Service Target Performance Incentive Scheme – Amendment Proposal

May 2012

SP AusNet
A member of Singapore Power Group

About SP AusNet

SP AusNet is a major energy network business that owns and operates key regulated electricity transmission and electricity and gas distribution assets located in Victoria, Australia. These assets include:

- A gas distribution network delivering gas to approximately 605,000 customer supply points in an area of more than 60,000 square kilometres in central and western Victoria.
- A 6,500 kilometre electricity transmission network indirectly servicing all electricity consumers across Victoria;
- An electricity distribution network delivering electricity to approximately 640,000 customer connection points in an area of more than 80,000 square kilometres of eastern Victoria; and

SP AusNet's vision is to provide customers with superior network and energy solutions. SP AusNet is committed to the following corporate values:

- Safety: to work together safely. Protect and respect our community and our people.
- Passion: to bring energy and excitement to what we do. Be innovative by continually applying creative solutions to problems.
- Teamwork: to support, respect and trust each other. Continually learn and share ideas and knowledge.
- Integrity: to act with honesty and to practise the highest ethical standards.
- Excellence: to take pride and ownership in what we do. Deliver results and continually strive for the highest quality.

For more information visit: www.sp-ausnet.com.au.

Contact

This document is the responsibility of the Networks Strategy and Development Division, SP AusNet. Please contact the officer below with any inquiries.

Katie Yates

Regulatory Economist

Networks Strategy and Development Division

SP AusNet

Level 31, 2 Southbank Boulevard

Melbourne Victoria 3006

Ph: (03) 9695 6622

Executive Summary

SP AusNet is seeking to make amendments to the performance incentive schemes that will apply to its Victorian Transmission network for the next regulatory period.

In the main, the amendments reflect a response to the commencement of the Market Impact Parameter, a desire to rebalance the scheme, and strengthen its incentive properties.

The box below summarises the changes proposed to SP AusNet's STPIS definitions.

Parameter 1 – Transmission Circuit Availability

Option A – preferred (requiring closure of AIS)

Exclude 'MIP' assets
Include Connection assets
Capture features of the AIS – introduce category for 'reverse peaking assets' and three categories for asset criticality.
Increase revenue at risk to 1.5%

Option B - alternative

Exclude all shared-network assets
Include Connection assets
Measure availability at peak and intermediate peak only

Parameter 2 – Loss of Supply Event Frequency

No change

Parameter 3 – Average Outage Duration

Cap on individual events equal to 48 hours

Parameter 4 – Market Impact

Increase revenue at risk to 3.5%

The overall effect of the changes proposed in this submission is to broaden the coverage of assets subject to performance incentives, remove conflicts between STPIS parameters, and to strengthen incentives.

This is consistent with the National Electricity Objective as the incentive package promotes efficient operation of the transmission network and aligns the TNSPs interests with the long term interests of consumers.

1 Introduction

This submission seeks to make amendments to the Service Target Performance Incentive Scheme (STPIS) as it will apply to SP AusNet in the next regulatory period, commencing 1 April 2014.

SP AusNet considers the amendments to the Scheme proposed in this submission would result in a scheme that better aligns with the STPIS principles set out in the National Electricity Rules, the objectives of the STPIS outlined in the AER's guidelines for the scheme[1] and the National Electricity Objective outlined in the National Electricity Law.

1.1 Proposal Requirements

Section 2.3 of the STPIS guidelines sets out the requirements for making amendments to STPIS parameters. Clause 2.3(d) of the STPIS Guidelines states that a Transmission Network Service Provider (TNSP) seeking to add, remove or vary any of the scheme's parameters must submit its proposed amendments at least 22 months before its next regulatory period commences.

Clause 2.3(e) of the Guidelines states:

> *A proposal by a TNSP to amend this scheme to add or vary a parameter or vary the definition of an existing parameter must:*
>
> *(1) Demonstrate how the proposed amendment is consistent with the objectives in clause 1.4 of this scheme.*
>
> *(2) Provide information and quantitative data on its performance history of at least the most recent three to five years as measured by its proposed parameter, and*
>
> *(3) Where this performance history information is not available, provide an appropriate benchmark or methodology to set values for the proposed parameter.*

The details of the proposed amendments are set out in Sections 2.1 and 2.2 of this submission. Section 2.3 outlines why these changes to the STPIS are consistent with the objectives of the Scheme. Four years (2008 to 2011) of performance history data for SP AusNet are provided as an attachment to this proposal.

This submission complies with the 22 month deadline set in the guidelines.

1.2 Background

In August 2011 SP AusNet started participating in the Market Impact component of STPIS. The introduction of the new market-focused parameter has triggered an assessment of SP AusNet's performance incentive schemes and identified a need to rebalance those schemes in time for SP AusNet's next transmission regulatory period.

[1] AER (2011), *Final – Electricity transmission network service providers – Service target performance incentive scheme*, Version 3, 31 March.

What does the Market Impact Parameter do?

The objective of this market impact parameter (MIP) of the STPIS is to promote efficient outcomes in the National Electricity Market (NEM), by rewarding transmission network service providers (TNSPs) when their actions cause fewer price differentials in the market (dispatch interval constraints) than they have historically.

Essentially it is an availability scheme, but only outages that result in real consequences in the market are targeted. In this way, the scheme encourages TNSPs to have the appropriate set of transmission elements available for each set of market conditions that prevails.

SP AusNet is in the learning phase of the MIP and is still analysing how operational decisions impact on the market outcomes against which performance is measured for this parameter. In the first five months of SP AusNet's participation in the scheme, 704 more dispatch interval constraints were caused than the target for that period.

Why is further change to STPIS required?

The introduction of the MIP has generated a situation where there are multiple incentives applied to a number of transmission elements in SP AusNet's network, and in some cases the incentives are in conflict.

SP AusNet has two other sets of incentives targeting the availability of its network assets – the STPIS Availability parameter, and the Availability Incentive Scheme (AIS, a Victorian jurisdictional scheme) – and the existence of these other availability incentive schemes is conflicting with and blunting the signals of the new MIP.

This is because the MIP is able to reflect dynamic information about when it is important to have certain assets available, whereas the other schemes make coarse categorisations into 'peak' and 'off-peak' periods. The overall benefit of the MIP can be reduced where the market does not line up with these prescriptive time periods.

A good example of the conflict between the MIP and the other availability incentives is that historically many market constraints have occurred in the off-peak period. This indicates that, in some circumstances, network users value availability (an uncongested network) off-peak. However, the other incentives send the signal to TNSPs that off-peak is when asset availability is least valued, making it the best time to take outages.

What type of change is needed?

In seeking to refine the STPIS for its next regulatory period, SP AusNet has applied three principles: the set of performance incentives should be complimentary; they should be comprehensive; and, they should be tailored to best meet the needs of the NEM and Victorian energy consumers.

1. *Complementary incentive schemes* – overlap of incentives such as exists in the current arrangements (discussed above) should be minimised and conflicts removed.

   For the assets that are central to the NEM, the MIP is the best suited to ensuring TNSPs have the correct incentives regarding the most important times to have the assets available.

2. *Comprehensive incentive schemes* – the introduction of the MIP has also highlighted the concentration of SP AusNet's performance incentives on a specific group of transmission elements.

   Not all transmission elements in the STPIS Availability parameter and the AIS are affected by the issue of conflicting incentives, because in practice MIP only targets a subset of network assets. It is typically only assets involved in interconnection, or in delivering energy from generation points to major regional hubs, that can cause constraints in the NEM.

   Further, there are some transmission elements currently that are not subject to any performance incentives

3. *Incentives tailored to the objectives of the NEM and of Victorian energy consumers* – given the MIP focuses on achieving efficient national outcomes, it is important to ensure the set of incentive schemes also protect the reliability and security of Victorian load.

The proposed changes to the STPIS (and the changes to the AIS that will be pursued) are outlined in Section 2.

1.3 Availability Incentive Scheme

While this submission proposes amendments to the AER's STPIS, it is necessary to also consider the future of SP AusNet's other transmission performance incentive scheme – the Availability Incentive Scheme (AIS).

The AIS, which sits in SP AusNet's Network Service Agreement with AEMO, is a long-standing Victorian jurisdictional scheme that seeks to secure Victorian load by penalising SP AusNet when certain transmission elements are unavailable. The penalties under this scheme are fixed under the contract and designed to reflect the relative importance of each piece of circuit. In the current regulatory period SP AusNet can obtain a maximum bonus of around $3 million for the AIS, but faces a maximum penalty of around $15 million.

The revenue SP AusNet has at risk against the AIS is additional to the revenue at risk against the STPIS.

The AIS has influenced the design and the current settings of the STPIS in relation to SP AusNet. Going forward, the future of the AIS will also be important for the redesign of the STPIS. As is discussed in more detail later in this submission, discussions between AEMO and SP AusNet around the future of the AIS are in their early stages, and the submission presents SP AusNet's preferred outcome.

1.4 AER Review of STPIS Guidelines

The Review of the Transmission STPIS guidelines, which the AER commenced in October 2011, is currently on hold but is expected to be completed in time for any changes to apply to SP AusNet.

Aspects of the amendments proposed in this submission require changes to the STPIS guidelines. It is anticipated that this could be achieved when the review of the guidelines resumes later this year.

SP AusNet is not able to fully anticipate what will emerge from the review when it recommences, and may seek to update its position in response.

2 Amendments

2.1 The proposed changes

Details of the STPIS as it applies to SP AusNet this period, are set out in the STPIS Guidelines "Final – Electricity transmission network service providers – Service target performance incentive scheme – Version 3, March 2011". In particular, the definitions specific to SP AusNet are set out in Appendix B, Part 3 for the service component (parameters 1 to 3) and Appendix C for the market component.

Weightings and Targets are agreed as part of the regulatory reset process and are not the subject of this submission.

The box below summarises the changes proposed to SP AusNet's STPIS definitions. These reflect the intentions set out in Section 1.2. Some elements of the changes proposed will be affected by what agreement that can be reached with AEMO on the AIS.

Parameter 1 – Transmission Circuit Availability

Option A – preferred (requiring closure of AIS)

Exclude 'MIP' assets
Include Connection assets
Capture features of the AIS – introduce category for 'reverse peaking assets' and three categories for asset criticality.
Increase revenue at risk to 1.5%

Option B - alternative

Exclude all shared-network assets
Include Connection assets
Measure availability at peak and intermediate peak only

Parameter 2 – Loss of Supply Event Frequency

No change

Parameter 3 – Average Outage Duration

Cap on individual events equal to 48 hours

Parameter 4 – Market Impact

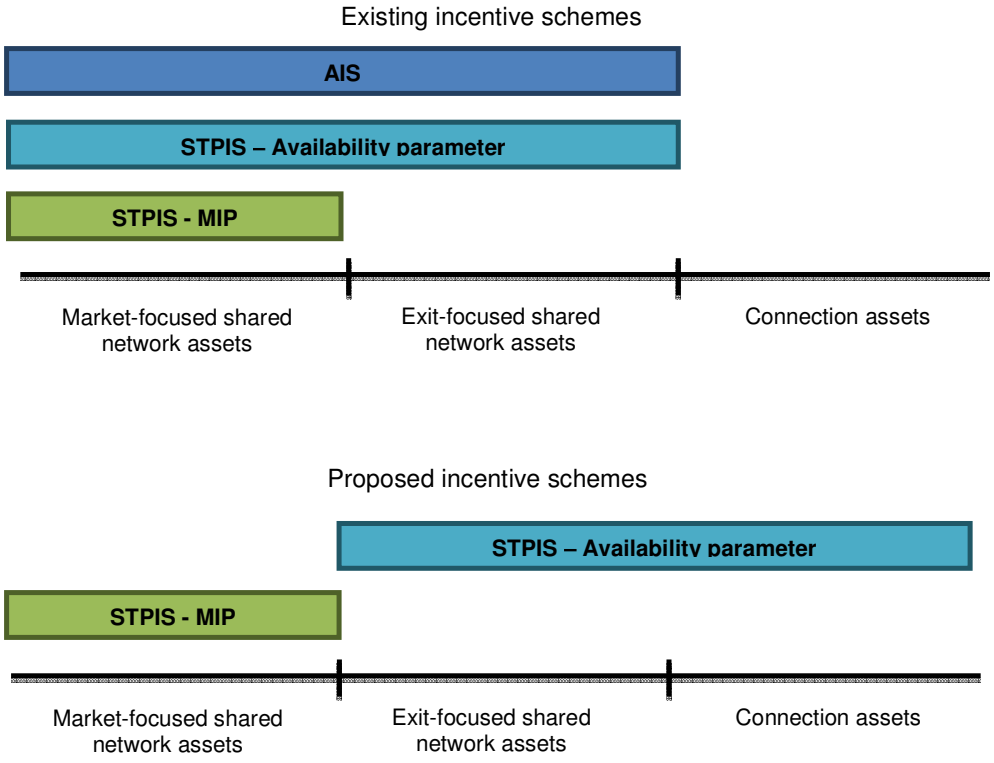
Increase revenue at risk to 3.5%

2.2 Details

2.2.1 Parameter 1: Transmission Circuit Availability

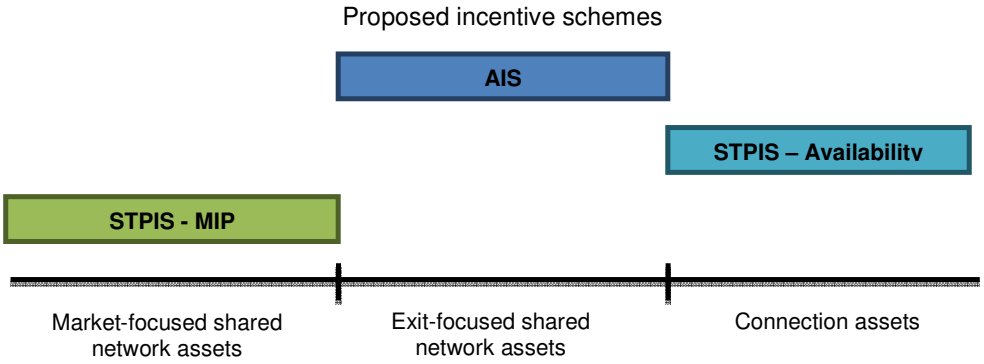
SP AusNet's objective in redesigning its availability-focused incentives is to remove overlap, and broaden overall coverage across its network assets as illustrated in Figure 2.1 below.

Figure 2.1: Coverage of incentive schemes



The proposed approach, which would see the closure of the Availability Incentive Scheme, requires agreement to be reached between SP AusNet and AEMO to end the scheme. As discussions with AEMO have just commenced, and SP AusNet does not wish to pre-empt the outcome, SP AusNet's preferred option (Option A) is presented with the acknowledgement that this is a starting point for discussions. An alternative proposal is also presented that could achieve some of this balancing of schemes if an agreement to close the AIS cannot be reached.

Figure 2.2: Option B – Changes to Availability parameter with AIS retained



General approach

The rebalancing of incentive schemes is achieved by removing the circuits that are important to the MIP (MIP assets) from other availability incentives, and by adding connection assets to the STPIS Availability parameter.

Table 2-1 summarises the number of transmission elements that are currently included in the STPIS Availability parameter by asset type.

Table 2-1: Existing STPIS Availability Parameter

	Number of circuit elements		
Plant type	**Critical**	**Non-Critical**	**Total**
Lines	110	6	116
Transformers	16	0	16
Reactive Plant	20	58	78
Total	**146**	**64**	**210**

What is a MIP asset?

By its design, the MIP counts dispatch interval constraints in the NEM, and as such it does not explicitly include or exclude individual elements in the transmission network. Unlike the other availability incentives, the MIP is dynamic in nature reflecting the complex role that individual assets play in overall network performance. Constraints occur when individual transmission elements are important to the overall operation of the NEM (i.e. when network availability impacts on the price consumers pay for electricity). By identifying those elements that are most able to cause constraints in the market, the 'MIP assets', it is possible to determine which assets have potentially conflicting incentives under the current STPIS arrangements.

The market focus of the MIP means that generally the transmission elements involved in interconnection and in delivering energy from generation points to major regional hubs are the ones that matter most to MIP outcomes. Conversely, load-

focused transmission elements, including connection assets, do not have the same ability to cause dispatch interval constraints in the NEM.

SP AusNet has identified the list of assets that have the potential to cause the majority of dispatch interval constraints both theoretically and practically. This list of MIP assets is provided at Appendix C. It is proposed that all transmission elements on this list would be excluded from the STPIS Availability parameter, and AIS in the case that the AIS is retained.

Inclusion of Connection Assets.

SP AusNet's assets connecting its Transmission network with the distribution businesses have been excluded from both the AIS and the STPIS Availability parameter. However, these assets are important to maintaining supply to Victorian customers.

SP AusNet has identified its regulated connection assets, and provided the list at Appendix D. It is proposed that all these Exit Connection assets would be included in the STPIS Availability parameter.

Option A – No AIS

Initial discussions with AEMO suggest they may be supportive of closing the AIS but would seek to have some of its features adopted in the STPIS. The proposal below is SP AusNet's initial attempt to capture many of the key AIS features.

AEMO have not been given time for detailed consideration of this proposal or to provide feedback on the specific aspects of their scheme that they see as important to retain in the STPIS.

In addition to the changes to the STPIS Availability parameter described above (inclusion of the Exit Connection assets and the exclusion of the MIP assets), the following changes are proposed.

Closure of AIS

The AIS would be closed at the end of the current regulatory period, by mutual agreement of AEMO and SP AusNet.

Time periods

The three time periods for the current Availability parameter are the same as the time periods for the AIS, with the key difference being that under the AIS a small group of assets are 'reverse peaking', where they receive higher penalties in the 'off peak' period, than in the 'peak' and 'intermediate peak'. These assets are typically rural reactive plant, used for voltage support when demand is low.

SP AusNet proposes to capture this by having an Availability sub-parameter for 'reverse-peaking' assets. It is proposed that the list of assets that are reverse peaking would be agreed at the Revenue Reset. An indicative list is provided at Appendix E. The availability of these assets would only be measured in the off-peak time period.

For all other assets in the STPIS Availability parameter, their availability would be measured only for the 'peak' and 'intermediate peak' time periods.

No changes are proposed to the definitions of the three time periods (peak, intermediate peak, and off-peak) currently defined for SP AusNet's availability

parameter. However, a typo in the current guidelines regarding the hours when 'off-peak' applies, should be corrected[2].

For assets in the MIP, the scheme inherently captures the dynamic importance of individual assets by penalising TNSPs only at times when outages cause constraints in the market. For example, some assets have a high likelihood of causing constraints for large periods of time, whereas other assets are only likely to cause constraints if outages occur in specific time bands.

Penalties weighted by importance of asset

The penalties for the AIS vary by asset, with the size of the penalties determined initially by a detailed assessment of the relative importance of each asset.

In the STPIS currently, a distinction is drawn between assets which are critical and non-critical. SP AusNet proposes that for the assets in the STPIS Availability parameter there would an additional category (three in total), and that the categorisation of assets into the three groups would occur at the revenue reset in consultation with AEMO.

It is noted that the intent of the proposal is for the guidelines to be amended to allow for three categories of asset priority, or criticality. An indicative categorisation of assets is provided at Appendix E which uses the distinctions of CBD, Metropolitan and Regional to determine the asset categorisation. However, it is proposed that approval of asset categorisation would be something that would be completed as part of the Revenue Reset process.

While not capturing the same granularity of the AIS, the use of three categories will better reflect the principle that some assets are of greater importance than others. To ensure that this principle is preserved, the weightings of each sub-parameter would be required to be such that higher criticality groupings were subject to a larger weighting.

Revenue at Risk

In recognition of the new connection assets being added to the availability parameter and that some of the revenue at risk under the AIS would be lost, it is proposed that the service component would be increased by 0.5% to ±1.5% of revenue.

Summary

Appendix E provides the list of assets that are proposed would make up the new STPIS availability parameter, with indicative categorisation into three priority groupings.

Under the proposed amendments there would be seven sub-parameters for Availability, as shown in Table 2-2.

[2] The 'off-peak' hours for summer and winter have been accidently swapped in the current guidelines, and should be changed so that summer off-peak is from 2201 to 1059, and winter is from 2201 to 0659.

Table 2-2: Proposed STPIS Availability sub-parameters

	Peak	Intermediate peak	Off-peak
Priority 1 (CBD)	✓	✓	✖
Priority 2 (Metro)	✓	✓	✖
Priority 3 (Regional)	✓	✓	✖
Reverse peaking	✖	✖	✓

Table 2-3 summarises the number of transmission elements that are proposed to be included in the STPIS Availability parameter by asset type.

Table 2-3: Proposed STPIS Availability Parameter

	Number of circuit elements		
Plant type	**Shared Network**	**DB Connection**	**Total**
Lines	33	2	35
Transformers	0	101	101
Reactive Plant	49	2	51
Total	**82**	**105**	**187**

Option B – AIS retained

If SP AusNet cannot come to an agreement with AEMO to close the AIS, it would pursue the alternative option of excluding 'MIP-assets' from the AIS and only include the exit connection assets in the STPIS Availability parameter (i.e. assets listed in Appendix D).

Reflecting the smaller number of assets that would be included in the STPIS Availability parameter, no categorisation would be undertaken so there would be only two Availability sub-parameters: peak and intermediate peak availability. None of the exit connection assets are reverse peaking.

Table 2-4 summarises the number of assets that would be in each of the availability schemes under this scenario.

Table 2-4: Option B (AIS retained) – STPIS and AIS Availability Parameters

	Number of transmission elements	
Plant type	**STPIS Availability** (Connection only)	**AIS** (Shared network only)
Lines	2	33
Transformers	101	0
Reactive Plant	2	49
Total	**105**	**82**

2.2.2 Parameter 3: Average Outage Duration

It is proposed to reduce the cap on individual outages (currently set at seven days) to 48 hours, in order to reduce the frequency with which the annual target is failed well before the year is complete.

Outage duration is measured as the total duration of all unplanned outages divided by the number of events. The duration of individual outages that is counted in the calculation is currently capped at 7 days to ensure that the incentive to minimise outages remains throughout the year.

In the current regulatory period, SP AusNet has found that the cap of 7 days is too high to achieve its intended goal and is proposing to lower the cap to 2 days.

All other aspects of this parameter definition would remain unchanged.

The changes to the single event cap for outage duration is not related the bigger rebalancing of incentives that SP AusNet is proposing in this submission, but rather is a response to observations of the distribution of outage events in the current regulatory period.

2.2.3 Parameter 4: Market Impact

It is proposed that revenue at risk would be increased by 1.5% to 3.5%.

SP AusNet has been a strong advocate of roll of performance incentive schemes in the regulation of network service providers, and has welcomed the roll-out of the market impact parameter.

The increase in revenue at risk will strengthen the alignment of SP AusNet's incentives with the interests of the market.

Together with the increased revenue at risk for the service component, the proposed increase for the market component will take total revenue at risk for the STPIS to 5%.

2.3 Consistency with STPIS objectives

SP AusNet believes that the amendments it has proposed are consistent with the STPIS objectives laid out in clause 1.4 for the AER's STPIS guidelines, including being consistent with both the national electricity objective (NEO) and the STPIS principles as set out in the National Electricity Rules, the details of which are reproduced below:

1.4 AER Objectives

AER objectives for this scheme are that it:

(a) contributes to the achievement of the national electricity objective

(b) is consistent with the principles in clause 6A.7.4(b) of the NER

(c) promotes transparency in:

(1) the information provided by a TNSP to the AER, and

(2) the decisions made by the AER

(d) assists in the setting of efficient capital and operating expenditure allowances in its transmission determinations by balancing the incentive to reduce actual expenditure with the need to maintain and improve reliability for customers and reduce the market impact of transmission.

National Electricity Objective

The objective of this Law is to promote efficient investment in, and efficient operation and use of, electricity services for the long term interests of consumers of electricity with respect to—

a. price, quality, safety, reliability and security of supply of electricity; and

b. the reliability, safety and security of the national electricity system.

Chapter 6A, Clause 6A.7.4(b), NER

(b) The principles are that the service target performance incentive scheme should:

1) provide incentives for each Transmission Network Service Provider to:

i. provide greater reliability of the transmission system that is owned, controlled or operated by it at all times when Transmission Network Users place greatest value on the reliability of the transmission system; and

ii. improve and maintain the reliability of those elements of the transmission system that are most important to determining spot prices;

2) result in a potential adjustment to the revenue that the Transmission Network Service Provider may earn, from the provision of prescribed transmission services, in each regulatory year in respect of which the service target performance incentive scheme applies;

3) ensure that the maximum revenue increment or decrement as a result of the operation of the service target performance incentive scheme will fall within a range that is between 1% and 5% of the maximum allowed revenue for the relevant regulatory year;

4) take into account the regulatory obligations or requirements with which Transmission Network Service Providers must comply;

5) take into account any other incentives provided for in the Rules that Transmission Network Service Providers have to minimise capital or operating expenditure; and

6) take into account the age and ratings of the assets comprising the relevant transmission system.

At the high level, the overall effect of the changes proposed in this submission is to broaden the coverage of assets subject to performance incentives, remove conflicts between STPIS parameters, and to strengthen incentives.

This is consistent with the NEO as the incentive package promotes efficient operation of the transmission network and aligns the TNSPs interests with the long term interests of consumers.

The changes are consistent with the more technical STPIS Principles (such as the cap and collar on maximum revenue increments under the scheme), and removes impediments in the existing scheme to the Principle that the STPIS should provide incentives to improve and maintain reliability at times when network users place greatest value on it, and on the transmission elements that are most important to determining spot prices.

The changes are also consistent with the objective of promoting transparency in the regulatory process, as they continue to provide for reporting of performance data against a national set of parameters.

By removing the overlap between SP AusNet's incentive schemes, the proposed amendments better align the STPIS with the fourth of the Scheme's objectives (to balance incentive for performance improvement with the incentive to save money), because it removes the confusion regarding what is performance improvement and it ensures that the incentive to improve performance is clear.

The sections below address how the proposed amendments are consistent with the STPIS objectives when each of the amendments is considered individually.

2.3.1 Parameter 1: Transmission Circuit Availability

Exclusion of 'MIP' assets:

- The MIP will continue to provide an availability incentive on these assets.
- This amendment is consistent with the NEO because it allows MIP to operate more effectively, promoting efficient operation of the network by providing clearer encouragement to take outages at times when availability is least valued in the market.
- The first of the STPIS principles set out in 6A.7.4(b) requires that the incentives promote availability when it is most valued by network users and when it is most important to spot prices. Because the time periods for the Availability parameter do not align perfectly with those determined in the market, the removal of incentives based on fixed peak periods encourages outages on 'MIP assets' to be taken at times when they are of little consequence to the market and network users.
- This change does not impact on the other five STPIS principles of Clause 6A.7.4(b) of the NER.

Inclusion of Connection assets:

- As this already occurs for other TNSPs, it is assumed that the AER is satisfied with the consistency of including Connection assets in the Availability parameter with the STPIS objectives.

- SP AusNet has previously received strong encouragement from Distribution Businesses (DBs) to include the DB connection assets in our performance incentive scheme.
- The inclusion of connection assets is consistent with the STPIS objectives because it provides performance incentives on an important group of assets that are load focused and therefore do not influence MIP outcomes.

Capture features of the AIS – introduce category for 'reverse peaking assets' and three categories for asset criticality:

- These refinements to the scheme ensure that the incentives are better targeted to reflect the times when transmission network users place most value on reliability (principle 1 under the rules) and align with the NEO in that, by placing greater incentives on more important assets, more efficient operation of the network is promoted.

Increase revenue at risk against the Service Component of the STPIS to 1.5%:

- SP AusNet has long been an advocate of performance incentive schemes as an efficient means of driving performance improvement.
- The increase in the revenue at risk for the service component of the STPIS, reflects that the closure of the AIS would result in decreases in overall incentive rates for some assets in the absence of a change to the Maximum Revenue Increment for the STPIS Service component.
- The combined revenue at risk that is proposed for the Market Impact and Performance components of the STPIS is 5% which is consistent with Principle 4 of the STPIS, which sets out that the total must be between 1% and 5%.

Measure availability at peak and intermediate peak only (Option B only):

- Some other TNSPs currently only measure the Availability parameter for the peak and intermediate peak, so it is assumed the AER believe that this is consistent with the scheme objectives.
- For the connection assets involved, it seems clear that customers would value availability most in the peak periods,
- Other incentives such as the 'loss of supply' parameter continue to provide an incentive to provide availability if it is associated with risk of loss of supply.
- Incentives to minimise system minutes provide TNSPs good reason to limit over-long outages (where longer outages are associated with higher risk of loss of supply). TNSPs will always require some outages, and will have incentives to schedule them at the time when the availability of the assets in question is least valued.
- Given that the Availability measure was designed as a 'leading indicator', in situations where it does not lead to market constraints (which have tangible value to network users), the value of providing excessive disincentives for taking outages off-peak is not clear.

2.3.2 Parameter 3: Average Outage Duration

The capping of major outages ensures that there is a continuous incentive all year round to minimise the duration of unplanned outages. Under the existing 7 day cap, 'long' outages early in the year significantly blunt the incentive rate because reductions in the average duration of any subsequent outages will have a smaller impact on the overall average for the year.

Because outages that affect customers get captured in the loss of supply (system minutes) parameter, an incentive to minimise the duration of long outages remains.

2.3.3 Parameter 4: Market Impact

Increasing revenue at risk on the Market Impact parameter is consistent with the NEO because it provides a stronger alignment of TNSP objectives with the interests of consumers.

Consumers have regularly expressed support for increasing revenue at risk against performance incentive schemes. For example, in response to the AER's STPIS Review Issues Paper (October 2011), the Major Energy Users advocated lifting revenue at risk against the STPIS to the 5% maximum set in the rules. This was also the position of Alinta Energy, TRU energy and the private generators.

Raising revenue at risk is consistent with the principles of the STPIS set out in the National Electricity Rules. Specifically an increase in revenue at risk provides a stronger incentive to provide reliability when it is most valued by network users. The total proposed revenue at risk across the STPIS is 5%, consistent with the rules.

2.4 Data for establishing targets

A data set of all SP AusNet's outages for the years 2008 to 2011 is included in this submission.

APPENDIX A: CURRENT STPIS AVAILABILITY ASSETS

Circuits

Circuit	Criticality
HYTS-APD 1 500KV W	CRITICAL ELEMENT
HYTS-APD 2 500KV W	CRITICAL ELEMENT
ATS -BLTS 220KV WY	CRITICAL ELEMENT
KTS -ATS 220KV WY	CRITICAL ELEMENT
BATS-BETS 220KV	CRITICAL ELEMENT
BATS-WBTS-HOTS 220KV W	CRITICAL ELEMENT
MLTS-BATS 1 220KV WY	CRITICAL ELEMENT
MLTS-BATS 2 220KV WY	CRITICAL ELEMENT
BATS-TGTS 220KV WW	CRITICAL ELEMENT
BETS-FVTS-SHTS 220KV NB	CRITICAL ELEMENT
BETS-KGTS 220KV NB	CRITICAL ELEMENT
KTS -BLTS 220KV WY	CRITICAL ELEMENT
NPSD-BLTS 220KV WY	CRITICAL ELEMENT
BSS 220KV LINE AT RCTS	CRITICAL ELEMENT
BTS -RTS 220KV W (BTS to Joint Bay 7)	CRITICAL ELEMENT
TTS -BTS 1 220KV WT	CRITICAL ELEMENT
TTS -BTS 3 220KV WT	CRITICAL ELEMENT
ERTS-CBTS 1 220KV E	CRITICAL ELEMENT
ERTS-CBTS 2 220KV E	CRITICAL ELEMENT
HWTS-CBTS 4 500KV G	CRITICAL ELEMENT
CBTS-ROTS 4 500KV E	CRITICAL ELEMENT
CBTS-TBTS 1 220KV E	CRITICAL ELEMENT
CBTS-TBTS 2 220KV E	CRITICAL ELEMENT
DDTS-GNTS 1 220KV NW	CRITICAL ELEMENT
DDTS-GNTS 3 220KV NW	CRITICAL ELEMENT
MSS -DDTS 1 330KV NW	CRITICAL ELEMENT
MSS -DDTS 2 330KV NW	CRITICAL ELEMENT
DDTS-SHTS 220KV NW	CRITICAL ELEMENT
DDTS-SMTS 1 330KV	CRITICAL ELEMENT
DDTS-SMTS 2 330KV	CRITICAL ELEMENT
WOTS-DDTS 330KV NW	CRITICAL ELEMENT
MBTS-DDTS 1 220KV NW	CRITICAL ELEMENT
MBTS-DDTS 2 220KV NW	CRITICAL ELEMENT
DPS -MBTS 220KV NW	CRITICAL ELEMENT
EPS -TTS 1 220KV N	CRITICAL ELEMENT
ERTS-ROTS 1 220KV E	CRITICAL ELEMENT
ERTS-ROTS 2 220KV E	CRITICAL ELEMENT
NPSD-FBTS 220KV WY	CRITICAL ELEMENT
GNTS-SHTS 1 220KV N	CRITICAL ELEMENT
GNTS-SHTS 3 220KV NW	CRITICAL ELEMENT
GTS -PTH 1 220KV WY	CRITICAL ELEMENT
GTS -PTH 2 220KV WY	CRITICAL ELEMENT
KTS -GTS 1 220KV WY	CRITICAL ELEMENT
KTS -GTS 2 220KV WY	CRITICAL ELEMENT
KTS -GTS 3 220KV WY	CRITICAL ELEMENT
MLTS-GTS 1 220KV WY	CRITICAL ELEMENT
MLTS-GTS 2 220KV WY	CRITICAL ELEMENT
HOTS-RCTS 220KV	CRITICAL ELEMENT
SVTS-HTS 1 220KV E	CRITICAL ELEMENT
SVTS-HTS 2 220KV E	CRITICAL ELEMENT
HWPS-JLTS 1 220KV G	CRITICAL ELEMENT
HWPS-JLTS 2 220KV G	CRITICAL ELEMENT

Circuit	Criticality
HWPS-JLTS 3 220KV G	CRITICAL ELEMENT
HWPS-JLTS 4 220KV G	CRITICAL ELEMENT
HWPS-MPS-MWTS 220KV G	CRITICAL ELEMENT
HWPS-ROTS 1 220KV G	CRITICAL ELEMENT
HWPS-ROTS 2 220KV G	CRITICAL ELEMENT
HWPS-YPS 1 220KV G	CRITICAL ELEMENT
HWPS-YPS 2 220KV G	CRITICAL ELEMENT
LYPS-HWTS 1 500KV G	CRITICAL ELEMENT
LYPS-HWTS 2 500KV G	CRITICAL ELEMENT
LYPS-HWTS 3 500KV G	CRITICAL ELEMENT
HWTS-ROTS 3 500KV G	CRITICAL ELEMENT
HWTS-SMTS 1 500KV G	CRITICAL ELEMENT
HWTS-SMTS 2 500KV G	CRITICAL ELEMENT
MLTS-HYTS 1 500KV W	CRITICAL ELEMENT
MLTS-MOPS 2 500KV	CRITICAL ELEMENT
MOPS-HYTS 2 500KV	CRITICAL ELEMENT
HYTS-SESS 1 275KV WH	CRITICAL ELEMENT
HYTS-SESS 2 275KV WH	CRITICAL ELEMENT
JDSS-WOTS 330KV NW	CRITICAL ELEMENT
TBTS-JLA 1 220KV E	CRITICAL ELEMENT
TBTS-JLA 2 220KV E	CRITICAL ELEMENT
JLTS-MWTS 1 220KV G	CRITICAL ELEMENT
JLTS-MWTS 2 220KV G	CRITICAL ELEMENT
KGTS-RCTS 220KV NB	CRITICAL ELEMENT
KTS -WMTS 1 220KV WT	CRITICAL ELEMENT
KTS -WMTS 2 220KV WT	CRITICAL ELEMENT
SMTS-KTS 500KV WT	CRITICAL ELEMENT
SYTS-KTS 500KV WT	CRITICAL ELEMENT
TTS -KTS 1N220KV WT	CRITICAL ELEMENT
TTS -KTS 2N220KV W	CRITICAL ELEMENT
MWTS-LY 1 66KV G	CRITICAL ELEMENT
MWTS-LY 2 66KV G	CRITICAL ELEMENT
MWTS-LY 3 66KV G	CRITICAL ELEMENT
MWTS-LY 4 66KV G	CRITICAL ELEMENT
MKPS-MBTS 220KV NW	CRITICAL ELEMENT
WKPS-MBTS 220KV NW	CRITICAL ELEMENT
SYTS-MLTS 1 500KV WY	CRITICAL ELEMENT
SYTS-MLTS 2 500KV WY	CRITICAL ELEMENT
MLTS-TGTS 220KV W	CRITICAL ELEMENT
ROTS-MTS 1 220KV E	CRITICAL ELEMENT
ROTS-MTS 3 220KV E	CRITICAL ELEMENT
ROTS-RTS 1 220KV E	CRITICAL ELEMENT
ROTS-RTS 4 220KV E	CRITICAL ELEMENT
ROTS-RWTS 220KV E	CRITICAL ELEMENT
ROTS-SMTS 3 500KV EM	CRITICAL ELEMENT
ROTS-SVTS 1 220KV E	CRITICAL ELEMENT
ROTS-SVTS 2 220KV E	CRITICAL ELEMENT
ROTS-TSTS 220KV E	CRITICAL ELEMENT
YPS -ROTS 5 220KV G	CRITICAL ELEMENT
YPS -ROTS 6 220KV G	CRITICAL ELEMENT
YPS -ROTS 7 220KV G	CRITICAL ELEMENT
YPS -ROTS 8 220KV G	CRITICAL ELEMENT
RWTS-TTS 220KV E	CRITICAL ELEMENT
SMTS-SYTS 1 500KV WT	CRITICAL ELEMENT
SMTS-SYTS 2 500KV WT	CRITICAL ELEMENT
SMTS-TTS 1 220KV WT	CRITICAL ELEMENT

Circuit	Criticality
SMTS-TTS 2 220KV WT	CRITICAL ELEMENT
TSTS-TTS 220KV E	CRITICAL ELEMENT
FBTS-BLTS 220KV WY	NON CRITICAL ELEMENT
MBTS-EPS 1 220KV N	NON CRITICAL ELEMENT
MBTS-EPS 2 220KV N	NON CRITICAL ELEMENT
WMTS-FBTS 1 220KV WY	NON CRITICAL ELEMENT
WMTS-FBTS 2 220KV WY	NON CRITICAL ELEMENT
ROTS-TTS 220KV E	NON CRITICAL ELEMENT

Transformers

Transformer	Criticality
H1 330/220KV TRANS BANK AT DDTS	CRITICAL ELEMENT
H2 330/220KV TRANS AT DDTS	CRITICAL ELEMENT
H3 330/220KV TRANS AT DDTS	CRITICAL ELEMENT
A1 515/230KV MAIN TRANS AT HWTS	CRITICAL ELEMENT
A2 515/230KV TRANS BANK AT HWTS	CRITICAL ELEMENT
A3 515/230KV TRANS BANK AT HWTS	CRITICAL ELEMENT
A4 515/230KV TRANS BANK AT HWTS	CRITICAL ELEMENT
M1 500/275KV TRANS AT HYTS	CRITICAL ELEMENT
M2 500/275KV TRANS AT HYTS	CRITICAL ELEMENT
A2 500/220KV TRANS BANK AT KTS	CRITICAL ELEMENT
A3 500/220KV TRANS BANK AT KTS	CRITICAL ELEMENT
A4 500/220KV TRANS BANK AT KTS	CRITICAL ELEMENT
A1 500/220KV TRANS BANK AT MLTS	CRITICAL ELEMENT
F2 500/330KV TRANS BANK AT SMTS	CRITICAL ELEMENT
H1 330/220KV TRANS BANK AT SMTS	CRITICAL ELEMENT
H2 330/220KV TRANS BANK AT SMTS	CRITICAL ELEMENT

Reactive Plant

Reactive Plant	Criticality
Capacitor Banks	
NO.4 220KV CAPACITOR BANK AT BLTS	CRITICAL ELEMENT
NO.4 220KV CAPACITOR BANK AT FBTS	CRITICAL ELEMENT
NO.1 275KV CAPACITOR BANK AT HYTS	CRITICAL ELEMENT
NO.1 220KV CAPACITOR BANK AT KTS	CRITICAL ELEMENT
NO.1 220KV CAPACITOR BANK AT MLTS	CRITICAL ELEMENT
NO.1 220KV CAPACITOR BANK AT RCTS	CRITICAL ELEMENT
NO.2 220KV CAPACITOR BANK AT RCTS	CRITICAL ELEMENT
NO.2 220KV CAPACITOR BANK AT ROTS	CRITICAL ELEMENT
NO.3 220KV CAPACITOR BANK AT ROTS	CRITICAL ELEMENT
NO.2 220KV CAPACITOR BANK AT RWTS	CRITICAL ELEMENT
NO.1 220KV CAPACITOR BANK AT TSTS	CRITICAL ELEMENT
NO.1 220KV CAPACITOR BANK AT TTS	CRITICAL ELEMENT
NO.3 220KV CAPACITOR BANK AT TTS	CRITICAL ELEMENT
NO.1 66KV CAPACITOR BANK AT BATS	NON CRITICAL ELEMENT
NO.2 66KV CAPACITOR BANK AT BATS	NON CRITICAL ELEMENT
NO.2B 66KV CAPACITOR BANK AT BETS	NON CRITICAL ELEMENT
NO.3B 66KV CAPACITOR BANK AT BETS	NON CRITICAL ELEMENT
NO.1 22KV CAPACITOR BANK AT BTS	NON CRITICAL ELEMENT

Reactive Plant	Criticality
NO.3 22KV CAPACITOR BANK AT BTS	NON CRITICAL ELEMENT
NO.1A 66KV CAPACITOR BANK AT ERTS	NON CRITICAL ELEMENT
NO.1B 66KV CAPACITOR BANK AT ERTS	NON CRITICAL ELEMENT
NO.3 66KV CAPACITOR BANK AT ERTS	NON CRITICAL ELEMENT
NO.4 66KV CAPACITOR BANK AT ERTS	NON CRITICAL ELEMENT
NO.1 66KV CAPACITOR BANK AT GNTS	NON CRITICAL ELEMENT
NO.1 66KV CAPACITOR BANK AT GTS	NON CRITICAL ELEMENT
NO.4 66KV CAPACITOR BANK AT GTS	NON CRITICAL ELEMENT
NO.1A 66KV CAPACITOR BANK AT HOTS	NON CRITICAL ELEMENT
NO.1B 66KV CAPACITOR BANK AT HOTS	NON CRITICAL ELEMENT
NO.2 66KV CAPACITOR BANK AT HOTS	NON CRITICAL ELEMENT
NO.1A 66KV CAPACITOR BANK AT HTS	NON CRITICAL ELEMENT
NO.1B 66KV CAPACITOR BANK AT HTS	NON CRITICAL ELEMENT
NO.1 66KV CAPACITOR BANK AT KGTS	NON CRITICAL ELEMENT
NO.2 66KV CAPACITOR BANK AT KGTS	NON CRITICAL ELEMENT
NO.2 22KV CAPACITOR BANK AT KGTS	NON CRITICAL ELEMENT
NO.1A 66KV CAPACITOR BANK AT KTS	NON CRITICAL ELEMENT
NO.1B 66KV CAPACITOR BANK AT KTS	NON CRITICAL ELEMENT
NO.1 66KV CAPACITOR BANK AT LY	NON CRITICAL ELEMENT
NO.2 66KV CAPACITOR BANK AT LY	NON CRITICAL ELEMENT
NO.1 66KV CAPACITOR BANK AT RCTS	NON CRITICAL ELEMENT
NO.2 66KV CAPACITOR BANK AT RCTS	NON CRITICAL ELEMENT
NO.1 22KV CAPACITOR BANK AT RCTS	NON CRITICAL ELEMENT
NO.2 22KV CAPACITOR BANK AT RCTS	NON CRITICAL ELEMENT
NO.1 66KV CAPACITOR BANK AT RTS	NON CRITICAL ELEMENT
NO.4 66KV CAPACITOR BANK AT RTS	NON CRITICAL ELEMENT
NO.2A 66KV CAPACITOR BANK AT RWTS	NON CRITICAL ELEMENT
NO.2B 66KV CAPACITOR BANK AT RWTS	NON CRITICAL ELEMENT
NO.2A 66KV CAPACITOR BANK AT SHTS	NON CRITICAL ELEMENT
NO.2B 66KV CAPACITOR BANK AT SHTS	NON CRITICAL ELEMENT
NO.3A 66KV CAPACITOR BANK AT SHTS	NON CRITICAL ELEMENT
NO.3B 66KV CAPACITOR BANK AT SHTS	NON CRITICAL ELEMENT
NO.1 66KV CAPACITOR BANK AT SVTS	NON CRITICAL ELEMENT
NO.4A 66KV CAPACITOR BANK AT SVTS	NON CRITICAL ELEMENT
NO.4B 66KV CAPACITOR BANK AT SVTS	NON CRITICAL ELEMENT
66KV CAPACITOR BANK AT TGTS	NON CRITICAL ELEMENT
NO.2 66KV CAPACITOR BANK AT TTS	NON CRITICAL ELEMENT
NO.4A 66KV CAPACITOR BANK AT TTS	NON CRITICAL ELEMENT
NO.4B 66KV CAPACITOR BANK AT TTS	NON CRITICAL ELEMENT
NO.2 66KV CAPACITOR BANK AT WMTS	NON CRITICAL ELEMENT
NO.3 66KV CAPACITOR BANK AT WMTS	NON CRITICAL ELEMENT
SVC	
STATIC VAR COMPENSATOR AT HOTS	CRITICAL ELEMENT
STATIC VAR COMPENSATOR AT KGTS	CRITICAL ELEMENT
NO.1 CSC AT ROTS	CRITICAL ELEMENT
NO.2 CSC AT ROTS	CRITICAL ELEMENT
SYNCON	
SYN/COND AT BLTS	NON CRITICAL ELEMENT
SYN/COND AT FBTS	NON CRITICAL ELEMENT
SYN/COND AT TSTS	NON CRITICAL ELEMENT
REACTOR	
NO.1 66KV REACTOR AT HOTS	NON CRITICAL ELEMENT
NO.2 66KV REACTOR AT HOTS	NON CRITICAL ELEMENT
66KV SHUNT REACTOR AT KGTS	NON CRITICAL ELEMENT

Reactive Plant	Criticality
HYTS 1 500KV LINE SHUNT REACT AT MLTS	NON CRITICAL ELEMENT
HYTS 2 500KV LINE SHUNT REACT AT MLTS	NON CRITICAL ELEMENT
220KV SHUNT REACTOR AT MLTS	NON CRITICAL ELEMENT
NO.1 66KV REACTOR AT RCTS	NON CRITICAL ELEMENT
NO.2 66KV REACTOR AT RCTS	NON CRITICAL ELEMENT
NO.3 66KV REACTOR AT RCTS	NON CRITICAL ELEMENT
BUS	
NO.1 330KV BUS AT DDTS	CRITICAL ELEMENT
NO.2 330KV BUS AT DDTS	CRITICAL ELEMENT
NO.2 330KV BUS AT SMTS	CRITICAL ELEMENT

APPENDIX B: CURRENT AIS ASSETS

Circuits

Transmission Element			Outage Rebate Rates Total ($/hour)		
Circuit	Group	Voltage	Period 1	Period 2	Period 3
APD-HYTS Circuit 1	12	500	2,580	2,487	2,436
APD-HYTS Circuit 2	12	500	2,580	2,487	2,436
ATS-BLTS	5, 7	220	246	205	154
ATS-KTS	5, 7	220	246	205	154
BATS-BETS	9	220	481	174	102
BATS-HOTS	9	220	614	502	328
BATS-MLTS Circuit 1	9	220	420	82	51
BATS-MLTS Circuit 2	9	220	420	82	51
BATS-TGTS	6, 9	220	768	768	379
BETS-KGTS	9	220	307	297	194
BETS-SHTS	9	220	1,116	297	0
BLTS-FBTS	5	220	225	143	0
BLTS-KTS	5, 7	220	205	174	0
BLTS-NPSD	4, 5	220	1,853	921	10
BTS-RTS	3	220	1,607	543	0
BTS-TTS Circuit 1	3	220	543	194	0
BTS-TTS Circuit 3	3	220	543	194	0
DDTS-GNTS 1	8	220	1,679	461	256
DDTS-GNTS 3	8	220	1,679	461	256
DDTS-MBTS Circuit 1	8	220	102	82	10
DDTS-MBTS Circuit 2	8	220	102	82	10
DDTS-MSS Circuit 1	1, 10	330	6,644	4,903	51
DDTS-MSS Circuit 2	1, 10	330	6,644	4,903	51
DDTS-SHTS		220	1,351	389	143
DDTS-SMTS Circuit 1	1, 11	330	6,009	5,436	205
DDTS-SMTS Circuit 2	1, 11	330	6,009	5,436	205
DDTS-WOTS	10	330	266	225	154
DPS-MBTS		220	563	338	0
EPS-MBTS Circuit 1	8	220	102	82	10
EPS-MBTS Circuit 2	8	220	102	82	10
EPS-TTS	3, 8, 11	220	3,470	430	20
ERTS-FTS Circuit 1	25	66	1,443	450	225
ERTS-FTS Circuit 2	25	66	1,443	450	225
ERTS-ROTS Circuit 1	15	220	2,037	1,730	1,095
ERTS-ROTS Circuit 2	15	220	2,037	1,730	1,095
ERTS-TBTS Circuit 1	16	220	563	491	399
ERTS-TBTS Circuit 2	16	220	563	491	399
FBTS-NPSD	4	220	1,955	932	20
FBTS-WMTS Circuit 1	17	220	379	82	0
FBTS-WMTS Circuit 2	17	220	379	82	0
GNTS-SHTS Circuit 1	9	220	901	328	92
GNTS-SHTS Circuit 3	9	220	901	328	92
GTS-KTS Circuit 1	7	220	297	82	10
GTS-KTS Circuit 2	7	220	297	82	10
GTS-KTS Circuit 3	7	220	297	82	10

Transmission Element			Outage Rebate Rates Total ($/hour)		
Circuit	Group	Voltage	Period 1	Period 2	Period 3
GTS-MLTS Circuit 1	18	220	194	82	0
GTS-MLTS Circuit 2	18	220	194	82	0
GTS-PTH Circuit 1	19	220	1,474	1,443	1,422
GTS-PTH Circuit 2	19	220	1,474	1,443	1,422
HOTS-RCTS	9	220	369	348	205
HTS-SVTS Circuit 1	20	220	1,423	1,013	624
HTS-SVTS Circuit 2	20	220	1,423	1,013	624
HWPS-JLTS Circuit 1	2	220	102	82	0
HWPS-JLTS Circuit 3	2	220	563	553	0
HWPS-JLTS Circuit 4	2	220	563	553	0
HWPS-MPS-MWTS 4	2	220	102	82	51
HWPS-ROTS Circuit 1	2	220	1,935	205	72
HWPS-ROTS Circuit 2	2	220	1,935	205	72
HWPS-ROTS Circuit 3	2	220	4,606	3,050	72
HWPS-YPS Circuit 1	2	220	839	82	10
HWPS-YPS Circuit 2	2	220	839	82	10
HWTS-HWPS Circuit 1*		220	See A1 Trans		
HWTS-HWPS Circuit 2*		220	See A2 Trans		
HWTS-HWPS Circuit 3*		220	See A3 Trans		
HWTS-HWPS Circuit 4*		220	See A4 Trans		
HWTS-LYPS Circuit 1	1	500	2,344	1,013	31
HWTS-LYPS Circuit 2	1	500	2,344	1,013	31
HWTS-LYPS Circuit 3	1	500	2,344	1,013	31
HWTS-ROTS 4	1	500	13,379	7,053	358
HWTS-SMTS 1	1	500	13,604	7,114	409
HWTS-SMTS 2	1	500	13,604	7,114	409
HYTS-MLTS Circuit 1	13	500	7,647	5,446	3,665
HYTS-MLTS Circuit 2	13	500	7,647	5,446	3,665
HYTS-SESS Circuit 1	14	275	2,385	1,167	41
HYTS-SESS Circuit 2	14	275	2,385	1,167	41
JIND-WOTS	10	330	338	235	154
JLA-TBTS Circuit 1	21	220	256	256	256
JLA-TBTS Circuit 2	21	220	256	256	256
JLTS-MWTS Circuit 1	22	220	246	113	92
JLTS-MWTS Circuit 2	22	220	246	113	92
KGTS-RCTS	9	220	266	246	133
KTS-SMTS	1, 7	500	4,555	1,945	92
KTS-SYTS	7	500	1,976	829	20
KTS-TTS Circuit 1	3, 7	220	133	82	0
KTS-TTS Circuit 2	3, 7	220	133	82	0

Transmission Element			Outage Rebate Rates Total ($/hour)		
Circuit	Group	Voltage	Period 1	Period 2	Period 3
KTS-WMTS Circuit 1	7	220	184	82	0
KTS-WMTS Circuit 2	7	220	184	82	0
LYPS-MWTS Circuit 1	26	66	102	82	0
LYPS-MWTS Circuit 2	26	66	102	82	0
LYPS-MWTS Circuit 3	26	66	102	82	0
LYPS-MWTS Circuit 4	26	66	102	82	0
MBTS-MKPS		220	594	194	0
MBTS-WKPS		220	594	194	0
MLTS-SYTS Circuit 1	7	500	5,200	3,849	2,662
MLTS-SYTS Circuit 2	7	500	5,200	3,849	2,662
MLTS-TGTS	6	220	901	819	389
MTS-ROTS Circuit 1	23	220	696	573	287
MTS-ROTS Circuit 3	23	220	696	573	287
RCTS-BURG		220	1,454	266	266
ROTS A1 TRANS 220kV Connection	N/A	220	2,906	891	266
ROTS-RTS Circuit 1	3	220	430	256	10
ROTS-RTS Circuit 4	3	220	430	256	10
ROTS-RWTS	3	220	2,150	1,628	983
ROTS-SMTS 3	1	500	9,407	6,603	174
ROTS-SVTS Circuit 1	24	220	2,897	2,273	1,495
ROTS-SVTS Circuit 2	24	220	2,897	2,273	1,495
ROTS-TSTS	3	220	1,146	942	563
ROTS-TTS	3	220	440	92	0
ROTS-YPS Circuit 5	2	220	5,006	287	113
ROTS-YPS Circuit 6	2	220	5,006	287	113
ROTS-YPS Circuit 7	2	220	5,006	287	113
ROTS-YPS Circuit 8	2	220	5,006	287	113
RWTS-TTS	3	220	2,017	1,597	952
SMTS-SYTS Circuit 1	1, 7	500	3,880	1,904	41
SMTS-SYTS Circuit 2	1, 7	500	3,880	1,904	41
SMTS-TTS Circuit 1#		220	See H1 Trans		
SMTS-TTS Circuit 2#		220	See H2 Trans		
TSTS-TTS	3	220	1,208	983	573

Transformers

Transmission Element			Outage Rebate Rates Total ($/hour)		
Transformers	Group	Voltage	Period 1	Period 2	Period 3
DDTS H1 TRANS	T2	330/220	655	553	0
DDTS H2 TRANS	T2	330/220	655	553	0
DDTS H3 TRANS	T2	330/220	655	553	0
HWTS A1 TRANS (Includes	T3	500/220	737	532	10

Transmission Element			Outage Rebate Rates Total ($/hour)		
Transformers	Group	Voltage	Period 1	Period 2	Period 3
associated HWTS – HWPS line)					
HWTS A2 TRANS (Includes associated HWTS – HWPS line)	T3	500/220	737	532	10
HWTS A3 TRANS (Includes associated HWTS – HWPS line)	T3	500/220	737	532	10
HWTS A4 TRANS (Includes associated HWTS – HWPS line)	T3	500/220	737	532	10
HYTS M1 TRANS	T4	500/275	2,385	1,167	41
HYTS M2 TRANS	T4	500/275	2,385	1,167	41
KTS A2 TRANS	T1	500/220	1,341	983	20
KTS A3 TRANS	T1	500/220	1,341	983	20
KTS A4 TRANS	T1	500/220	1,341	983	20
MLTS A1 TRANS	T1, T2	500/220	2,876	1,904	256
ROTS A1 220/500KV TRANS	N/A	500/220	See ROTS A1 220kV Line		
SMTS H1 TRANS (Includes associated SMTS – TTS line)	T1	330/220	1,392	809	0
SMTS H2 TRANS (Includes associated SMTS – TTS line)	T1	330/220	1,392	809	0
SMTS F2 TRANS	T1	500/330	1,812	1,321	246

Reactive Plant

Transmission Element			Outage Rebate Rates Total ($/hour)		
Reactive Plant	Group	Voltage	Period 1	Period 2	Period 3
BLTS No4 200 MVAr capacitor		220	2,467	113	0
BATS No1 30MVAr Capacitor		66	471	10	0
BATS No2 23MVAr Capacitor		66	358	10	0
BETS No2B 23MVAr Capacitor		66	358	10	0
BETS No3B 23MVAr Capacitor		66	358	10	0
BLTS No1 100/125MVAr SynCon	R2	66	2,283	41	0
BTS No1 12MVAr Capacitor		22	194	10	0
BTS No3 12MVAr Capacitor		22	194	10	0
ERTS No1A 50MVAr Capacitor		66	788	10	0
ERTS No1B 50MVAr Capacitor		66	788	10	0
ERTS No3 45MVAr Capacitor		66	717	10	0
ERTS No4 45MVAr Capacitor		66	717	10	0
FBTS 220Kv No4 200 MVAr capacitor		220	2,467	113	0
FBTS No1 100/125 MVAr SynCon	R2	66	2,283	41	0
GNTS No1 23MVAr Capacitor		66	358	10	0
GTS No1 50MVAr Capacitor		66	788	10	0
GTS No4 23MVAr Capacitor		66	358	10	0
HOTS No1 – 50/-25 MVAr SVC	R1	220	1,106	10	0
HOTS No1 15 MVAr Station Reactor		66	0	0	102
HOTS No2 15 MVAr Station Reactor		66	0	0	102
HOTS No2 15MVAr Capacitor		66	235	10	0

Transmission Element			Outage Rebate Rates Total ($/hour)		
Reactive Plant	Group	Voltage	Period 1	Period 2	Period 3
HTS No1A 45MVAr Capacitor		66	717	10	0
HTS No1B 50MVAr Capacitor		66	788	10	0
HYTS 150 MVAr capacitor		275	1,546	307	10
KGTS No1 – 50/-25 MVAr SVC	R1	220	1,106	10	0
KGTS No1 15 MVAr Station Reactor		66	0	0	102
KGTS No1 5MVAr Capacitor		22	72	10	0
KTS 220kV No1 200 MVAr capacitor		220	2,467	113	0
KTS No1A 45MVAr Capacitor		66	717	10	0
KTS No1B 50MVAr Capacitor		66	788	10	0
MBTS No1 15 MVAr Station Reactor		66	102	0	102
MLTS No1 100 MVAr Station Reactor		220	0	0	102
MLTS No1 Line Reactor		500	0	0	102
MLTS No2 Line Reactor		500	0	0	102
RCTS No1 10MVAr Capacitor		66	154	10	0
RCTS No1 14.3 MVAr Station Reactor		66	0	0	102
RCTS No1 7MVAr Capacitor		22	113	10	0
RCTS No2 10MVAr Capacitor		66	154	10	0
RCTS No2 14.3 MVAr Station Reactor		66	0	0	102
RCTS No2 7MVAr Capacitor		22	113	10	0
ROTS 220kV No1 200 MVAr capacitor		220	2,467	113	0
ROTS 220kV No2 200 MVAr capacitor		220	2,467	113	0
ROTS No1 – 100 /-60 MVAr SVC	R1, R2	220	2,232	20	0
ROTS No2 – 100 /-60 MVAr SVC	R1, R2	220	2,232	20	0
RTS No1 45MVAr Capacitor		66	717	10	0
RTS No4 45MVAr Capacitor		66	717	10	0
RWTS 220kV No1 200 MVAr capacitor		220	2,467	113	0
RWTS No2A 45MVAr Capacitor		66	717	10	0
RWTS No2B 50MVAr Capacitor		66	788	10	0
SHTS No2A 23MVAr Capacitor		66	358	10	0
SHTS No2B 25MVAr Capacitor		66	399	10	0
SHTS No3A 23MVAr Capacitor		66	358	10	0
SHTS No3B 25MVAr Capacitor		66	399	10	0
SVTS No1 50MVAr Capacitor		66	798	10	0
SVTS No3A 45MVAr Capacitor		66	717	10	0
SVTS No3B 50MVAr Capacitor		66	788	10	0
TGTS No1 25MVAr Capacitor		66	389	10	0
TSTS 220kV No1 200 MVAr capacitor		220	2,467	112	0
TSTS No1 100/125 MVAr SynCon	R2	66	2,283	41	0
TTS 220kV No1 200 MVAr capacitor		220	2,467	112	0
TTS 220kV No3 200 MVAr capacitor		220	2,467	112	0
TTS No2 45MVAr Capacitor		66	717	10	0
TTS No4A 45MVAr Capacitor		66	717	10	0
TTS No4B 50MVAr Capacitor		66	788	10	0
WMTS No2 45MVAr Capacitor		66	717	10	0
WMTS No3 45MVAr Capacitor		66	717	10	0

APPENDIX C: MIP TRANSMISSION ELEMENTS LIST

Circuits

Circuit	Criticality
HYTS-APD 1 500KV W	CRITICAL ELEMENT
HYTS-APD 2 500KV W	CRITICAL ELEMENT
BATS-BETS 220KV	CRITICAL ELEMENT
BATS-WBTS-HOTS 220KV W	CRITICAL ELEMENT
MLTS-BATS 1 220KV WY	CRITICAL ELEMENT
MLTS-BATS 2 220KV WY	CRITICAL ELEMENT
BATS-TGTS 220KV WW	CRITICAL ELEMENT
BETS-FVTS-SHTS 220KV NB	CRITICAL ELEMENT
BETS-KGTS 220KV NB	CRITICAL ELEMENT
BSS 220KV LINE AT RCTS	CRITICAL ELEMENT
HWTS-CBTS 4 500KV G	CRITICAL ELEMENT
CBTS-ROTS 4 500KV E	CRITICAL ELEMENT
DDTS-GNTS 1 220KV NW	CRITICAL ELEMENT
DDTS-GNTS 3 220KV NW	CRITICAL ELEMENT
MSS -DDTS 1 330KV NW	CRITICAL ELEMENT
MSS -DDTS 2 330KV NW	CRITICAL ELEMENT
DDTS-SHTS 220KV NW	CRITICAL ELEMENT
DDTS-SMTS 1 330KV	CRITICAL ELEMENT
DDTS-SMTS 2 330KV	CRITICAL ELEMENT
WOTS-DDTS 330KV NW	CRITICAL ELEMENT
MBTS-DDTS 1 220KV NW	CRITICAL ELEMENT
MBTS-DDTS 2 220KV NW	CRITICAL ELEMENT
DPS -MBTS 220KV NW	CRITICAL ELEMENT
EPS -TTS 1 220KV N	CRITICAL ELEMENT
MBTS-EPS 1 220KV N	NON CRITICAL ELEMENT
MBTS-EPS 2 220KV N	NON CRITICAL ELEMENT
GNTS-SHTS 1 220KV N	CRITICAL ELEMENT
GNTS-SHTS 3 220KV NW	CRITICAL ELEMENT
GTS -PTH 1 220KV WY	CRITICAL ELEMENT
GTS -PTH 2 220KV WY	CRITICAL ELEMENT
KTS -GTS 1 220KV WY	CRITICAL ELEMENT
KTS -GTS 2 220KV WY	CRITICAL ELEMENT
KTS -GTS 3 220KV WY	CRITICAL ELEMENT
MLTS-GTS 1 220KV WY	CRITICAL ELEMENT
MLTS-GTS 2 220KV WY	CRITICAL ELEMENT
HOTS-RCTS 220KV	CRITICAL ELEMENT
HWPS-JLTS 1 220KV G	CRITICAL ELEMENT
HWPS-JLTS 2 220KV G	CRITICAL ELEMENT
HWPS-JLTS 3 220KV G	CRITICAL ELEMENT
HWPS-JLTS 4 220KV G	CRITICAL ELEMENT
HWPS-MPS-MWTS 220KV G	CRITICAL ELEMENT
HWPS-ROTS 1 220KV G	CRITICAL ELEMENT
HWPS-ROTS 2 220KV G	CRITICAL ELEMENT
HWPS-YPS 1 220KV G	CRITICAL ELEMENT
HWPS-YPS 2 220KV G	CRITICAL ELEMENT
LYPS-HWTS 1 500KV G	CRITICAL ELEMENT
LYPS-HWTS 2 500KV G	CRITICAL ELEMENT
LYPS-HWTS 3 500KV G	CRITICAL ELEMENT
HWTS-ROTS 3 500KV G	CRITICAL ELEMENT
HWTS-SMTS 1 500KV G	CRITICAL ELEMENT
HWTS-SMTS 2 500KV G	CRITICAL ELEMENT
MLTS-HYTS 1 500KV W	CRITICAL ELEMENT

Circuit	Criticality
MLTS-MOPS 2 500KV	CRITICAL ELEMENT
MOPS-HYTS 2 500KV	CRITICAL ELEMENT
HYTS-SESS 1 275KV WH	CRITICAL ELEMENT
HYTS-SESS 2 275KV WH	CRITICAL ELEMENT
JDSS-WOTS 330KV NW	CRITICAL ELEMENT
JLTS-MWTS 1 220KV G	CRITICAL ELEMENT
JLTS-MWTS 2 220KV G	CRITICAL ELEMENT
KGTS-RCTS 220KV NB	CRITICAL ELEMENT
KTS -WMTS 1 220KV WT	CRITICAL ELEMENT
KTS -WMTS 2 220KV WT	CRITICAL ELEMENT
SMTS-KTS 500KV WT	CRITICAL ELEMENT
SYTS-KTS 500KV WT	CRITICAL ELEMENT
TTS -KTS 1N220KV WT	CRITICAL ELEMENT
TTS -KTS 2N220KV W	CRITICAL ELEMENT
MKPS-MBTS 220KV NW	CRITICAL ELEMENT
WKPS-MBTS 220KV NW	CRITICAL ELEMENT
SYTS-MLTS 1 500KV WY	CRITICAL ELEMENT
SYTS-MLTS 2 500KV WY	CRITICAL ELEMENT
MLTS-TGTS 220KV W	CRITICAL ELEMENT
ROTS-SMTS 3 500KV EM	CRITICAL ELEMENT
ROTS-TTS 220KV E	NON CRITICAL ELEMENT
YPS -ROTS 5 220KV G	CRITICAL ELEMENT
YPS -ROTS 6 220KV G	CRITICAL ELEMENT
YPS -ROTS 7 220KV G	CRITICAL ELEMENT
YPS -ROTS 8 220KV G	CRITICAL ELEMENT
RWTS-TTS 220KV E	CRITICAL ELEMENT
SMTS-SYTS 1 500KV WT	CRITICAL ELEMENT
SMTS-SYTS 2 500KV WT	CRITICAL ELEMENT
SMTS-TTS 1 220KV WT	CRITICAL ELEMENT
SMTS-TTS 2 220KV WT	CRITICAL ELEMENT
TSTS-TTS 220KV E	CRITICAL ELEMENT

Transformers

Transformer	Criticality
H1 330/220KV TRANS BANK AT DDTS	CRITICAL ELEMENT
H2 330/220KV TRANS AT DDTS	CRITICAL ELEMENT
H3 330/220KV TRANS AT DDTS	CRITICAL ELEMENT
A1 515/230KV MAIN TRANS AT HWTS	CRITICAL ELEMENT
A2 515/230KV TRANS BANK AT HWTS	CRITICAL ELEMENT
A3 515/230KV TRANS BANK AT HWTS	CRITICAL ELEMENT
A4 515/230KV TRANS BANK AT HWTS	CRITICAL ELEMENT
M1 500/275KV TRANS AT HYTS	CRITICAL ELEMENT
M2 500/275KV TRANS AT HYTS	CRITICAL ELEMENT
A2 500/220KV TRANS BANK AT KTS	CRITICAL ELEMENT
A3 500/220KV TRANS BANK AT KTS	CRITICAL ELEMENT
A4 500/220KV TRANS BANK AT KTS	CRITICAL ELEMENT
A1 500/220KV TRANS BANK AT MLTS	CRITICAL ELEMENT
F2 500/330KV TRANS BANK AT SMTS	CRITICAL ELEMENT
H1 330/220KV TRANS BANK AT SMTS	CRITICAL ELEMENT
H2 330/220KV TRANS BANK AT SMTS	CRITICAL ELEMENT

Reactive Plant

Reactive Plant	Criticality
Capacitor Banks	
NO.4 220KV CAPACITOR BANK AT BLTS	CRITICAL ELEMENT
NO.4 220KV CAPACITOR BANK AT FBTS	CRITICAL ELEMENT
NO.1 275KV CAPACITOR BANK AT HYTS	CRITICAL ELEMENT
NO.1 220KV CAPACITOR BANK AT KTS	CRITICAL ELEMENT
NO.1 220KV CAPACITOR BANK AT MLTS	CRITICAL ELEMENT
NO.1 220KV CAPACITOR BANK AT RCTS	CRITICAL ELEMENT
NO.2 220KV CAPACITOR BANK AT RCTS	CRITICAL ELEMENT
NO.2 220KV CAPACITOR BANK AT ROTS	CRITICAL ELEMENT
NO.3 220KV CAPACITOR BANK AT ROTS	CRITICAL ELEMENT
NO.2 220KV CAPACITOR BANK AT RWTS	CRITICAL ELEMENT
NO.1 220KV CAPACITOR BANK AT TSTS	CRITICAL ELEMENT
NO.1 220KV CAPACITOR BANK AT TTS	CRITICAL ELEMENT
NO.3 220KV CAPACITOR BANK AT TTS	CRITICAL ELEMENT
SVC	
STATIC VAR COMPENSATOR AT HOTS	CRITICAL ELEMENT
STATIC VAR COMPENSATOR AT KGTS	CRITICAL ELEMENT
NO.1 CSC AT ROTS	CRITICAL ELEMENT
NO.2 CSC AT ROTS	CRITICAL ELEMENT
SYNCON	
SYN/COND AT BLTS	NON CRITICAL ELEMENT
SYN/COND AT FBTS	NON CRITICAL ELEMENT
SYN/COND AT TSTS	NON CRITICAL ELEMENT
Reactor	
HYTS 1 500KV LINE SHUNT REACT AT MLTS	NON CRITICAL ELEMENT
HYTS 2 500KV LINE SHUNT REACT AT MLTS	NON CRITICAL ELEMENT
220KV SHUNT REACTOR AT MLTS	NON CRITICAL ELEMENT
NO.1 66KV REACTOR AT RCTS	NON CRITICAL ELEMENT
NO.2 66KV REACTOR AT RCTS	NON CRITICAL ELEMENT
NO.3 66KV REACTOR AT RCTS	NON CRITICAL ELEMENT
BUS	
NO.1 330KV BUS AT DDTS	CRITICAL ELEMENT
NO.2 330KV BUS AT DDTS	CRITICAL ELEMENT
NO.2 330KV BUS AT SMTS	CRITICAL ELEMENT

APPENDIX D: CONNECTION ASSETS

Circuits

Circuit	Asset type	Indicative new priority category
CBTS-FTS 1 66KV E	CONNECTION ASSET	METRO
CBTS-FTS 2 66KV E	CONNECTION ASSET	METRO

Transformers

Transformer	Asset type	Indicative new priority category
B2 220/66KV TRANS AT ATS	CONNECTION ASSET	METRO
B3 220/66KV TRANS AT ATS	CONNECTION ASSET	METRO
B1 220/66KV TRANS AT BATS	CONNECTION ASSET	REGIONAL
B2 220/66KV TRANS AT BATS	CONNECTION ASSET	REGIONAL
R2A/2B 220/66/22KV TRANS GRP AT BETS	CONNECTION ASSET	REGIONAL
R4 220/66/22KV TRANS AT BETS	CONNECTION ASSET	REGIONAL
B1 220/66KV TRANS BANK AT BLTS	CONNECTION ASSET	METRO
B2 220/66KV TRANS BANK AT BLTS	CONNECTION ASSET	METRO
B3A 220/66KV TRANS BANK AT BLTS	CONNECTION ASSET	METRO
B4 220/66KV TRANS AT BLTS	CONNECTION ASSET	METRO
B5 220/66KV TRANS GROUP AT BLTS	CONNECTION ASSET	METRO
L1 220/22KV TRANS BANK AT BLTS	CONNECTION ASSET	METRO
L2 220/22KV TRANS BANK AT BLTS	CONNECTION ASSET	METRO
U1 66/22KV TRANS AT BLTS	CONNECTION ASSET	METRO
L1 220/22KV TRANS AT BTS	CONNECTION ASSET	CBD
L2 220/22KV TRANS AT BTS	CONNECTION ASSET	CBD
L3 220/22KV TRANS AT BTS	CONNECTION ASSET	CBD
B1 220/66KV TRANS AT CBTS	CONNECTION ASSET	METRO
B2 220/66KV TRANS AT CBTS	CONNECTION ASSET	METRO
B1 220/66KV TRANS AT ERTS	CONNECTION ASSET	METRO
B3 220/66KV TRANS AT ERTS	CONNECTION ASSET	METRO
B4 220/66KV TRANS AT ERTS	CONNECTION ASSET	METRO
B1 220/66KV TRANS AT FBTS	CONNECTION ASSET	METRO
B3 220/66KV TRANS AT FBTS	CONNECTION ASSET	METRO
B4 220/66KV TRANS AT FBTS	CONNECTION ASSET	METRO
B1 220/66KV TRANS GROUP AT GNTS	CONNECTION ASSET	REGIONAL
B2 220/66KV TRANS AT GNTS	CONNECTION ASSET	REGIONAL
B1 220/66KV TRANS AT GTS	CONNECTION ASSET	METRO
B3 220/66KV TRANS AT GTS	CONNECTION ASSET	METRO
B4 220/66KV TRANS AT GTS	CONNECTION ASSET	METRO
B2 220/66KV TRANS AT HOTS	CONNECTION ASSET	REGIONAL
B3 220/66KV TRANS AT HOTS	CONNECTION ASSET	REGIONAL
B1 220/66KV TRANS AT HTS	CONNECTION ASSET	METRO
B2 220/66KV TRANS AT HTS	CONNECTION ASSET	METRO
B3 220/66KV TRANS AT HTS	CONNECTION ASSET	METRO
R1 220/66/22KV TRANS AT KGTS	CONNECTION ASSET	REGIONAL
R2 220/66/22KV TRANS AT KGTS	CONNECTION ASSET	REGIONAL
R3 220/66/22KV TRANS AT KGTS	CONNECTION ASSET	REGIONAL
B1 220/66KV TRANS AT KTS	CONNECTION ASSET	METRO
B2 220/66KV TRANS AT KTS	CONNECTION ASSET	METRO
B3 220/66KV TRANS AT KTS	CONNECTION ASSET	METRO
B4 220/66KV TRANS AT KTS	CONNECTION ASSET	METRO

Transformer	Asset type	Indicative new priority category
B1 220/66KV TRANS (HOT SPARE) AT MBTS	CONNECTION ASSET	REGIONAL
B2 220/66KV TRANS AT MBTS	CONNECTION ASSET	REGIONAL
NO.1 11/220KV TRANS BANK AT MPS	CONNECTION ASSET	REGIONAL
NO.2 11/220KV TRANS BANK AT MPS	CONNECTION ASSET	REGIONAL
B1 220/66KV TRANS AT MTS	CONNECTION ASSET	METRO
B3 220/66KV TRANS AT MTS	CONNECTION ASSET	METRO
U1 66/22KV TRANS AT MTS	CONNECTION ASSET	METRO
U2 66/22KV TRANS AT MTS	CONNECTION ASSET	METRO
B1 220/66KV TRANS AT MWTS	CONNECTION ASSET	REGIONAL
B2 220/66KV TRANS AT MWTS	CONNECTION ASSET	REGIONAL
B3 220/66KV TRANS AT MWTS	CONNECTION ASSET	REGIONAL
R1 220/66/22KV TRANS GROUP AT RCTS	CONNECTION ASSET	REGIONAL
R2 220/66/22KV TRANS GROUP AT RCTS	CONNECTION ASSET	REGIONAL
B1 220/66KV TRANS AT RTS	CONNECTION ASSET	CBD
B2 220/66KV TRANS AT RTS	CONNECTION ASSET	CBD
B3 220/66KV TRANS AT RTS	CONNECTION ASSET	CBD
B4 220/66KV TRANS AT RTS	CONNECTION ASSET	CBD
L1 220/22KV TRANS AT RTS	CONNECTION ASSET	CBD
L4 220/22KV TRANS AT RTS	CONNECTION ASSET	CBD
B2 220/66KV TRANS AT RWTS	CONNECTION ASSET	METRO
B3 220/66KV TRANS AT RWTS	CONNECTION ASSET	METRO
B4 220/66KV TRANS AT RWTS	CONNECTION ASSET	METRO
L2 220/22KV TRANS BANK AT RWTS	CONNECTION ASSET	METRO
L3 220/22KV TRANS BANK AT RWTS	CONNECTION ASSET	METRO
U1 66/22KV TRANS AT RWTS	CONNECTION ASSET	METRO
B2 220/66KV TRANS AT SHTS	CONNECTION ASSET	REGIONAL
B3 220/66KV TRANS AT SHTS	CONNECTION ASSET	REGIONAL
B4 220/66KV TRANS AT SHTS	CONNECTION ASSET	REGIONAL
COUNTRY SPARE 150MVA TRANS AT SMTS (O.O.S.)	CONNECTION ASSET	METRO
B1 220/66KV TRANS AT SVTS	CONNECTION ASSET	METRO
B2 220/66KV TRANS AT SVTS	CONNECTION ASSET	METRO
B3 220/66KV TRANS AT SVTS	CONNECTION ASSET	METRO
B4 220/66KV TRANS AT SVTS	CONNECTION ASSET	METRO
B1 220/66KV TRANS AT TBTS	CONNECTION ASSET	METRO
B2 220/66KV TRANS AT TBTS	CONNECTION ASSET	METRO
B1 220/66KV TRANS AT TGTS	CONNECTION ASSET	REGIONAL
B2 220/66KV TRANS AT TGTS	CONNECTION ASSET	REGIONAL
B1 220/66KV TRANS AT TSTS	CONNECTION ASSET	METRO
B2 220/66KV TRANS AT TSTS	CONNECTION ASSET	METRO
B3 220/66KV TRANS AT TSTS	CONNECTION ASSET	METRO
B1 220/66KV TRANS AT TTS	CONNECTION ASSET	METRO
B2 220/66KV TRANS AT TTS	CONNECTION ASSET	METRO
B3 220/66KV TRANS AT TTS	CONNECTION ASSET	METRO
B4 220/66KV TRANS AT TTS	CONNECTION ASSET	METRO
B5 220/66KV TRANS AT TTS	CONNECTION ASSET	METRO
B1 220/66KV TRANS AT WMTS	CONNECTION ASSET	CBD
B2 220/66KV TRANS AT WMTS	CONNECTION ASSET	CBD
B3 220/66KV TRANS AT WMTS	CONNECTION ASSET	CBD
B4 220/66KV TRANS AT WMTS	CONNECTION ASSET	CBD
L1 220/22KV TRANS AT WMTS	CONNECTION ASSET	CBD
L3 220/22KV TRANS AT WMTS	CONNECTION ASSET	CBD
NO.1 330/66/22KV TRANS AT WOTS	CONNECTION ASSET	REGIONAL
NO.2 330/66/22KV TRANS AT WOTS	CONNECTION ASSET	REGIONAL
5 GRP 220/11KV TRANS AT YPS	CONNECTION ASSET	REGIONAL

Transformer	Asset type	Indicative new priority category
AUX D 220/22KV TRANS AT YPS	CONNECTION ASSET	REGIONAL
AUX E 220/22KV TRANS AT YPS	CONNECTION ASSET	REGIONAL

Reactive Plant

Reactive plant	Asset type	Indicative new priority category
Capacitor Banks		
NO.1 22KV CAPACITOR BANK AT RWTS	CONNECTION ASSET	METRO
NO.2 22KV CAPACITOR BANK AT RWTS	CONNECTION ASSET	METRO

APPENDIX E: PROPOSED STIPS AVAILABILITY LIST

Circuits

Circuit	Connection or Shared Network Asset	Critical/Non-Critical (current STPIS category)	Indicative new priority category
ATS -BLTS 220KV WY	SHARED NETWORK ASSET	CRITICAL ELEMENT	METRO
KTS -ATS 220KV WY	SHARED NETWORK ASSET	CRITICAL ELEMENT	METRO
FBTS-BLTS 220KV WY	SHARED NETWORK ASSET	NON CRITICAL ELEMENT	METRO
KTS -BLTS 220KV WY	SHARED NETWORK ASSET	CRITICAL ELEMENT	METRO
NPSD-BLTS 220KV WY	SHARED NETWORK ASSET	CRITICAL ELEMENT	METRO
BTS -RTS 220KV W (BTS to Joint Bay 7)	SHARED NETWORK ASSET	CRITICAL ELEMENT	CBD
TTS -BTS 1 220KV WT	SHARED NETWORK ASSET	CRITICAL ELEMENT	CBD
TTS -BTS 3 220KV WT	SHARED NETWORK ASSET	CRITICAL ELEMENT	CBD
ERTS-CBTS 1 220KV E	SHARED NETWORK ASSET	CRITICAL ELEMENT	METRO
ERTS-CBTS 2 220KV E	SHARED NETWORK ASSET	CRITICAL ELEMENT	METRO
CBTS-FTS 1 66KV E	CONNECTION ASSET		METRO
CBTS-FTS 2 66KV E	CONNECTION ASSET		METRO
CBTS-TBTS 1 220KV E	SHARED NETWORK ASSET	CRITICAL ELEMENT	METRO
CBTS-TBTS 2 220KV E	SHARED NETWORK ASSET	CRITICAL ELEMENT	METRO
ERTS-ROTS 1 220KV E	SHARED NETWORK ASSET	CRITICAL ELEMENT	METRO
ERTS-ROTS 2 220KV E	SHARED NETWORK ASSET	CRITICAL ELEMENT	METRO
NPSD-FBTS 220KV WY	SHARED NETWORK ASSET	CRITICAL ELEMENT	METRO
WMTS-FBTS 1 220KV WY	SHARED NETWORK ASSET	NON CRITICAL ELEMENT	CBD
WMTS-FBTS 2 220KV WY	SHARED NETWORK ASSET	NON CRITICAL ELEMENT	CBD
SVTS-HTS 1 220KV E	SHARED NETWORK ASSET	CRITICAL ELEMENT	METRO
SVTS-HTS 2 220KV E	SHARED NETWORK ASSET	CRITICAL ELEMENT	METRO
TBTS-JLA 1 220KV E	SHARED NETWORK ASSET	CRITICAL ELEMENT	METRO
TBTS-JLA 2 220KV E	SHARED NETWORK ASSET	CRITICAL ELEMENT	METRO
MWTS-LY 1 66KV G	SHARED NETWORK ASSET	CRITICAL ELEMENT	REGIONAL
MWTS-LY 2 66KV G	SHARED NETWORK ASSET	CRITICAL ELEMENT	REGIONAL
MWTS-LY 3 66KV G	SHARED NETWORK ASSET	CRITICAL ELEMENT	REGIONAL
MWTS-LY 4 66KV G	SHARED NETWORK ASSET	CRITICAL ELEMENT	REGIONAL

Circuit	Connection or Shared Network Asset	Critical/Non-Critical (current STPIS category)	Indicative new priority category
ROTS-MTS 1 220KV E	SHARED NETWORK ASSET	CRITICAL ELEMENT	METRO
ROTS-MTS 3 220KV E	SHARED NETWORK ASSET	CRITICAL ELEMENT	METRO
ROTS-RTS 1 220KV E	SHARED NETWORK ASSET	CRITICAL ELEMENT	CBD
ROTS-RTS 4 220KV E	SHARED NETWORK ASSET	CRITICAL ELEMENT	CBD
ROTS-RWTS 220KV E	SHARED NETWORK ASSET	CRITICAL ELEMENT	METRO
ROTS-SVTS 1 220KV E	SHARED NETWORK ASSET	CRITICAL ELEMENT	METRO
ROTS-SVTS 2 220KV E	SHARED NETWORK ASSET	CRITICAL ELEMENT	METRO
ROTS-TSTS 220KV E	SHARED NETWORK ASSET	CRITICAL ELEMENT	METRO

Transformers

Transformer	Connection or Shared Network Asset	Critical/Non-Critical (current STPIS category)	Indicative new priority category
B2 220/66KV TRANS AT ATS	CONNECTION ASSET		METRO
B3 220/66KV TRANS AT ATS	CONNECTION ASSET		METRO
B1 220/66KV TRANS AT BATS	CONNECTION ASSET		REGIONAL
B2 220/66KV TRANS AT BATS	CONNECTION ASSET		REGIONAL
R2A/2B 220/66/22KV TRANS GRP AT BETS	CONNECTION ASSET		REGIONAL
R4 220/66/22KV TRANS AT BETS	CONNECTION ASSET		REGIONAL
B1 220/66KV TRANS BANK AT BLTS	CONNECTION ASSET		METRO
B2 220/66KV TRANS BANK AT BLTS	CONNECTION ASSET		METRO
B3A 220/66KV TRANS BANK AT BLTS	CONNECTION ASSET		METRO
B4 220/66KV TRANS AT BLTS	CONNECTION ASSET		METRO
B5 220/66KV TRANS GROUP AT BLTS	CONNECTION ASSET		METRO
L1 220/22KV TRANS BANK AT BLTS	CONNECTION ASSET		METRO
L2 220/22KV TRANS BANK AT BLTS	CONNECTION ASSET		METRO
U1 66/22KV TRANS AT BLTS	CONNECTION ASSET		METRO
L1 220/22KV TRANS AT BTS	CONNECTION ASSET		CBD
L2 220/22KV TRANS AT BTS	CONNECTION ASSET		CBD

Transformer	Connection or Shared Network Asset	Critical/Non-Critical (current STPIS category)	Indicative new priority category
L3 220/22KV TRANS AT BTS	CONNECTION ASSET		CBD
B1 220/66KV TRANS AT CBTS	CONNECTION ASSET		METRO
B2 220/66KV TRANS AT CBTS	CONNECTION ASSET		METRO
B1 220/66KV TRANS AT ERTS	CONNECTION ASSET		METRO
B3 220/66KV TRANS AT ERTS	CONNECTION ASSET		METRO
B4 220/66KV TRANS AT ERTS	CONNECTION ASSET		METRO
B1 220/66KV TRANS AT FBTS	CONNECTION ASSET		METRO
B3 220/66KV TRANS AT FBTS	CONNECTION ASSET		METRO
B4 220/66KV TRANS AT FBTS	CONNECTION ASSET		METRO
B1 220/66KV TRANS GROUP AT GNTS	CONNECTION ASSET		REGIONAL
B2 220/66KV TRANS AT GNTS	CONNECTION ASSET		REGIONAL
B1 220/66KV TRANS AT GTS	CONNECTION ASSET		METRO
B3 220/66KV TRANS AT GTS	CONNECTION ASSET		METRO
B4 220/66KV TRANS AT GTS	CONNECTION ASSET		METRO
B2 220/66KV TRANS AT HOTS	CONNECTION ASSET		REGIONAL
B3 220/66KV TRANS AT HOTS	CONNECTION ASSET		REGIONAL
B1 220/66KV TRANS AT HTS	CONNECTION ASSET		METRO
B2 220/66KV TRANS AT HTS	CONNECTION ASSET		METRO
B3 220/66KV TRANS AT HTS	CONNECTION ASSET		METRO
R1 220/66/22KV TRANS AT KGTS	CONNECTION ASSET		REGIONAL
R2 220/66/22KV TRANS AT KGTS	CONNECTION ASSET		REGIONAL
R3 220/66/22KV TRANS AT KGTS	CONNECTION ASSET		REGIONAL
B1 220/66KV TRANS AT KTS	CONNECTION ASSET		METRO
B2 220/66KV TRANS AT KTS	CONNECTION ASSET		METRO
B3 220/66KV TRANS AT KTS	CONNECTION ASSET		METRO
B4 220/66KV TRANS AT KTS	CONNECTION ASSET		METRO
B1 220/66KV TRANS (HOT SPARE) AT MBTS	CONNECTION ASSET		REGIONAL
B2 220/66KV TRANS AT MBTS	CONNECTION ASSET		REGIONAL
NO.1 11/220KV TRANS BANK AT MPS	CONNECTION ASSET		REGIONAL
NO.2 11/220KV TRANS BANK AT MPS	CONNECTION ASSET		REGIONAL
B1 220/66KV TRANS AT MTS	CONNECTION ASSET		METRO

Transformer	Connection or Shared Network Asset	Critical/Non-Critical (current STPIS category)	Indicative new priority category
B3 220/66KV TRANS AT MTS	CONNECTION ASSET		METRO
U1 66/22KV TRANS AT MTS	CONNECTION ASSET		METRO
U2 66/22KV TRANS AT MTS	CONNECTION ASSET		METRO
B1 220/66KV TRANS AT MWTS	CONNECTION ASSET		REGIONAL
B2 220/66KV TRANS AT MWTS	CONNECTION ASSET		REGIONAL
B3 220/66KV TRANS AT MWTS	CONNECTION ASSET		REGIONAL
R1 220/66/22KV TRANS GROUP AT RCTS	CONNECTION ASSET		REGIONAL
R2 220/66/22KV TRANS GROUP AT RCTS	CONNECTION ASSET		REGIONAL
B1 220/66KV TRANS AT RTS	CONNECTION ASSET		CBD
B2 220/66KV TRANS AT RTS	CONNECTION ASSET		CBD
B3 220/66KV TRANS AT RTS	CONNECTION ASSET		CBD
B4 220/66KV TRANS AT RTS	CONNECTION ASSET		CBD
L1 220/22KV TRANS AT RTS	CONNECTION ASSET		CBD
L4 220/22KV TRANS AT RTS	CONNECTION ASSET		CBD
B2 220/66KV TRANS AT RWTS	CONNECTION ASSET		METRO
B3 220/66KV TRANS AT RWTS	CONNECTION ASSET		METRO
B4 220/66KV TRANS AT RWTS	CONNECTION ASSET		METRO
L2 220/22KV TRANS BANK AT RWTS	CONNECTION ASSET		METRO
L3 220/22KV TRANS BANK AT RWTS	CONNECTION ASSET		METRO
U1 66/22KV TRANS AT RWTS	CONNECTION ASSET		METRO
B2 220/66KV TRANS AT SHTS	CONNECTION ASSET		REGIONAL
B3 220/66KV TRANS AT SHTS	CONNECTION ASSET		REGIONAL
B4 220/66KV TRANS AT SHTS	CONNECTION ASSET		REGIONAL
COUNTRY SPARE 150MVA TRANS AT SMTS (O.O.S.)	CONNECTION ASSET		METRO
B1 220/66KV TRANS AT SVTS	CONNECTION ASSET		METRO
B2 220/66KV TRANS AT SVTS	CONNECTION ASSET		METRO
B3 220/66KV TRANS AT SVTS	CONNECTION ASSET		METRO
B4 220/66KV TRANS AT SVTS	CONNECTION ASSET		METRO
B1 220/66KV TRANS AT TBTS	CONNECTION ASSET		METRO
B2 220/66KV TRANS AT TBTS	CONNECTION ASSET		METRO
B1 220/66KV TRANS AT TGTS	CONNECTION ASSET		REGIONAL

Transformer	Connection or Shared Network Asset	Critical/Non-Critical (current STPIS category)	Indicative new priority category
B2 220/66KV TRANS AT TGTS	CONNECTION ASSET		REGIONAL
B1 220/66KV TRANS AT TSTS	CONNECTION ASSET		METRO
B2 220/66KV TRANS AT TSTS	CONNECTION ASSET		METRO
B3 220/66KV TRANS AT TSTS	CONNECTION ASSET		METRO
B1 220/66KV TRANS AT TTS	CONNECTION ASSET		METRO
B2 220/66KV TRANS AT TTS	CONNECTION ASSET		METRO
B3 220/66KV TRANS AT TTS	CONNECTION ASSET		METRO
B4 220/66KV TRANS AT TTS	CONNECTION ASSET		METRO
B5 220/66KV TRANS AT TTS	CONNECTION ASSET		METRO
B1 220/66KV TRANS AT WMTS	CONNECTION ASSET		CBD
B2 220/66KV TRANS AT WMTS	CONNECTION ASSET		CBD
B3 220/66KV TRANS AT WMTS	CONNECTION ASSET		CBD
B4 220/66KV TRANS AT WMTS	CONNECTION ASSET		CBD
L1 220/22KV TRANS AT WMTS	CONNECTION ASSET		CBD
L3 220/22KV TRANS AT WMTS	CONNECTION ASSET		CBD
NO.1 330/66/22KV TRANS AT WOTS	CONNECTION ASSET		REGIONAL
NO.2 330/66/22KV TRANS AT WOTS	CONNECTION ASSET		REGIONAL
5 GRP 220/11KV TRANS AT YPS	CONNECTION ASSET		REGIONAL
AUX D 220/22KV TRANS AT YPS	CONNECTION ASSET		REGIONAL
AUX E 220/22KV TRANS AT YPS	CONNECTION ASSET		REGIONAL

Reactive Plant

Circuit	Connection or Shared Network Asset	Critical/Non-Critical (current STPIS category)	Indicative new priority category
Capacitor Banks			
NO.1 66KV CAPACITOR BANK AT BATS	SHARED NETWORK ASSET	NON CRITICAL ELEMENT	REGIONAL
NO.2 66KV CAPACITOR BANK AT BATS	SHARED NETWORK ASSET	NON CRITICAL ELEMENT	REGIONAL

Circuit	Connection or Shared Network Asset	Critical/Non-Critical (current STPIS category)	Indicative new priority category
NO.2B 66KV CAPACITOR BANK AT BETS	SHARED NETWORK ASSET	NON CRITICAL ELEMENT	REGIONAL
NO.3B 66KV CAPACITOR BANK AT BETS	SHARED NETWORK ASSET	NON CRITICAL ELEMENT	REGIONAL
NO.1 22KV CAPACITOR BANK AT BTS	SHARED NETWORK ASSET	NON CRITICAL ELEMENT	CBD
NO.3 22KV CAPACITOR BANK AT BTS	SHARED NETWORK ASSET	NON CRITICAL ELEMENT	CBD
NO.1A 66KV CAPACITOR BANK AT ERTS	SHARED NETWORK ASSET	NON CRITICAL ELEMENT	METRO
NO.1B 66KV CAPACITOR BANK AT ERTS	SHARED NETWORK ASSET	NON CRITICAL ELEMENT	METRO
NO.3 66KV CAPACITOR BANK AT ERTS	SHARED NETWORK ASSET	NON CRITICAL ELEMENT	METRO
NO.4 66KV CAPACITOR BANK AT ERTS	SHARED NETWORK ASSET	NON CRITICAL ELEMENT	METRO
NO.1 66KV CAPACITOR BANK AT GNTS	SHARED NETWORK ASSET	NON CRITICAL ELEMENT	REGIONAL
NO.1 66KV CAPACITOR BANK AT GTS	SHARED NETWORK ASSET	NON CRITICAL ELEMENT	METRO
NO.4 66KV CAPACITOR BANK AT GTS	SHARED NETWORK ASSET	NON CRITICAL ELEMENT	METRO
NO.1A 66KV CAPACITOR BANK AT HOTS	SHARED NETWORK ASSET	NON CRITICAL ELEMENT	REGIONAL
NO.1B 66KV CAPACITOR BANK AT HOTS	SHARED NETWORK ASSET	NON CRITICAL ELEMENT	REGIONAL
NO.2 66KV CAPACITOR BANK AT HOTS	SHARED NETWORK ASSET	NON CRITICAL ELEMENT	REGIONAL
NO.1A 66KV CAPACITOR BANK AT HTS	SHARED NETWORK ASSET	NON CRITICAL ELEMENT	METRO
NO.1B 66KV CAPACITOR BANK AT HTS	SHARED NETWORK ASSET	NON CRITICAL ELEMENT	METRO
NO.1 66KV CAPACITOR BANK AT KGTS	SHARED NETWORK ASSET	NON CRITICAL ELEMENT	REGIONAL
NO.2 66KV CAPACITOR BANK AT KGTS	SHARED NETWORK ASSET	NON CRITICAL ELEMENT	REGIONAL
NO.2 22KV CAPACITOR BANK AT KGTS	SHARED NETWORK ASSET	NON CRITICAL ELEMENT	REGIONAL
NO.1A 66KV CAPACITOR BANK AT KTS	SHARED NETWORK ASSET	NON CRITICAL ELEMENT	METRO
NO.1B 66KV CAPACITOR BANK AT KTS	SHARED NETWORK ASSET	NON CRITICAL ELEMENT	METRO
NO.1 66KV CAPACITOR BANK AT LY	SHARED NETWORK ASSET	NON CRITICAL ELEMENT	REGIONAL
NO.2 66KV CAPACITOR BANK AT LY	SHARED NETWORK ASSET	NON CRITICAL ELEMENT	REGIONAL
NO.1 66KV CAPACITOR BANK AT RCTS	SHARED NETWORK ASSET	NON CRITICAL ELEMENT	REGIONAL
NO.2 66KV CAPACITOR BANK AT RCTS	SHARED NETWORK ASSET	NON CRITICAL ELEMENT	REGIONAL
NO.1 22KV CAPACITOR BANK AT RCTS	SHARED NETWORK ASSET	NON CRITICAL ELEMENT	REGIONAL
NO.2 22KV CAPACITOR BANK AT RCTS	SHARED NETWORK ASSET	NON CRITICAL ELEMENT	REGIONAL
NO.1 66KV CAPACITOR BANK AT RTS	SHARED NETWORK ASSET	NON CRITICAL ELEMENT	CBD
NO.4 66KV CAPACITOR BANK AT RTS	SHARED NETWORK ASSET	NON CRITICAL ELEMENT	CBD
NO.2A 66KV CAPACITOR BANK AT RWTS	SHARED NETWORK ASSET	NON CRITICAL ELEMENT	METRO
NO.2B 66KV CAPACITOR BANK AT RWTS	SHARED NETWORK ASSET	NON CRITICAL ELEMENT	METRO

Circuit	Connection or Shared Network Asset	Critical/Non-Critical (current STPIS category)	Indicative new priority category
NO.1 22KV CAPACITOR BANK AT RWTS	CONNECTION ASSET		METRO
NO.2 22KV CAPACITOR BANK AT RWTS	CONNECTION ASSET		METRO
NO.2A 66KV CAPACITOR BANK AT SHTS	SHARED NETWORK ASSET	NON CRITICAL ELEMENT	REGIONAL
NO.2B 66KV CAPACITOR BANK AT SHTS	SHARED NETWORK ASSET	NON CRITICAL ELEMENT	REGIONAL
NO.3A 66KV CAPACITOR BANK AT SHTS	SHARED NETWORK ASSET	NON CRITICAL ELEMENT	REGIONAL
NO.3B 66KV CAPACITOR BANK AT SHTS	SHARED NETWORK ASSET	NON CRITICAL ELEMENT	REGIONAL
NO.1 66KV CAPACITOR BANK AT SVTS	SHARED NETWORK ASSET	NON CRITICAL ELEMENT	METRO
NO.4A 66KV CAPACITOR BANK AT SVTS	SHARED NETWORK ASSET	NON CRITICAL ELEMENT	METRO
NO.4B 66KV CAPACITOR BANK AT SVTS	SHARED NETWORK ASSET	NON CRITICAL ELEMENT	METRO
66KV CAPACITOR BANK AT TGTS	SHARED NETWORK ASSET	NON CRITICAL ELEMENT	REGIONAL
NO.2 66KV CAPACITOR BANK AT TTS	SHARED NETWORK ASSET	NON CRITICAL ELEMENT	METRO
NO.4A 66KV CAPACITOR BANK AT TTS	SHARED NETWORK ASSET	NON CRITICAL ELEMENT	METRO
NO.4B 66KV CAPACITOR BANK AT TTS	SHARED NETWORK ASSET	NON CRITICAL ELEMENT	METRO
NO.2 66KV CAPACITOR BANK AT WMTS	SHARED NETWORK ASSET	NON CRITICAL ELEMENT	CBD
NO.3 66KV CAPACITOR BANK AT WMTS	SHARED NETWORK ASSET	NON CRITICAL ELEMENT	CBD
Reactor			
NO.1 66KV REACTOR AT HOTS	SHARED NETWORK ASSET	NON CRITICAL ELEMENT	Reverse peaking
NO.2 66KV REACTOR AT HOTS	SHARED NETWORK ASSET	NON CRITICAL ELEMENT	Reverse peaking
66KV SHUNT REACTOR AT KGTS	SHARED NETWORK ASSET	NON CRITICAL ELEMENT	Reverse peaking