X866		T2.2	T2.2	OFF	OFF		T2.2	T2.2	OFF	OFF		T2.2	T2.2	
		1.5.2	Town Lane to X643	T1.5	T2.2	T1.5	T2.2	OFF	OFF	T1.5	T2.2	T1.5	T2.2	T1.5	T2.2	T1.5	T2.2
		1.5.3	Town Lane to X471 - Town Ln S/Stn	T1.5	T2.2	T1.5	T2.2	OFF	OFF	T1.5	T2.2	T1.5	T2.2	T1.5	T2.2	T1.5	T2.2
		1.5.4	Acre St Near Side to Birch Grove S/S			OFF	OFF										
	VICTORIA STREET (DENTON)	1.5.5	Longmeadow Grove			OFF	OFF										
1.6.1		Victoria St x232			OFF	OFF											
1.6.3		Victoria St x132		T2.2	T2.2	OFF	OFF		T2.2	T2.2	OFF	OFF		T2.2	T2.2		
1.7.3		Pendle to Smith Street - LB X8783	T1.5	T2.2	T1.5	T2.2	OFF	OFF	T1.5	T2.2	T1.5	T2.2	T1.5	T2.2	T1.5	T2.2	
1.7.4		Pendle Rd to Stockport rd X952 - Mount Pleasant S/Stn	T2.2	T2.2	T2.2	OFF	OFF		T2.2	T2.2	OFF	OFF		T2.2	T2.2		
EGREMONT	ELECTRIC HOUSE	2.1.2	Jordan Engineering			OFF	OFF										
		2.1.3	North Rd	T1.5	T2.2	T1.5	T2.2	OFF	OFF	T1.5	T2.2	T1.5	T2.2	T1.5	T2.2		
		2.1.4	Windrigg Cl			OFF	OFF										
		2.1.5	Main St West			OFF	OFF										
		2.1.6	Main St East	T1.5	T1.5	OFF	OFF	T1.5									
	FELL VIEW DRIVE	2.2.2	Fell View Dr/ Queensgate	T1.3	T1.4	OFF	OFF	T1.3	T1.4	T1.3	T1.4	T1.3	T1.4	T1.3	T1.4		
		2.2.3	Bookwell LB111	T1.3	T2.2	T1.4	T2.2	OFF	OFF	T1.3	T2.2	T1.4	T2.2	T1.3	T2.2	T1.4	T2.2
		2.2.4	Hagget end LB110	T1.3	T1.4	OFF	OFF	T1.3	T1.4	T1.3	T1.4	T1.3	T1.4	T1.3	T1.4		
		2.2.5	Greendykes/Dale View Gardens	T1.3	T2.2	T1.4	T2.2	OFF	OFF	T1.3	T2.2	T1.4	T2.2	T1.3	T2.2	T1.4	T2.2
		2.3.2	Greenmoor Rd LB105			OFF	OFF										
	SMITHFIELD	2.3.3	Copeland Ave LB104		T2.2	T2.2	OFF	OFF		T2.2	T2.2	OFF	OFF		T2.2	T2.2	
		2.3.4	Smithfield Rd / Howbank Rd		T2.2	T2.2	OFF	OFF		T2.2	T2.2	OFF	OFF		T2.2	T2.2	
		2.3.5	Howbank Rd / Beach Ln	T1.5	T2.2	T1.5	T2.2	OFF	OFF	T1.5	T2.2	T1.5	T2.2	T1.5	T2.2	T1.5	T2.2
		2.3.6	Gillfoot Rd West	T1.5	T2.2	T1.5	T2.2	OFF	OFF	T1.5	T2.2	T1.5	T2.2	T1.5	T2.2	T1.5	T2.2
		2.3.7	Howbank Rd West			OFF	OFF										
	CROFT TERRACE	2.3.8	The Crescent	T1.5	T2.2	T1.5	T2.2	OFF	OFF	T1.5	T2.2	T1.5	T2.2	T1.5	T2.2	T1.5	T2.2
		2.4.2	South St LB113	T1.5	T1.5	OFF	OFF	T1.5									
		2.4.3	Beck Green LB116	T1.5	T1.5	OFF	OFF	T1.5									
		2.4.4	Cross Side			OFF	OFF										
		2.5.2	Chaucer Ave	T1.5	T1.5	OFF	OFF	T1.5									
	DRYDENWAY	2.5.3	Milton Place			OFF	OFF										
		2.5.4	Keats Drive / Spencer Close to LB108	T1.5	T2.2	T1.5	T2.2	OFF	OFF	T1.5	T2.2	T1.5	T2.2	T1.5	T2.2	T1.5	T2.2
		2.5.5	Croadalla Ave / Coleridge Drive to LB107		T2.2	T2.2	OFF	OFF		T2.2	T2.2	OFF	OFF		T2.2	T2.2	
		2.5.6	Dryden Way to Castlecroft	T1.5	T1.5	OFF	OFF	T1.5									
		2.5.7	Infants School			OFF	OFF										
	SHAKESPEARE AVEUNE	2.6.2	Shakespeare Ave Interconnector Castle Croft SS	T1.1	T1.2	OFF	OFF	T1.1	T1.2	T1.1	T1.2	T1.1	T1.2	T1.1	T1.2		
		2.6.3	Tennyson Dr / Shakespeare Ave/ Croadella to LB107	T1.1	T2.2	T1.2	T2.2	OFF	OFF	T1.1	T2.2	T1.2	T2.2	T1.1	T2.2	T1.2	T2.2
		2.6.4	Southey Dr / Tennyson Dr to LB 108	T1.1	T2.2	T1.2	T2.2	OFF	OFF	T1.1	T2.2	T1.2	T2.2	T1.1	T2.2	T1.2	T2.2
		2.6.5	Southey Dr/Southey Walk/Orgill Junior School to LB	T1.1	T1.2	OFF	OFF	T1.1	T1.2	T1.1	T1.2	T1.1	T1.2	T1.1	T1.2		
		2.6.6	Wordsworth Cl / Goldsmith Rd	T1.1	T1.2	OFF	OFF	T1.1	T1.2	T1.1	T1.2	T1.1	T1.2	T1.1	T1.2		
		2.6.7	Shakespeare Ave/Wordsworth CL/Broadfield HSE/LB138	T1.1	T1.2	OFF	OFF	T1.1	T1.2	T1.1	T1.2	T1.1	T1.2	T1.1	T1.2		
		2.7.2	Industrial Est South			OFF	OFF										
	BRIDGE END IND EST	2.7.3	Industrial Est North	T1.5	T1.5	OFF	OFF	T1.5									
		2.7.4	Cringlewithe SS			OFF	OFF										
						OFF	OFF										
GREEN STREET	CAMBERWELL CRESCENT	3.1.2	Nearside Camberwell Crescent North	T1.5	T1.5	OFF	OFF	T1.5									
		3.1.3	Farside Camberwell Crescent North & Link Box 502	T1.5	T1.5	OFF	OFF	T1.5									
		3.1.4	Farside Camberwell Crescent South & Link Box 499		T2.2	T2.2	OFF	OFF		T2.2	T2.2	OFF	OFF		T2.2	T2.2	
		3.1.5	Nearside Camberwell Crescent South			OFF	OFF										
		3.2.1	Stanley Place towards Platt Ln	T1.5	T1.5	OFF	OFF	T1.5									
	CAUNCE ROAD	3.2.2	LB480 and Quarry Place			OFF	OFF										
		3.2.4	Wells Place	T1.5	T2.2	T1.5	T2.2	OFF	OFF	T1.5	T2.2	T1.5	T2.2	T1.5	T2.2		
		3.2.5	Knowles Place			OFF	OFF										
		3.3.2	Linney Square		T2.2	T2.2	OFF	OFF		T2.2	T2.2	OFF	OFF		T2.2	T2.2	
		3.3.3	Caunce Rd towards Isabella Square	T1.5	T1.5	OFF	OFF	T1.5									
	LINNEY STREET	3.3.4	Linney St			OFF	OFF										
		3.3.5	LB456263 Schofield Ln		T2.2	T2.2	OFF	OFF		T2.2	T2.2	OFF	OFF		T2.2	T2.2	
		3.3.7	Lorne St	T1.5	T1.5	OFF	OFF	T1.5									
		3.4.2	Link Box Shildon Close	T1.3	T2.2	T1.4	T2.2	OFF	OFF	T1.3	T2.2	T1.4	T2.2	T1.3	T2.2	T1.4	T2.2
		3.4.3	Link Box Wilton Ave	T1.3	T1.4	OFF	OFF	T1.3	T1.4	T1.3	T1.4	T1.3	T1.4	T1.3	T1.4		
	MALDON CLOSE	3.4.4	Link Box Camberwell Cres	T1.3	T2.2	T1.4	T2.2	OFF	OFF	T1.3	T2.2	T1.4	T2.2	T1.3	T2.2	T1.4	T2.2
		3.4.5	Link Box Bamford Dr	T1.3	T2.2	T1.4	T2.2	OFF	OFF	T1.3	T2.2	T1.4	T2.2	T1.3	T2.2	T1.4	T2.2
		3.4.6	New School	T1.3	T1.4	OFF	OFF	T1.3	T1.4	T1.3	T1.4	T1.3	T1.4	T1.3	T1.4		
		3.5.2	LB535 Manchester Rd	T1.5	T1.5	OFF	OFF	T1.5									
		3.5.4	Dobson Park Way			OFF	OFF										
	PETTICOAT LANE	3.6.2	Thirlmere Ave	T1.5	T1.5	OFF	OFF	T1.5									
		3.6.3	Link Box 528 Windermere Rd	T1.5	T2.2	T1.5	T2.2	OFF	OFF	T1.5	T2.2	T1.5	T2.2	T1.5	T2.2	T1.5	T2.2
		3.6.4	Link Box 536 Kendal Rd	T1.5	T1.5	OFF	OFF	T1.5									
		3.6.5	Coniston Ave/Derwent Ave		T2.2	T2.2	OFF	OFF		T2.2	T2.2	OFF	OFF		T2.2	T2.2	
		3.6.6	Haweswater Ave			OFF	OFF										
	VAUXHALL ROAD	3.7.2	Hackworth Cl (RR30) S/Stn	T1.1	T2.2	T1.2	T2.2	OFF	OFF	T1.1	T2.2	T1.2	T2.2	T1.1	T2.2	T1.2	T2.2
		3.7.3	Shopping Precinct	T1.1	T1.2	OFF	OFF	T1.1	T1.2	T1.1	T1.2	T1.1	T1.2	T1.1	T1.2		
		3.7.4	Shopping Precinct	T1.1	T1.2	OFF	OFF	T1.1	T1.2	T1.1	T1.2	T1.1	T1.2	T1.1	T1.2		
		3.7.5	School	T1.1	T1.2	OFF	OFF	T1.1	T1.2	T1.1	T1.2	T1.1	T1.2	T1.1	T1.2		
		3.7.6	Vauxhall Rd	T1.1	T1.2	OFF	OFF	T1.1	T1.2	T1.1	T1.2	T1.1	T1.2	T1.1	T1.2		
HINDLEY GREEN	ASHBOURNE AVENUE	4.1.2	Claremont Ave (LB 581)	T1.1	T1.2	OFF	OFF	T1.1	T1.2	T1.1	T1.2	T1.1	T1.2	T1.1	T1.2		
		4.1.4	Nearside Lancaster Rd to LB599 // Hollins Ln S/Stn	T1.1	T2.2	T1.2	T2.2	OFF	OFF	T1.1	T2.2	T1.2	T2.2	T1.1	T2.2	T1.2	T2.2
		4.1.5	Farside Lancaster Rd to LB598 // Walmer Rd S/Stn	T1.1	T2.2	T1.2	T2.2	OFF	OFF	T1.1	T2.2	T1.2	T2.2	T1.1	T2.2	T1.2	T2.2
		4.1.6	Farside Ashbourne Ave to LB576A // Borsdane Ave S/Stn	T1.1	T2.2	T1.2	T2.2	OFF	OFF	T1.1	T2.2	T1.2	T2.2	T1.1	T2.2	T1.2	T2.2
		4.1.7	Nearside Ashbourne Ave to LBx7474 // LCC School Hindley S/Stn														