Chesterfield GSP

Network Development Report – East Midlands

May 2024

Electricity Distribution

nationalgrid

Contents

Chesterfield 132 kV

1. Network Overview

Chesterfield Grid Supply Point (GSP) feeds nine Bulk Supply Points (BSPs) in National Grid Electricity Distribution's (NGED's) East Midlands licence area in and around Derbyshire and Nottinghamshire. These nine BSPs are: Alfreton, Annesley, Chesterfield, Clipstone, Goitside, Mansfield, Pinxton, Staveley, and Whitwell.

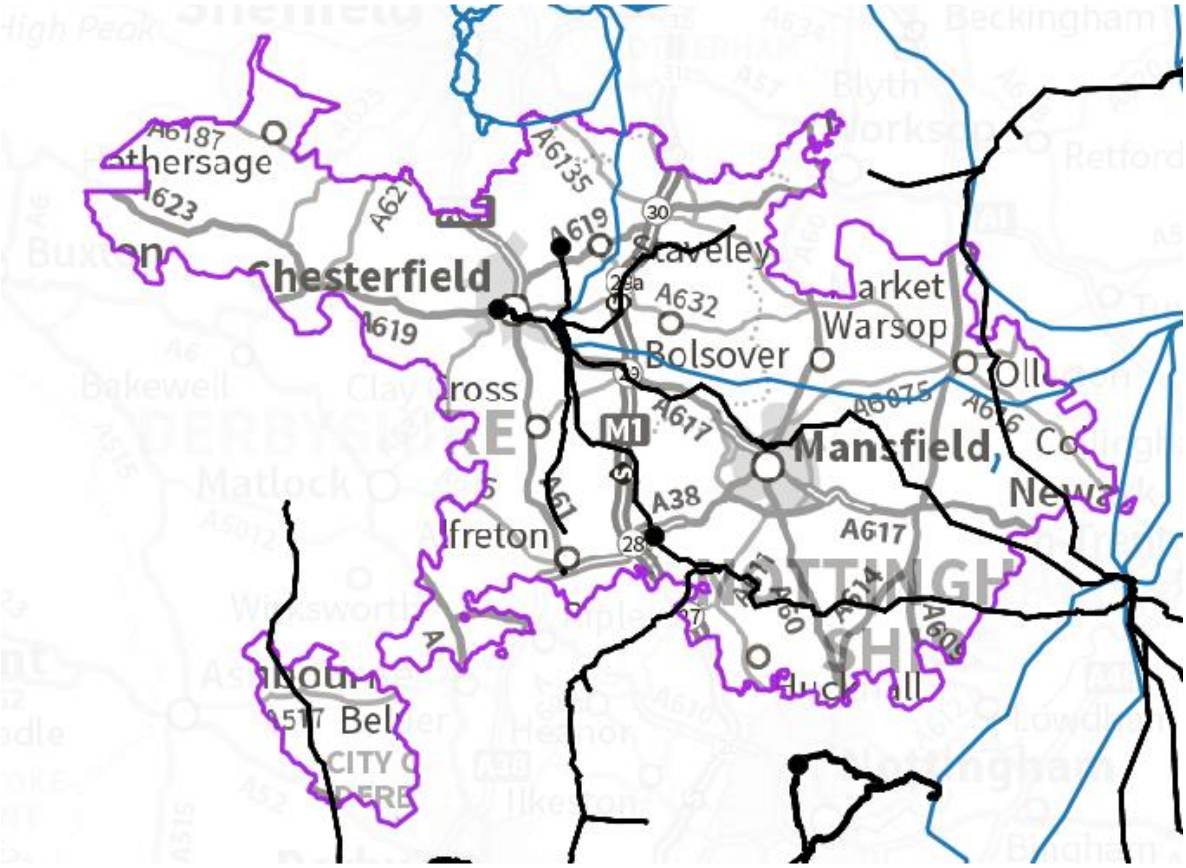

Figure 1.1 Chesterfield GSP geographic network coverage

This report discusses all existing and future network constraints over a 0-10 year horizon identified on the 132 kV network supplied from Chesterfield GSP. This uses the methodology outlined in the Network Development Plan Methodology Report with Network Operability Modelling applied as outlined below.

For the purposes of this analysis the NGED Best View Distribution Future Energy Scenario (DFES) has been used to study the years 2022 (baseline), 2028 and 2034, with consideration given to how proposals could change under the other scenarios. Five representative days have been studied across the four seasons: Winter Peak Demand, Intermediate Warm Peak Demand, Intermediate Cool Peak Demand, Summer Peak Demand and Summer Peak Generation.

1.1 Network Topology

Chesterfield GSP is a 275/132 kV substation comprising four 275/132 kV, 240 MVA Super Grid Transformers (SGTs). The 132 kV busbar configuration is a standard wrap-around, with four busbar sections. Chesterfield main 1 and reserve 1 busbars are rated at 1200 A, whist main 2 and reserve 2 are rated at 2000 A. The site is normally run as a 2+2 arrangement, with bus-section circuit breakers closed and bus-coupler circuit breakers open. BSPs are split between the two halves of Chesterfield 132 kV such that during certain running arrangement, opening the bus-section circuit breakers creates two separate networks. Running the site with more than two SGTs on a busbar is not possible currently due to fault level constraints at Chesterfield 132 kV.

Chesterfield GSP has 132 kV interconnection with Staythorpe GSP via Clipstone BSP, normally open on 132 kV circuit breakers at Staythorpe, and via Annesley BSP, normally open on 132 kV isolators at Annesley BSP and 132 kV circuit breakers at Staythorpe GSP. Chesterfield GSP is also interconnected with Willington GSP via Annesley BSP.

Chesterfield BSP is situated on the same site and comprises two 132/33 kV Grid Transformers (GTs). Alfreton, Goitside, Staveley, and Whitwell are all 132/33 kV BSPs supplied from Chesterfield GSP via dedicated, radial 132 kV dual circuits which connect to a pair of GTs at each BSP.

Mansfield and Clipstone BSP share two 132 kV circuits from Chesterfield GSP (the CS route). A 132 kV switching station is present at Mansfield BSP which facilitates the transfer of Clipstone BSP into Staythorpe GSP.

Pinxton 132/11 kV and Annesley 132/33 kV BSPs share a 132 kV double circuit from Chesterfield GSP (the HR route). This section of 132 kV network is normally run closed at 132 kV at Annesley BSP, creating a ring arrangement. Annesley 132 kV is configured to enable 132 kV transfers to either Staythorpe GSP or Willington GSP (via Heanor BSP / Loscoe Switching Station / Stanton BSP / Spondon BSP).

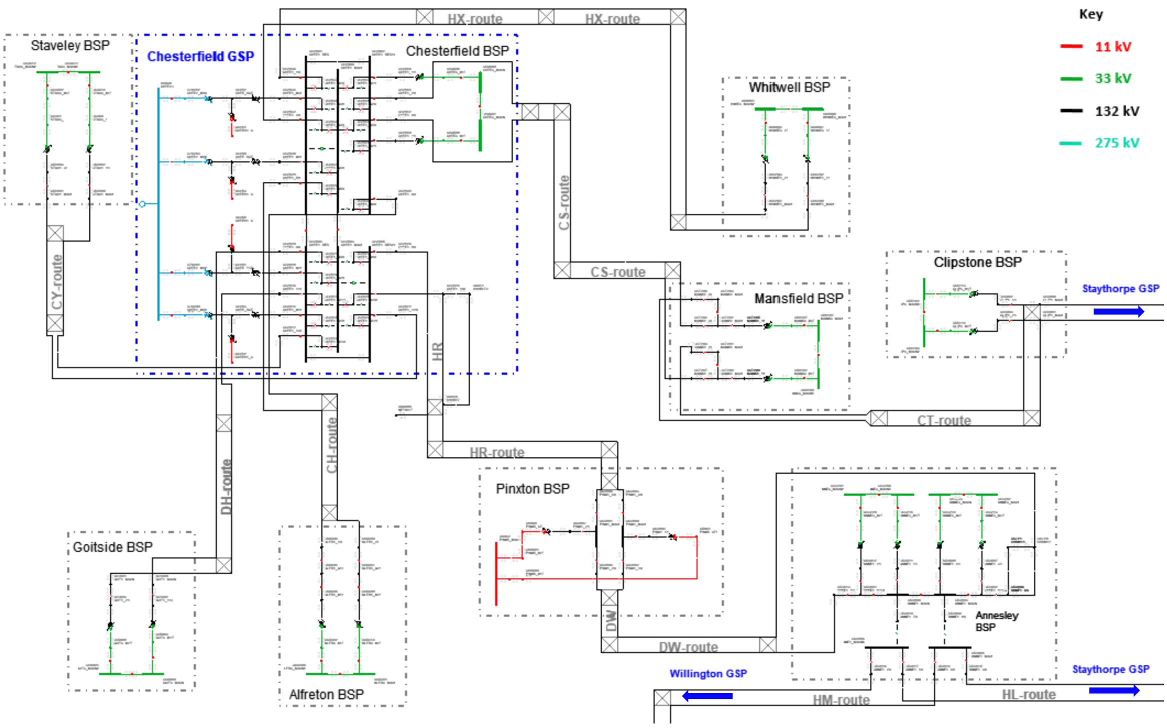

Figure 1.1.1 Chesterfield 132 kV network single line diagram

1.2 Network Operability Modelling

The following network automation and manual switching schemes have been modelled in the analysis of this area, aligning to how the network is currently operated.

- Arranged outages on the 132 kV busbars at Chesterfield GSP are modelled such that circuits are secured onto in service busbars.
- Under an arranged outage on the Chesterfield 132 kV main 1 or reserve 1 busbar, the bus section circuit breakers (120 and 160) are opened and bus coupler circuit breaker 230 is closed to maintain a 2+2 arrangement. The parallels between Staveley and Whitwell are split by opening the 11 kV bus section circuit breakers at Halfway and Westhorpe primaries. Clipstone BSP is transferred into Staythorpe GSP to reduce network risk. To release capacity in Staythorpe, the transfer of Checkerhouse BSP from Staythorpe GSP to West Burton GSP was also modelled.
- Under an arranged outage on Chesterfield 132 kV main 2 or reserve 2 busbar, the bus section circuit breakers (120 and 160) are opened and bus coupler circuit breaker 130 is closed to maintain a 2+2 arrangement. The parallels between Staveley and Whitwell are split by opening the 11 kV bus section circuit breakers at Halfway and Westhorpe primaries. Annesley BSP is transferred into Staythorpe GSP to reduce network risk.
- For arranged outages on either bus section circuit breaker at Chesterfield 132 kV (120 or 160), both bus coupler circuit breakers (130 and 230) are closed to maintain a 2+2 arrangement. The parallels between Staveley and Whitwell are split by opening the 11 kV bus section circuit breakers at Halfway and Westhorpe primaries.
- For arranged outages on the 132 kV circuits between Chesterfield GSP and Clipstone BSP, Clipstone BSP is transferred into Staythorpe GSP to reduce network risk. To release capacity in Staythorpe, the transfer of Checkerhouse BSP from Staythorpe GSP to West Burton GSP was also modelled.
- For arranged outages on the 132 kV circuits between Chesterfield GSP and Annesley BSP, Annesley BSP is transferred into Staythorpe GSP to reduce network risk.
- The 33 kV and 11 kV networks downstream of the BSPs supplied from Chesterfield GSP are split for arranged outages on the 33 kV bus section circuit breakers (see relevant 33 kV network reports for more details).
- For the loss of an infeed to a transformer at any of the BSPs fed from Chesterfield GSP under arranged outages, the lower voltage side CB is opened to prevent back-energisation.

2. Network Constraints and Solution Options

2.1 Summary of Network Constraints

The following constraints were identified for the Best View Scenario, for which mitigation options will be discussed:

- The 132 kV busbars at Chesterfield GSP overload by 2028, following a fault on main 1. This overload is exacerbated if the fault happens during a planned outage on certain 132 kV circuits.
- The SGTs at Chesterfield GSP are expected to overload under certain outage scenarios.

2.2 Chesterfield GSP 132 kV busbar overloads

Constraint Overview

Generation Demand

The table below outlines the nature of the network constraints identified in the network analysis.

Table 2.2.1 constraint(s) and conditions under which constraint(s) occur

Constraint	N-1 Condition	Subsequent N-2 Condition	First studied year constraint is observed in each season under Best View			
			Winter	Int Cool	Int Warm	Summer
Chesterfield 132 kV reserve 1 busbar overloads	Fault on Chesterfield main 1	None	2028	2028	2028	2034

Uncertainty under other Distribution Future Energy Scenarios: This constraint is exacerbated most significantly under the Leading the Way and Consumer Transformation scenarios. Under Falling Short and System Transformation, the constraint is still present by 2034.

Solution Options

A list of each of the options considered for this constraint is given below.

Table 2.2.2 solution options to solve constraint(s)

Solution Options	Description	Solves Constraint	Wider Benefit	Potential to be cost effective	Viable or Discounted
0	No Intervention	×	×	×	**Discounted**
Reinforcement					
1	Reinforce the 132 kV busbars on Chesterfield side 1	✓	×	✓	**Viable**
2	Reconfigure the 132 kV bays distribution at Chesterfield GSP	✓	×	×	**Discounted**
Operational Mitigation					
3	Transfer Clipstone BSP from Chesterfield GSP to Staythorpe GSP permanently	×	✓	✓	**Discounted**
4	Transfer Clipstone and Mansfield BSPs from Chesterfield GSP to Staythorpe GSP permanently	✓	✓	×	**Viable**
Flexibility services					
5	Procure flexibility at Alfreton, Chesterfield, Clipstone, Mansfield, and Whitwell BSPs	✓	×	✓	**Viable**

Solution Development

These options have been assessed on their technical viability and their likely cost-effectiveness pending a full Cost Benefit Analysis (CBA). This CBA will be subsequently carried out by the DNO to determine the optimal reinforcement solution, which will then be tested against market provided flexibility by the DSO as part of the Distribution Network Options Assessment (DNOA) process.

Option 1 – Reinforce the 132 kV busbars on Chesterfield side 1

Viable

Capacity released for constraint(s) considered: approximately 183 MVA

New limiting factor for constraint(s) considered: SGT capacity

Detailed description: Uprating the 132 kV busbars on Chesterfield main 1 and reserve 1 to at least the rating of main 2 and reserve 2 (2000 A) will increase the busbar capacity from the existing 274 MVA to 457 MVA. This new rating will be able to support the expected demand across all the relevant BSPs under both fault and planned outage conditions, and will also reduce risks by aligning the ratings across the entire 132 kV site.

Option 2 – Reconfigure the 132 kV bays distribution at Chesterfield GSP

Discounted

Capacity released for constraint(s) considered: Dependant on arrangement

New limiting factor for constraint(s) considered: As before

Detailed description: Another option of off-loading the busbars is to re-arrange the 132 kV feeders in order to minimise the demand on this busbar section. By moving the smaller BSPs onto this section, the potential overload can be avoided. The disadvantages of this option are:

- Moving more demand on one side creates imbalances, which results in additional complexities under certain outage conditions, such as when the site is split between side 1 and 2.
- As demand keeps growing, even the smaller BSPs would eventually increase, which will result in power flows beyond the current 132 kV busbar ratings, meaning this will not be a long term solution.
- The procedure of moving 132 kV circuits across to different bays will likely involve substantial costs and timescales, not only on the 132 kV circuits, but also on the 132 kV bays as some may not be rated appropriately.
- Protection modifications will also likely be required for any changes in feeding arrangements.

Due to all the above challenges, and the fact that this will not be a long term solution, this option has been discounted.

Option 3 – Transfer Clipstone BSP from Chesterfield GSP to Staythorpe GSP permanently

Discounted

Capacity released for constraint(s) considered: Clipstone BSP demand

New limiting factor for constraint(s) considered: As before

Detailed description: In order to bring the loading on the busbars within capacity, one option would be to transfer sufficient demand out of this section. The BSPs affecting this constraint are Chesterfield, Mansfield, Clipstone, Alfreton, and Whitwell. One of the two potential transfers is the moving of Clipstone permanently into Staythorpe GSP. The other is discussed in Option 4 below, and involves moving both Mansfield and Clipstone BSPs.

All of Clipstone BSP could be transferred into Staythorpe GSP by moving the normal open points at Mansfield 132 kV. As part of this permanent transfer, all generation downstream of Clipstone BSP, alongside relevant 132 kV connections, would need to be accommodated without detrimental impact on customers. This transfer would not be possible in the short term due to the SGT constraint seen at Staythorpe (which is discussed in the Staythorpe 132 kV report).

This option has been discounted as it is anticipated that by 2034 the remaining demand, excluding Clipstone BSP, would still cause the overloading of the busbars, meaning that this will not be a long term solution.

Option 4 – Transfer Clipstone and Mansfield BSPs from Chesterfield GSP to Staythorpe GSP permanently

Capacity released for constraint(s) considered: The demand of Clipstone and Mansfield BSPs

Viable

New limiting factor for constraint(s) considered: As before

Detailed description: As discussed in Option 3 above, the only other option to transfer demand from the relevant section of network without the need for new 132 kV circuits is to move both Mansfield and Clipstone BSPs into Staythorpe GSP, by moving the normal open point on the 132 kV circuit breakers at Chesterfield GSP. A future alternative would be to only transfer part of Mansfield BSP, should 132/11 kV transformers be installed at Mansfield BSP as part of the local reinforcement scheme (see the Annesley / Clipstone / Mansfield 33 kV report for more details on the constraints and solutions for Mansfield BSP).

The 132 kV circuits from Staythorpe GSP to Clipstone BSP will not be capable of supporting the full demand of both Clipstone and Mansfield BSPs, therefore reinforcement works would be required to upgrade these circuits, which are approximately 20 km long. Staythorpe GSP will also need to have sufficient capacity for the new demand and generation downstream of both BSPs, as well as any applicable 132 kV connections. This is currently not the case as noted in Option 3 and discussed in more detail in the Staythorpe 132 kV report, but could be an option in the longer term. The demand at Mansfield BSP is expected to grow considerably, therefore the 132 kV circuit reinforcement will likely involve a full re-build of towers in order to support large conductors.

If, however, only Mansfield 132/11 kV demand were to be transferred, this will reduce the capacity requirements of the Staythorpe to Clipstone 132 kV circuits.

Option 5 – Procure flexibility at Alfreton, Chesterfield, Clipstone, Mansfield, and Whitwell BSPs

Viable

Flexibility service type: Generation turn up/demand turn down.

Detailed description: Flexibility services could be procured to alleviate the projected overloads on the 132 kV busbars at Chesterfield GSP. The viability of utilising flexibility will be further investigated as part of the DNOA process.

Solution Recommendation

The optimal, long term reinforcement solution recommendation for the 132 kV busbar overloads at Chesterfield GSP is to upgrade the busbars to at least the rating on the other half of the 132 kV compound. Any transfer options are subject to further reinforcement works and assessment, especially since moving significant demand between GSPs has wider implications on the system. Transferring part of Mansfield BSP would be subject to the completion of further reinforcement works at Mansfield BSP, and additional reinforcement works on the 20 km of 132 kV circuits between Staythorpe GSP and Clipstone BSP. This can be explored at a later stage, once the Mansfield BSP works are complete, should there be a need to further off-load Chesterfield GSP.

2.3 Chesterfield GSP SGT overloads

Constraint Overview

Generation | **Demand**

The table below outlines the nature of the network constraints identified in the network analysis.

Table 2.3.1 constraint(s) and conditions under which constraint(s) occur

Constraint	N-1 Condition	Subsequent N-2 Condition	First studied year constraint is observed in each season under Best View			
			Winter	Int Cool	Int Warm	Summer
Chesterfield SGTs overload	Arranged or fault outage on other SGTs and/or busbars	None	2034	2034	2034	2034
Chesterfield SGTs overload	Various arranged outages on circuits and busbars	Fault on an SGT or 132 kV busbar	2028	2028	2028	2028

Uncertainty under other Distribution Future Energy Scenarios: The N-2 constraint has also been highlighted by National Grid Electricity Transmission (NGET) and National Grid ESO as part of the latest compliance assessment, prior to 2028, which means that intervention is required regardless of scenario. This is however further exacerbated under higher growth scenarios for future years (Leading the Way and Consumer Transformation). As demand grows further, an N-1 constraint appears on the existing four-SGT configuration.

Solution Options

A list of each of the options considered for this constraint is given below.

All below reinforcement options are being discussed with NGET and National Grid ESO (NGESO) to ensure the optimal solution for the whole system (considering both the distribution and transmission systems) is taken forward. This may involve a modification application to be submitted once a decision has been made, or amendments to existing accepted offers as part of the Statement of Works process.

Table 2.3.2 solution options to solve constraint(s)

Solution Options	Description	Solves Constraint	Wider Benefit	Potential to be cost effective	Viable or Discounted
0	No Intervention	×	×	×	Discounted
Reinforcement					
1	Replace existing four SGTs with 460 MVA units	✓	×	✓	Viable
2	Install two additional 240 MVA SGTs, by extending the existing 132 kV compound	✓	✓	×	Viable
3	Install two additional 240 MVA SGTs, by 132 kV re-configuration	✓	×	×	Discounted
4	Establish a new GSP nearby with two 240 MVA SGTs	✓	✓	✓	Viable
5	Establish a new GSP between Willington and Chesterfield	✓	✓	✓	Viable
Operational Mitigation					
6	Transfer BSPs out of the Chesterfield GSP group permanently	✓	×	✓	Viable
Flexibility services					
7	Procure flexibility at Chesterfield GSP	✓	×	✓	Viable

Solution Development

These options have been assessed on their technical viability and their likely cost-effectiveness pending a full CBA. This CBA will be subsequently carried out by the DNO to determine the optimal reinforcement solution, which will then be tested against market provided flexibility by the DSO as part of the DNOA process.

Option 1 – Replace existing four SGTs with 460 MVA units

Capacity released for constraint(s) considered: approximately 660 MVA (N-1) **Viable**

New limiting factor for constraint(s) considered: Fault levels at 132 kV and downstream

Detailed description: Uprating all four SGTs with 460 MVA units would release significant thermal capacity at Chesterfield GSP, whilst maintaining the same number of transformers on the transmission site. However, Chesterfield GSP is already near fault level capacity, and following further assessment it was concluded that the distribution network cannot accommodate the new, increased fault levels which will result from the installation of the 460 MVA SGTs. This is particularly severe at Chesterfield BSP, due to the proximity to the GSP.

Unless NGET / NGESO can propose and install higher impedance units, these current units will not be suitable for Chesterfield GSP, and potentially many other GSPs as well, due to the significantly lower impedance.

It is anticipated that the 132 kV re-build of Chesterfield GSP will still be required, even with higher impedance units, and therefore additional land to facilitate these works will be required, most likely south of the existing 132 kV compound.

Option 2 – Install two additional 240 MVA SGTs, by extending the existing 132 kV compound

Capacity released for constraint(s) considered: approximately 480 MVA (N-1) **Viable**

New limiting factor for constraint(s) considered: Fault levels at 132 kV and downstream

Detailed description: Installing two 240 MVA SGTs and running the site as 3+3 (no more than 3 SGTs on any busbar) creates additional capacity on site. Building this as a single, large GSP with the requirement to run 3 SGTs on a single busbar is increasing the fault levels beyond the current ratings, and therefore fault level reinforcement works will be required in order to accommodate this arrangement. The 132 kV infrastructure at Chesterfield 132 kV is the limiting factor on site. In order to uprate it, a full re-build of the 132 kV infrastructure will be required. Further assessment is required to determine if running 3 SGTs on a solid 132kV busbar is acceptable, which will depend on the proposed 400 kV arrangement and fault infeeds from the transmission network.

In addition to the fault level limitations and works, the extension comprising new 132 kV busbar sections and bays will require additional land, alongside re-configuration of the existing wrap-around arrangement.

Long term, as the site is adding a new 132 kV section on one side, the other two sections will likely be limited in terms of further extension. Furthermore, adding more SGTs in the future will mean further extension and re-configuration works, most likely separating the site into two separate GSPs.

Option 3 – Install two additional 240 MVA SGTs, by 132 kV re-configuration

Capacity released for constraint(s) considered: approximately 480 MVA (N-1)

Discounted

New limiting factor for constraint(s) considered: Fault levels at 132 kV and downstream and operational complexity

Detailed description: This option aimed to minimise the space requirements by utilising existing land only, subject to full design and delivery considerations on clearances. A re-configuration of the wrap-around 132 kV busbars to a six section arrangement with four new 132 kV bays could be accommodated within the same land. However, there are still challenges with space on one side, and it is anticipated that at least one building will require relocation. Savings on space in this manner will make use of all remaining space and will prevent any further extension of the 132 kV compound without further re-configuration works.

However, it is anticipated that this option will require a 2+3 running arrangement under outage conditions, which means that, as with option 2, the increased fault levels on site will trigger a full re-build of the 132 kV substation and more land will still be needed.

Aside from the space and fault level reinforcement requirements, this option is also non-standard and creates additional operational complexity, which increases safety and security risks, and probability of operational errors.

Due to all the above challenges and issues, this option has been discounted.

Option 4 – Establish a new GSP nearby with two 240 MVA SGTs

Capacity released for constraint(s) considered: up to 240 MVA at the new GSP and, at the existing GSP, the demand of the BSPs that are transferred across

Viable

New limiting factor for constraint(s) considered: As before for the existing Chesterfield GSP and the new SGTs for the new GSP

Detailed description: Installing two 240 MVA SGTs at a separate GSP nearby and moving several BSPs to the new site would release capacity at Chesterfield GSP by off-loading the current four SGTs. The running arrangement of the existing site would remain as 2+2, keeping the fault levels lower. 132 kV interconnection between the two GSP would support under certain outages, particularly restoration, as required. Interconnection can be utilised as long as no busbar will have three SGTs connected at any one point in time.

Due to wider transmission works of upgrading the existing 275 kV network to 400 kV, the existing 275 / 132 kV SGTs would be replaced, and the fault infeed into the distribution network will increase. Depending on how the 400 kV network is configured, and the exact specification of the new 400 / 132 kV SGTs, it is highly likely that the existing 132 kV site would still require a re-build, if not immediately, then shortly after, as the already low fault level headroom will be reduced further.

As a result, it is proposed to undertake the entire scope of 132 kV works within a new 132 kV compound. New land will be require for the new GSP site, near the existing site, to minimise the 132 kV circuit transfer works. The delivery of the new site would be undertaken off-line, independent of the current site, which minimises outages on the network. Outages will only be required when transferring circuits across.

The design of the new site would account for future expansion. As this will be a new site, it is anticipated that this can be achieved without significant challenges, subject to land size.

Option 5 – Establish a new GSP between Willington and Chesterfield

Capacity released for constraint(s) considered: Dependant on transfers **Viable**

New limiting factor for constraint(s) considered: As before

Detailed description: Establishing a new GSP located geographically between Willington and Chesterfield would benefit the wider network, including Chesterfield GSP. Should a new GSP be constructed in this area, the following transfers can be considered, which will remove load from Chesterfield GSP:

- Annesley BSP: Half of Annesley BSP could potentially be transferred into the new GSP. This will require a fourth GT at Annesley to separate the site into two substations (the proposed reconfiguration of Annesley BSP outlined in the Annesley / Mansfield / Clipstone 33 kV report is set up to facilitate this). The remaining two GTs could remain supplied from Chesterfield GSP, or transferred into Staythorpe GSP if possible.

- Clipstone BSP: If Staythorpe GSP can accommodate additional demand, especially since a new GSP would eliminate the need to transfer Heanor BSP into Staythorpe GSP, Clipstone BSP could be permanently transferred into Staythorpe GSP by opening 132 kV circuit breakers at Mansfield BSP and closing the existing normally open points at Staythorpe GSP. All the associated generation from Clipstone would need to be accommodated as well for this transfer, along with any relevant 132 kV connection.

- Alfreton BSP: Another potential transfer would be Alfreton BSP. New 132 kV circuits would be required (the length of which would depend on the location of the new GSP.

A full extensive network analysis is required to understand the entire knock-on effect of transferring demand across GSPs. Depending on how much demand can be transferred out of Chesterfield GSP, further works may still be required to accommodate the load growth of the remaining BSPs. Additionally, as described in Option 4, 132 kV re-build works due to the wider 400 kV transmission upgrades will likely still be required.

Option 6 – Transfer BSPs out of the Chesterfield GSP group permanently

Capacity released for constraint(s) considered: Dependent on transfers **Viable**

New limiting factor for constraint(s) considered: As before

Detailed description: Some of the transfers mention in Option 5 could be investigated, even without considering a new GSP. However, all possible transfers are into Staythorpe GSP, therefore it is less likely that some, or any of them, will be suitable without further reinforcement works at Staythorpe GSP, especially since Heanor BSP is currently planned for transfer into Staythorpe GSP.

- Annesley BSP: Half of Annesley BSP could potentially be transferred into Staythorpe GSP, subject to the installation of a new 132/33 kV GT at Annesley. However, this will likely require 132 kV circuit works, alongside further GSP reinforcement works at Staythorpe GSP (options for which are discussed in the Staythorpe 132 kV report). The transfer may not be possible, or at least without significant 132 kV reinforcement works, if Heanor BSP is transferred into Staythorpe GSP as well, as they would share a single double circuit. The 132 kV circuits between Staythorpe and Annesley are over 30 km in length, so reinforcing them is unlikely to be economical.

- Clipstone BSP: All of Clipstone BSP could be transferred into Staythorpe GSP by moving the normal open points at Mansfield 132 kV. As part of this permanent transfer, all generation downstream of Clipstone BSP, alongside all relevant 132 kV connections, would need to be accommodated without detrimental impact on customers.

Additionally, as described in Option 4, 132 kV re-build works due to the wider 400 kV transmission upgrades will likely still be required.

Option 7 – Procure flexibility under Chesterfield GSP

Flexibility service type: Generation turn up/demand turn down.

Viable

Detailed description: Flexibility services could be procured to alleviate the projected overloads on the SGTs at Chesterfield GSP. However, the wider transmission works of upgrading the existing 275 kV network to 400 kV and replacing the existing SGTs with new 400 / 132 kV SGTs will take place regardless of NGED's general growth or new connections triggers for reinforcement. These works will most likely cause fault level constraints on the distribution network, which will still trigger the 132 kV re-build of the site as a minimum. The viability of utilising flexibility will be further investigated as part of the DNOA process.

Solution Recommendation

The above viable solutions are being discussed and further assessed across transmission and distribution, to ensure the optimal, long term reinforcement solution is being progressed. On the distribution side, the long term solution with minimal disruption is to build a new 132 kV compound comprising of two GSPs, as described in Option 4. The new, two-SGT GSP would be designed to allow for future expansion, should demand keep increasing in the area beyond the additional capacity created by this solution, subject to available land. Increasing capacity in this manner will also reduce curtailment of generation downstream of Chesterfield GSP.

A new GSP in the area between Chesterfield and Willington would also support Chesterfield GSP, should this go ahead for wider network and system benefit. However, this may require further 132 kV circuit works on the distribution network, and transmission works at Staythorpe GSP.

DSO | nationalgrid electricity distribution

Registered Office: Avonbank, Feeder Road, Bristol BS2 0TB
nationalgrid.co.uk

Contains OS data © Crown copyright and database right 2024

© National Grid 2024