Australian Competition and Consumer Commission (ACCC)

Audit of SPI PowerNet Service Standards Performance Reporting

PERFORMANCE RESULTS FOR 2004

- Final Report
- 3 March 2005

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and Consumer Commission

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1. Executive Summary

Sinclair Knight Merz (SKM) was engaged by the Australian Competition and Consumer Commission (ACCC) to conduct an audit of the year 2004 performance report of SPI PowerNet under the ACCC Performance Incentive (PI) Scheme.

The audit concentrated on a review of the performance results submitted by SPI PowerNet, in particular:

- the adequacy and accuracy of the recording system used to measure performance
- the accuracy of the calculations of the final performance; and
- the force majeure events and other exclusions to ensure compliance with the revenue caps and ACCC service standards guidelines.

As the auditor, SKM met with SPI PowerNet staff in Melbourne on Tuesday 15 February 2005, to review their data, systems and processes for gathering and processing outage information. The integrity of the system established by SPI PowerNet for retrieving data from the MAXIMO maintenance system for reporting under both the ACCC PI Scheme and the VENCorp Availability Incentive Scheme (AIS) was audited. In addition, specific events were reviewed to examine any particular issues associated with the claim for exclusion.

As a result of audit activities undertaken, Sinclair Knight Merz has formed an opinion that:

- the performance reporting by SPI PowerNet was free from material errors and in accordance with the requirements of the ACCC service standards guidelines, subject to clarification of the definition of some exclusions noted;
- SPI PowerNet has correctly applied the PI Scheme formulas and coefficients to calculate the potential performance bonus / penalty amounts using the S-factor equations contained in the revenue determination;
- the recording system used by SPI PowerNet to capture the relevant details for outages is accurate and reliable;
- the categorisation of assets within the MAXIMO maintenance system is appropriate and consistent with the categorisation under the ACCC PI Scheme for critical and non-critical assets;
- the audit of the interface programs between MAXIMO and the performance reporting files found the transfer of data to be accurate and complete;
- the application of exclusions was generally in accordance with historical calculation of performance and with the definitions historically applied;

- the exclusions for the specified events relating to shunt reactors appear to be in accordance with historical performance reporting; and
- the application of the force majeure to the events affected by industrial disputation was consistent with the agreed definition, whilst the application of force majeure to the bushfire event was not considered to satisfy the definition included in the revenue cap decision.

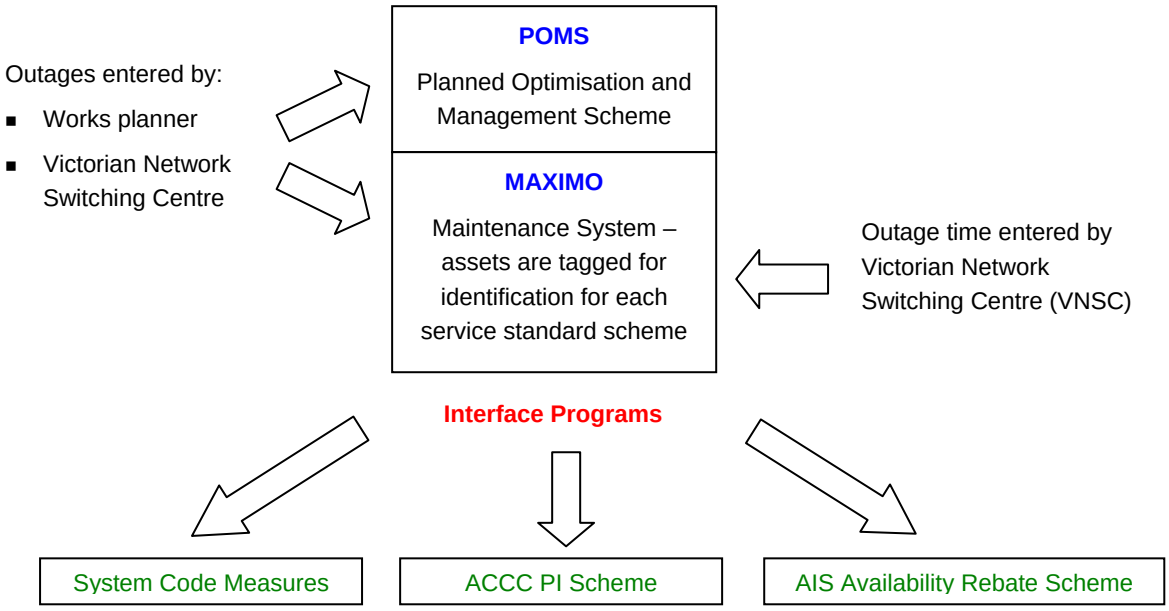
SKM recommends:

- SPI PowerNet's calculation of its S factor and performance incentive be accepted as free from material errors;
- The Commission accept SPI PowerNet's exclusion of shunt reactors, on the basis that the outage was conducted in accordance with good practice;
- The Commission accept SPI PowerNet's force majeure exclusion relating to events affected by industrial action on the part of electrical workers in Victoria, noting that SPI PowerNet has only sought to exclude the period by which the outage was extended due to force majeure, and has included the remaining portion of this outage as being under its control; and
- The bonus for SPI PowerNet under the ACCC PI Scheme for 2004 is **$609,750**.

2. Recording System

An overview of the SPI PowerNet outage management systems is shown in Figure 2-1.

- **Figure 2-1 Outage Management Systems**



The POMS module became fully operational in November / December 2003, and is a planned / unplanned maintenance support package which is intended to ensure that maintenance is arranged to meet the goals of the service standards schemes.

For each planned or unplanned outage, a Works Order is initiated through POMS, detailing the known details of any fault and the nature of work required. A mandatory field has been added to the Works Order so that the reason for the outage is coded (refer section 3.1). This field offers a drop down selection of coding options from which the planner makes a selection. The coding for Works Orders is reviewed daily by the Works Planning Manager to ensure it is appropriate.

In the MAXIMO maintenance system, each system element has been tagged with identification codes to identify whether it is critical or non-critical to facilitate for reliable data processing. The outage details from POMS are combined with the asset tags to provide a single source of data for reporting to the different performance schemes and statistics as required by the Victorian System Code and Network Agreement with VENCorp.

2.1 Outage Details

For each system outage, there is a System Outage Request form accompanied by a Switching Log and Permits form. The switching times are recorded by the controller and transferred to the relevant Works Order in MAXIMO.

2.2 Categorisation and Exclusions

Dependent upon the outage reason code applied to the Works Order, the event may be excluded from consideration under either the ACCC PI Scheme or the VENCorp AIS scheme. These exclusions are historically based on those that have been previously agreed with VENCorp, and relate to impacts on network element availability that SPI PowerNet is unable to manage.

Maintenance staff through the POMS system enter the categorisation for an outage at the time of signing off the Work Order. The coding of the event is mandatory, and Works Orders cannot be closed without this information being supplied. The Works Planning Manager and other senior staff review the coding to ensure that the reason for each event has been correctly categorised.

2.3 Processing of Outage Data

SPI PowerNet has developed an interface program that extracts relevant data from MAXIMO into an Excel spreadsheet for processing performance result information under the ACCC PI Scheme. This interface program was developed during 2003/04, and most of the data used for the 2004 performance measure report was extracted using this interface program.

MAXIMO is the single source of data for reporting performance to both service standards schemes. The Excel file for the ACCC PI Scheme results imports data from MAXIMO into a spreadsheet, and then processes the data using Visual Basic to filter only those events that have not been excluded for one reason or another. Within the Excel file, there is a spreadsheet where peak and off-peak times are determined, dependent upon the time of year. The information is summarised on a separate spreadsheet where the times in peak / off-peak periods are calculated for each event, together with the contribution of each event towards the results of measures 1 and 3.

2.4 Calculation of Performance Measure Results

The performance measure results are calculated using the S-factor equations defined in the ACCC revenue determination. The final stage is a collation of the results into a graph illustrating the annual performance against the pre-agreed target for each measure and sub-measure.

2.5 Recent Enhancements to Recording System

Following the initial audit of the recording system in 2003, a number of improvements were made to the recording and reporting tools, and business process. The net result of these changes is to allow SPI PowerNet better manage its outages with least impact on the transmission system.

2.5.1 MAXIMO / POMS

In reviewing the recording system, SKM noted that there were a number of changes in the functionality of MAXIMO and the POMS support package in response to some observations made during the 2003 audit. These were:

- improved data integrity checking on data entry fields to reduce data input mistakes; and
- an enhanced data entry process for outages to prevent the likelihood of an outage being missed or left incomplete.

2.5.2 ACCC Performance Excel spreadsheet

The overall accuracy of the spreadsheet was improved by reducing the rounding off of some results, together with the correction of some minor macro coding errors. There was also a noted improvement in the automation of the process and handling of invalid data.

2.5.3 Business Process

The operational impact of the PI Scheme was enhanced by the following changes in business practices:

- The Works Planning Manager was provided access to the program to allow for daily reporting to monitor progress and for use in forward planning;
- During 2004, SPI PowerNet personnel were educated in the ACCC requirements and the impact that the Scheme may have on performance targets by the production of a ACCC PI Scheme booklet;
- Changes were made to the planning process so that planned outages have least impact on the network, particularly in peak periods; and
- Changes in operational processes for workflow control so that unplanned outages may be returned to service more quickly.

2.6 System Audit Findings

During 2004, there were 1101 events that were subject to the ACCC PI Scheme. In 2003, SKM conducted sample testing of thirty (30) random System Outage Requests from control room paper records to ensure that these were correctly recorded in MAXIMO and correctly transferred to the Excel file for processing. In general, the events, reasons, and switching times events were found to

have been correctly recorded, accurately transferred to the Excel file and correctly processed for peak / off-peak hours.

In 2003, SKM also reviewed a sample of thirty (30) entries in the event list, and was satisfied that for each event, a code had been entered for the outage, and the reason was in accordance with historical reporting practices.

Similar random checks were carried for the 2004 audit. The recording system is found to be satisfactory, and it appears that with modifications for the enhancements, the integrity of the recording system remains sound.

It is noted that there is one additional outage code – CONSTR in 2004, which is not defined in 2003. The work was related to asset maintenance and SPI PowerNet has clarified that it should be classified under the "SPIMAINT" outage code. This is an old outage code supposed to be phased out but was incidentally resided in another application called ProjectView. The issue has been corrected and the relevant outages have been reclassified as "SPIMAINT". There is no impact on the performance calculation.

The functionality of the Excel file and the associated Visual Basic code has been subjected to exhaustive testing by both internal SPI PowerNet staff and contractors. In 2003, SKM reviewed the operation of some of the Visual Basic modules, and was satisfied that they appeared to function correctly. The arithmetic functions on the Excel spreadsheets was checked and found to be have been correctly applied.

SKM noted that the integrity of the performance statistics published both internally and externally is enhanced by the MAXIMO / POMS system as a single source of performance data. The current audit found that there is integration of the ACCC PI Scheme into MAXIMO and that the events are properly accounted for. The allocation of exclusion coding appears to have been done in accordance with SPI PowerNet's interpretation of the prescribed list of exclusions, and the crosschecking of coding should ensure that all outages are properly categorised.

SKM is satisfied that the recording and data processing systems that have been put in place by SPI PowerNet appear to accurately log and calculate performance.

3. Exclusions

The ACCC PI Scheme contains provisions for certain defined events to be excluded from calculated outage figures, on the basis that they are beyond the control of TNSPs.

Appendix G of the ACCC Victorian Transmission Network revenue caps decision (2002) contains a number of specified exclusions.

3.1 Exclusions defined under the ACCC PI Scheme

In the case of SPI PowerNet, the defined exclusions are [1]:

- Any outage caused by a fault, outage request or other event on a 3rd party system connected to the TNSP's Network
- An outage which occurs within a period a connected person (high voltage customer) does not require the supply of electricity directly or indirectly from the High Voltage Grid, where that outage does not affect the supply of electricity to any other person.
- An outage which is requested by VENCorp or a 3rd party to enable VENCorp or a 3rd party to augment the High Voltage Grid, or conduct tests on the High Voltage Grid, either itself or through a contractor
- Any outage requested by a 3rd party for construction or demolition activities on land over which the TNSP has an easement
- An outage requested by NEMMCO except where the reason for that request is an act or omission of SPI PowerNet
- A full or partial failure of Brunswick Terminal Station to Richmond Terminal Station 220 kV Cable system that is caused by damage to a part of the cable that is not on SPI PowerNet site and is caused by someone other than SPI PowerNet
- In relation to a loss of a double circuit tower, exclude the outage of one circuit following the restoration into service of the other circuit
- Force majeure events (refer Appendix C)

[1] The exclusions that have applied to SPI PowerNet over recent years, and underpin the historical data used in establishing targets under the ACCC PI Scheme, are based on exclusions detailed in the Amendment Agreement with VENCorp relating to the Network Availability Incentive Scheme (AIS).

3.2 Categorisation of 2004 events

Table 3-1 summarises the overall results by included and excluded events.

Table 3-1 Summary of total hours for included and excluded events

Categorisation	Total hours	Peak hours	Intermediate hours	Off-peak hours
All Included events	21,199 (28%)	981 (17%)	2,125 (24%)	18,093 (30%)
All Excluded events[2]	53,879 (72%)	4,760 (83%)	6,650 (76%)	42,469 (70%)
Total	75,078 (100%)	5,741 (100%)	8,775 (100%)	60,562 (100%)

Table 3-2 Summary of total hours for included and excluded events (excluding consideration of out of service assets)

Categorisation	Total hours	Peak hours	Intermediate hours	Off-peak hours
All Included events	21,199 (45%)	981 (17%)	2,125 (24%)	18,093 (56%)
All Excluded events	25,793 (55%)	4,760 (83%)	6,650 (76%)	14,383 (44%)
Total	46,992 (100%)	5,741 (100%)	8,775 (100%)	32,476 (100%)

Each event is categorised on the Work Order to summarise the reason for the outage. These categories are shown in Table 3-3 together with an exclusion designation. Those categories marked for exclusion are considered as either Third Party events (and therefore outside of SPI PowerNet's control) or force majeure events. Categories that are marked with an "x" are excluded from the calculation of the performance measure data results.

The reasons for outages shown in Table 3-3 are consistent with the categories that have been historically used in reporting performance results, and in the development of the performance targets in the ACCC PI Scheme.

[2] Excluded hours data includes long term outage hours associated with out of service assets recorded in MAXIMO. Whilst this particular exclusion relates to 43 works orders and totals 28,086 hours, it relates to primarily three assets – two 22kV/415V station transformers at Hazelwood terminal station and a substation bay at South Morang terminal station. Refer section 3.4 pp 10

Table 3-3 Breakdown of results by Outage Reasons

Outage Code	Description	Excluded	No of events	Total hours
SPIMAINT	Outage due to SPI PowerNet operational maintenance	-	455	7,159
SPICAPX	Outage due to SPI PowerNet capital works	-	257	12,977
VEN_AUG	Augmentation works funded by VENCorp and carried out by SPI PowerNet or its agents	x	57	10,196
DB_AUG	Augmentation works funded by distribution company and carried out by SPI PowerNet or its agents	x	36	1,450
GEN_AUG	Augmentation works funded by generation company and carried out by SPI PowerNet or its agents	x	0	0
FAULT	Fault on SPI PowerNet network - not caused by distribution company	-	82	695
FORCED	Forced outage on SPI PowerNet network	-	49	285
INTERCON	Interconnector constrained by SPI PowerNet or its agents	x	0	0
3RDPARTY	Outage due to actions of third party	x	46	5,044
TPPROX	Outage due to work by third party in proximity	x	0	0
DBPROX	Outage due to work by, or requested by, distribution company in proximity	x	2	9
LANDOWN	Outage due to private landowners to work in proximity to lines over their land	x	0	0
VICROADS	Outage due to actions of / requested by Vic Roads	x	0	0
APDALCOA	Work by Alcoa or work by SPI PowerNet during outage initiated by Alcoa	x	15	291
HVCUST	Work by SPI PowerNet during HV customer plant shutdown	x	2	11
ELECTRAN	Work during outage initiated by ElectraNet SA	x	0	0
GENCO	Outage requested by generator to carry out own works	x	31	8,217
STHHYDRO	Work during outage initiated by Southern Hydro on their assets	x	2	1
SNOWY	Outage requested by Snowy Mountains Control Room	x	0	0
TRANSGRD*	Outage requested by TransGrid for work on their assets	x	3	9
RECOVER	Outage where AIS rebate is recoverable from third party	-	0	0
BUSHFIRE	Outage requested during bushfire for safety of fire fighters from flashover as fire crosses transmission line	x	0	0
SW_NEM	Switching of network requested / directed by NEMMCO	x	0	0
SW_VEN	Switching for VENCorp load shedding – power restrictions	x	4	8
CONSCON	Element stranded by system design by outage of another element due to capital works by SPI PowerNet	-	0	0
CONSMAIN	Element stranded by system design by outage of another element due to maintenance works by SPI PowerNet	-	1	1
CONSTR	Redundant code for outage due to SPI PowerNet asset maintenance	-	3	82
FORCMAJ	Force majeure event	x	13	557
EXCLUDE	Excluded from AIS and ACCC PI Scheme	-	43	28,086
Total			**1,101**	**75,078**

* These 3 outages attributed to TransGrid related to the clearing of weeds from capacitor bank enclosures at Dederang and Wodonga Terminal Stations on 26 August, 27 August and 23 December 2004. These events were identified in the outages recorded by TransGrid.

3.3 Capital Works

There were 257 outages related to capital works identified during the audit.

These outages are associated only with the capital expenditure regulated under the ACCC revenue determination. This expenditure only includes replacement and/or refurbishment of existing assets, and excludes any capital costs associated with augmenting the network. Such augmentations are covered under the outage codes VEN_AUG, DB_AUG and GEN_AUG, and are excluded from the performance calculations.

Therefore, any equipment replacing a piece of equipment that was in the ACCC PI Scheme will continue to be included in the Scheme, inheriting the availability target(s) of the original piece of equipment.

Although not relevant to the ACCC PI Scheme, it should be noted that customers augmenting the network and creating new assets can and do impose availability targets on the new plant when the negotiate the excluded services contract.

3.4 Outage Code EXCLUDE

This outage code was applied to long term outages recorded by MAXIMO for assets that are no longer in service, and therefore have no impact on the performance of the system network. The total number of works orders recorded was 43, totalling 28,086 hours. This is a circumstance created by MAXIMO itself, rather than reflecting assets which are either cold spares or likely to support the network at some time.

The primary contributing assets were:

- No. 1 and No.2 22kV/415V station transformers at Hazelwood terminal station; and
- Substation bay F at South Morang terminal station.

The station service transformers at Hazelwood terminal station were removed in 2002/03, although the cable connecting these was capped rather than removed as an electricity distribution entity may wish to reuse the cables at some point in time. In addition, this outage code includes customer works for a tee-off from the 220kV transmission line between BETS and SHTS at Fosterville. There was no new equipment included in this work.

SKM reviewed these outages, and accepts that these assets should be excluded from any consideration of network performance.

3.5 Event Based Exclusions Sought by SPI PowerNet

In the submission provided by SPI PowerNet, one (1) type of event relating to the availability of shunt reactors was specifically identified as an event that was considered outside of their control, and therefore should be excluded from their performance measure calculations.

In this instance, SPI PowerNet provided additional documentation to support their assertions.

3.5.1 Event

Unlike other reactive plant such as capacitor banks and Static Var Compensators (SVCs), shunt reactors are used to balance the network when the demand for electricity is low (ie. off peak). Whilst the switching off of these shunt reactors has a detrimental effect on the performance result for *Measure 1b - Circuit Availability (non-critical)(peak)*, it is considered good engineering practice and beneficial to the operation of the network.

Unlike conventional circuits, where their operation provides additional capacity and is desirable during peak periods, shunt reactors act to limit circuit capacity and are only required for network balancing at times of low load.

SPI PowerNet has received written instructions from VENCorp to de-energise these reactors during peak periods, and the AIS scheme provides for no rebate during peak periods, and high rebates during off-peak periods.

3.5.2 Audit Findings

SKM acknowledges SPI PowerNet's contention that the intention of the PI Scheme was not to encourage poor operating practices to improve performance results, nor was it to establish performance drivers that provided contrary signals to the previously established AIS rebate scheme. SPI PowerNet has been given written instructions by VENCorp to remove these shunt reactors from service during peak periods rather than off peak periods.

The historical data used in establishing the targets would not have included these types of outages, as the replacement program for these reactors is based on a long cycle (approximately 45 years).

It appears the PI Scheme does not adequately recognise or adequately allow for the fundamentally different nature of shunt reactors from other transmission equipment, and taken literally would provide an incentive for SPI PowerNet to operate its network contrary to good engineering practice.

3.5.3 Recommendation

SKM considers that whilst these shunt reactors have been de-energised in accordance with good engineering and operating practice, in a manner that enhances the reliability of the network, they should be considered available because they are available for use.

SKM recommends that the switching of these reactors should not be considered as making the reactors unavailable.

4. Force Majeure

In the Service Standards Guidelines published by the Commission[3], there are four (4) considerations listed for determining what force majeure events should be "excluded force majeure events". These are:

- Was the event unforeseeable and its impact extraordinary, uncontrollable and not manageable?;
- Does the event occur frequently – if so, how did the impact of the particular event differ?;
- Could the TNSP, in practice, have prevented the impact (not necessarily the event itself)?; and
- Could the TNSP have effectively reduced the impact of the event by adopting better practices?

The definition of force majeure applied to SPI PowerNet is consistent with that used in gathering the historical data and developing the performance targets within the ACCC PI Scheme.

4.1 Definition

The definition used by SPI PowerNet in the determination of performance under the ACCC PI Scheme reflects the definition provided in the AIS rebate scheme [4], and which was used historically in processing performance data (refer Appendix B for details).

The application of force majeure is more precise than for most TNSPs, owing to the nature of the AIS scheme, which is based on individual system elements.

4.2 Industrial Disputation

Since the beginning of 2004, there was an industrial dispute between SPI PowerNet, amongst other electricity entities, and the Communications, Electrical, Electronic, Energy, Information, Postal, Plumbing and Allied Services Union of Australia (ETU). The claims included a reduction in working hours, significant salary increases, improvement in superannuation and maintenance or improvement in a range of established practices. It is understood that management sought agreement on alterations to established practices and working arrangements.[5]

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[3] Schedule 2, Statement of principles for the regulation of transmission revenues – Service standards guidelines, ACCC, 12 November 2003

[4] pp 32, Appendix 4

[5] Refer Australian Industrial Relations Commission decision PR947617 on suspension or termination of bargaining period, 4 June 2004

The dispute continued until July 2004, during which time there were a series of work bans put in place by the ETU, including restoration bans, overtime bans and new connections. The project work at the Cranbourne substation was also affected by this dispute.

During this period, SPI PowerNet recorded the outage reason for each event, capturing that time where the works order was affected by this industrial action. In total, there were twelve (12) instances where the progress of works orders were disrupted.

4.2.1 Audit Findings

There were 12 events that were affected by the industrial action:

Works Order	Start	Finish	Event
WO10093120	14.02.04 17:02	23.02.04 11:47	Static VAR compensator at HOTS
WO10093212	17.02.04 09:35	23.02.04 14:08	Syn/cond at FBTS
WO10093633	27.02.04 22:40	29.02.04 23:59	No. 1 CSC at ROTS
WO10093633	01.03.04 00:00	01.03.04 15:42	No. 1 CSC at ROTS
WO10094899	29.04.04 22:31	30.04.04 07:12	TTS 220kV line bay F at EPSY
WO10095066	10.05.04 16:12	11.05.04 07:30	Tie transformer bank at MBTS
WO10095773	08.06.04 16:12	09.06.04 07:30	No. 1 66kV capacitor bank at GTS
WO10096954	25.07.04 04:08	26.07.04 07:30	220kV shunt reactor at MLTS
WO10096954	26.07.04 16:20	27.07.04 07:30	220kV shunt reactor at MLTS
WO10096954	27.07.04 16:20	28.07.04 07:30	220kV shunt reactor at MLTS
WO10096954	28.07.04 16:20	29.07.04 07:30	220kV shunt reactor at MLTS
WO10096954	29.07.04 16:20	30.07.04 07:30	220kV shunt reactor at MLTS

The definitions of exclusions under force majeure provide for exclusion due to industrial dispute, which is not due to actions or omissions by SPI PowerNet [6]. The relevant section includes the clause:

"… a labour dispute that results in SPI PowerNet being unable to perform on time and as required, any obligation (not being an obligation to pay money) under this agreement where SPI PowerNet, in its involvement (if any) in the labour dispute, has acted reasonably in accordance with good industrial relations practice"

SKM noted and observed documentation that VENCorp were formally advised of each event through a Notice of Force Majeure Event. Whilst VENCorp has the authority to object to any Notice in circumstances where they do not agree, no such objections were raised regarding these notifications.

[6] Appendix B

SKM reviewed the outages list for each of these events, and noted that the event was listed in separate parts, with the period during which the industrial disputation was taking affect was highlighted. SPI PowerNet have accepted those times outside these periods as subject to the ACCC PI Scheme and have included these in their performance calculations.

4.2.2 Recommendation

SKM is of the view that the events covered by Works Orders shown in section 4.2.1 satisfy the provisions under the Force Majeure definition included in the revenue cap decision (Appendix C) for exclusion for the calculation of performance under the ACCC PI Scheme, and that SPI PowerNet's requested exclusion for these events be allowed.

4.3 Bushfire

SPI PowerNet have claimed one (1) force majeure event resulting from a bushfire.

On Thursday 15 April 2004, Victoria experienced above average temperatures across the southern and eastern parts of the State. A series of bushfires, concentrated to the east of Melbourne, spread across an area between Alexandra and Warragul. Whilst most of these fires were under control, two major outbreaks in native forest took longer to bring under control. The Country Fire Authority (CFA) advised that most of the fires started from private burn-offs started a few days earlier.

4.3.1 Audit Findings

The relevant Works Order for this outage was:

Works Order	Start	Finish	Event
WO10094662	15.02.04 07:33	15.02.04 13:15	No. 2 500kV line South Morang TS to Hazelwood TS

South Morang is a terminal station located to the north east of Melbourne, whilst Hazelwood Terminal Station is adjacent to the Hazelwood Power Station located in the Latrobe Valley. The transmission line included in the event runs through native forest and the bushfires would have been in the vicinity of the line on 15 April 2004.

Whilst the emergency services in Victoria do not have direct authority to isolate transmission lines in the event of bushfires, SPI PowerNet has published a document "Guidelines for the Safety of Fire Crews in the Suppression of Fire in Extra High Voltage Transmission Line Easements"[7]. The purpose of these guidelines was to "… *provide guidance to the Country Fire Authority (CFA), the*

[7] Guidelines publication available on SPI PowerNet internet site - current version issued 18 May 2004.

Department of Sustainability and Environment (DSE) and the Metropolitan Fire Brigade (MFB) for access and fire related activities on SPI PowerNet easements and associated infrastructure".

The guidelines detail, amongst other issues, the procedures in the event that a fire occurs on or within 5 kilometres of an easement, and the requirements before commencing any fire fighting activities. These requirements include notifying the SPI PowerNet VNSC Control Room as soon as possible so as to allow sufficient time to protect the transmission system and liaise on easement access with the relevant fire authority. The guidelines outline the responsibilities of all parties and the safe working procedures to be observed whilst in the vicinity of the transmission assets.

4.3.2 Recommendation

SKM is of the view that the event covered by Works Order WO10094662 satisfies the provisions under the Force Majeure definition (clause (a)(i)) for exclusion for the calculation of performance under the VENCorp AIS Scheme. This is a fairly prescriptive definition that regards a force majeure event as "*… an occurrence beyond the control of SPI PowerNet, which is not:*

- *an intentional act;*
- *an act of neglect; or*
- *an omission by SPI PowerNet;*

and that results in an outage and possibly an extended or lengthy restoration of a network element due to one or more of the following:

i) *acts of God, earthquakes, floods, droughts, storms, tempests, mud slides, washaways, explosions, fires and any natural disasters ….. "*[8]

This definition has been used historically in the determination of force majeure, and supports the historical data used in establishing performance targets under the ACCC PI Scheme.

However, the original intention of the ACCC PI Scheme in describing events that were considered Force Majeure events was not to exclude all events of the different types described, including natural disasters such as fire but "*… to exclude the most severe of these events which it is unreasonable for the TNSP to plan and design the transmission system to protect against.*"[9] This concept was reiterated in the ACCC Service Standards Guidelines[10], and included in the Victorian

[8] Appendix B

[9] pp 27, section 6, Transmission Network Service Provider – Service Standards, Final Report, SKM, March 2003

[10] pp 7, section 4.3.5, Statement for principles for the regulation of transmission revenues – Service standards guidelines, ACCC, 12 November 2003

transmission network revenue cap decision where the distinction between an extreme event and a force majeure was drawn.[11] Extreme events are considered those that may occur regularly and would be included in the PI Scheme. As an example, a storm could be considered an extreme event, and become a force majeure event, and hence excluded, if the storm was more severe than normal. The assumption would be that it could not be planned for beyond good electricity industry practice.

In the ACCC Service Standards Guidelines, the definition of force majeure[12] used included fire as a "*… possible force majeure event*", noting that bushfires are common in some areas. The intention of the Guidelines was not to have a definition so broad as to cover all unplanned outages. Typically force majeure events were described as " … *an act of God or a natural disaster*".[13]

Bushfires in Victoria are reasonably common, with summer and autumn being the most dangerous times of year. The highest temperatures occur during these seasons, and in most years, the grass and forests have dried out by mid-summer. During a 20-year period from 1976 to 1995 there were 11,676 fires on public land in Victoria, averaging 584 per year. However, there was considerable annual variation, with the number of fires each year ranging between 243 and 878. In total, these fires burned over 2.3 million hectares of public land. The degree of variation in fire size and intensity from one year to another is indicated by the very broad range of area burned each year, ranging from a low of 4,817 hectares in 1992-93 to over 700,000 hectares in 1982.

With regards to the bushfire incident of 15 March 2004, the event arose from a series of fires that flared in West Gippsland on 14 March 2004 following a controlled burn-off. The largest fires occurred at Blue Rock and Tonimbuk in the vicinity of Warragul, and these two major outbreaks covered a total area of approximately 2,700 hectares. There were approximately 50 additional fires burning across Victoria on 15 March 2004 and the outbreak was not fully contained until 18 March 2004.

The bushfire event in itself was classified as "major" in commentary by various authorities. However, SKM considers that the 5.70 hour isolation event (that resulted for SPI PowerNet) does not appear to clearly satisfy the concept defined in the revenue cap decision of being an event that is more severe than normal. Therefore, SKM considers the event should not be classified as a force majeure event under the ACCC PI Scheme. The effect of disallowing this exclusion would change the Average Outage Duration for Lines from 2.73 hours to 2.87 hours. As the amended value would still be capped for that performance measure, there would be no impact on the calculated result.

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[11] pp 102

[12] Appendix D

[13] pp 8

5. Calculation of Bonus / Penalty

The results provided by SPI PowerNet were entered into the PI Scheme model provided to the ACCC. The bonus calculated varied marginally from the value calculated using the S-factors outlined by the Commission in the revenue determination[14] of 11 December 2002 due to some rounding off of coefficients.

The bonus incentive calculated by SPI PowerNet was based on approximated annual revenue, due to the financial year for SPI PowerNet being April – March. The differences between the two calculations are shown in Table 5-1.

Table 5-1 Calculated Bonus

No	Performance Measure	Calculated bonus / (penalty)		% variation to SKM values
		ACCC S-factors	SKM	
1	Circuit Availability (total)	$ 62,575	$ 64,026	(2.27%)
1a	Circuit Availability (critical)(peak)	$ 208,781	$ 208,781	0.00%
1b	Circuit Availability (non-critical)(peak)	($ 61,389)	($ 60,677)	1.17%
1c	Circuit Availability (critical)(intermediate)	($ 10,622)	($ 10,004)	6.18%
1d	Circuit Availability (non-critical)(intermediate)	($ 69,594)	($ 69,594)	0.00%
3a	Average Outage Duration (lines)	$ 347,968	$ 347,968	0.00%
3b	Average Outage Duration (transformers)	$ 132,030	$ 131,996	0.03%
	TOTAL	**$ 609,750**	**$ 612,496**	**(0.45%)**

These calculations have been done for comparative purposes only, as the final calculation of the bonus or penalty is based on the S-factor equations defined in the ACCC determination[15], and are based on the acceptance of the recommended exclusions outlined in Section 3.

The profiles for each of the applicable measures are shown in Appendix A to illustrate the performance in graphical terms.

Based on these results, SKM considers SPI PowerNet's calculation of its S factor and performance incentive to be free of material errors, subject to ACCC agreeing to the exclusions sought by SPI PowerNet and recommended by SKM. The bonus for SPI PowerNet under the ACCC PI Scheme for 2004 is **$609,750**.

[14] Victorian Transmission Network Revenue Caps 2003-08, ACCC, 11 December 2002

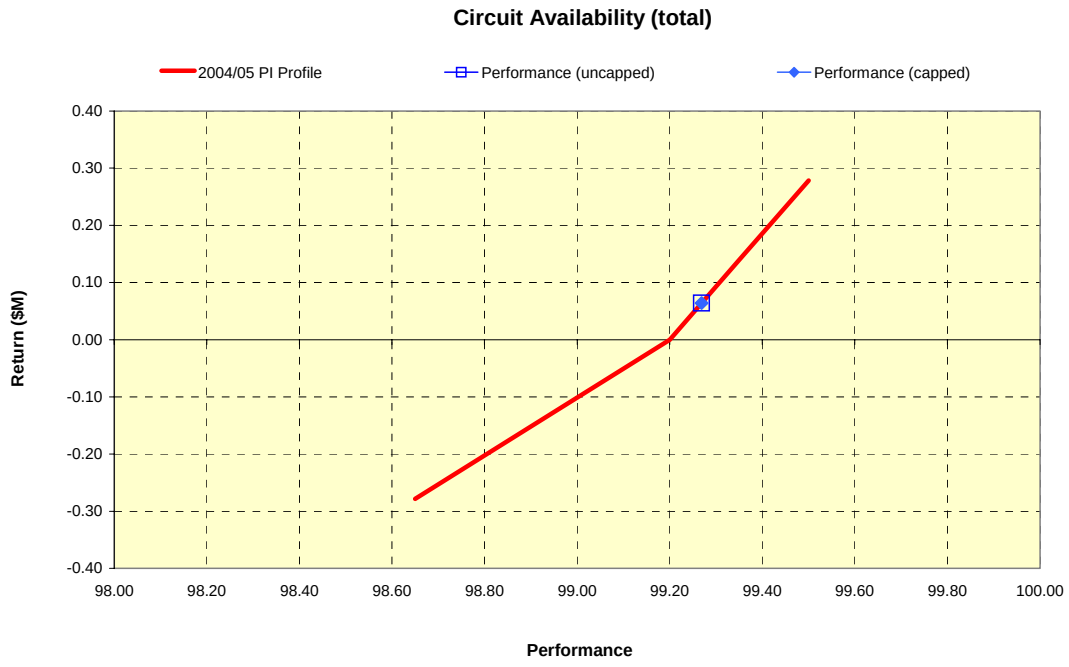
[15] Appendix E

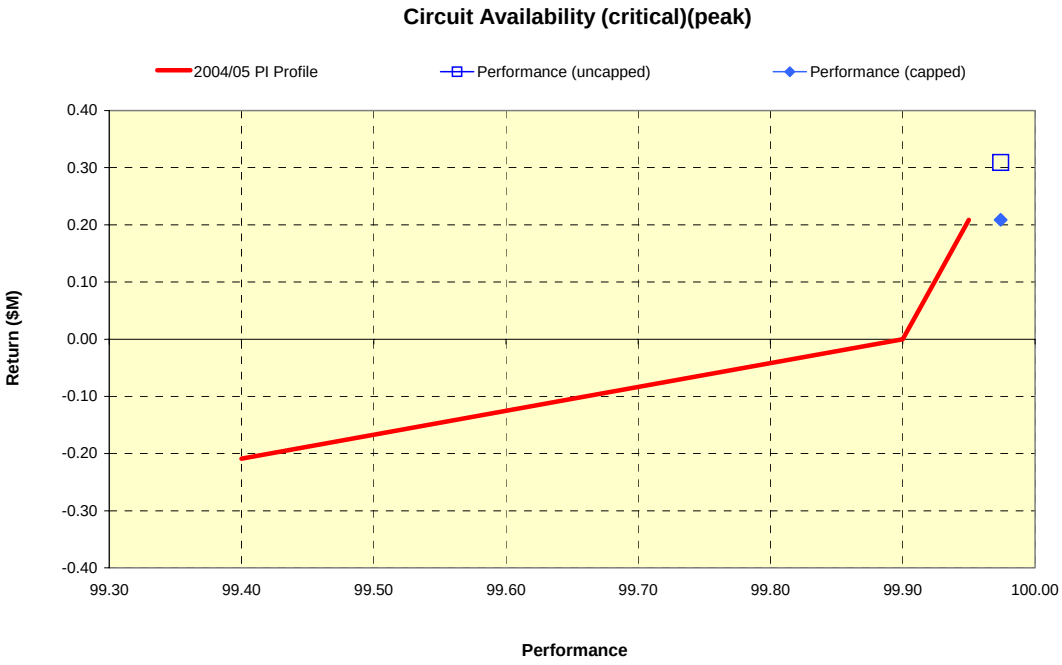
Appendix A Performance Measure Profiles

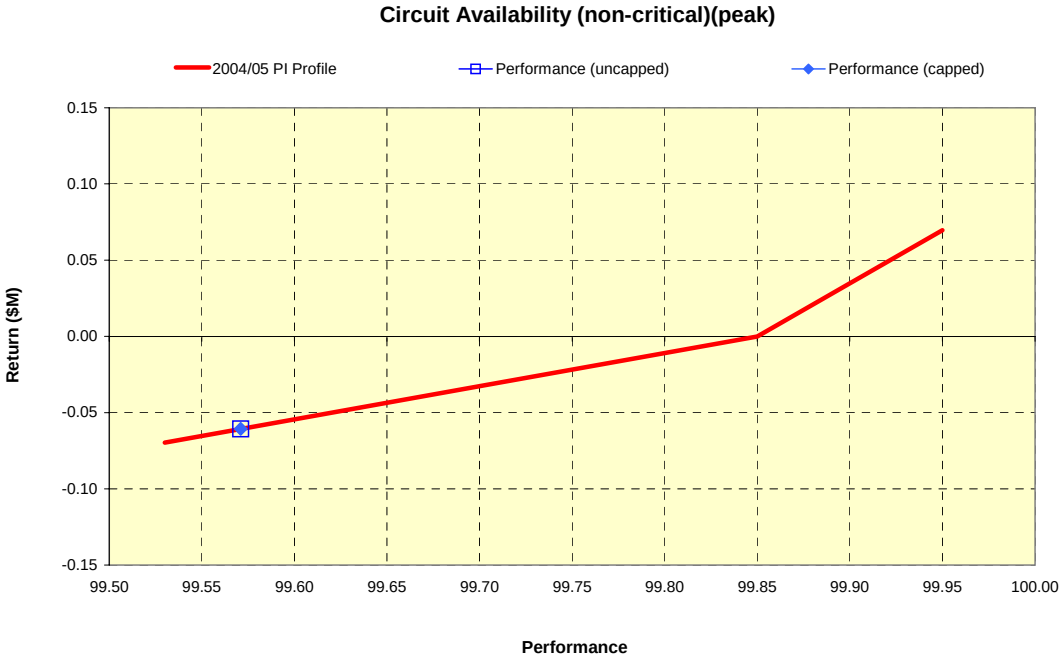
The Performance Measure profiles graphically illustrate the 2004 performance against the targets for Circuit Availability and Average Outage Duration, based on the acceptance of the recommended exclusions.

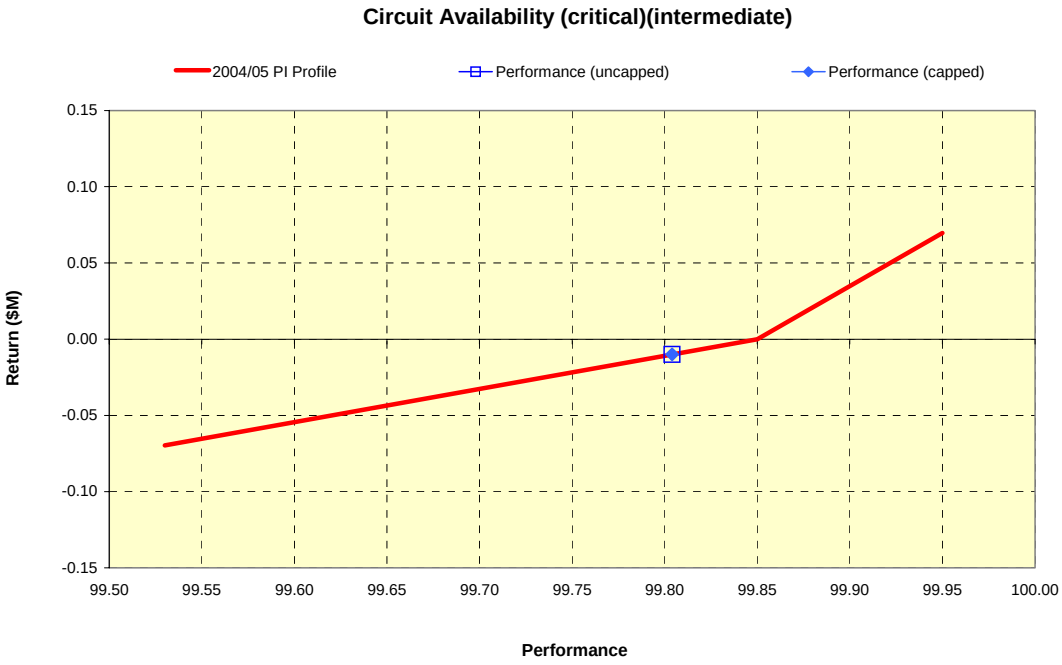
The profiles shown are:

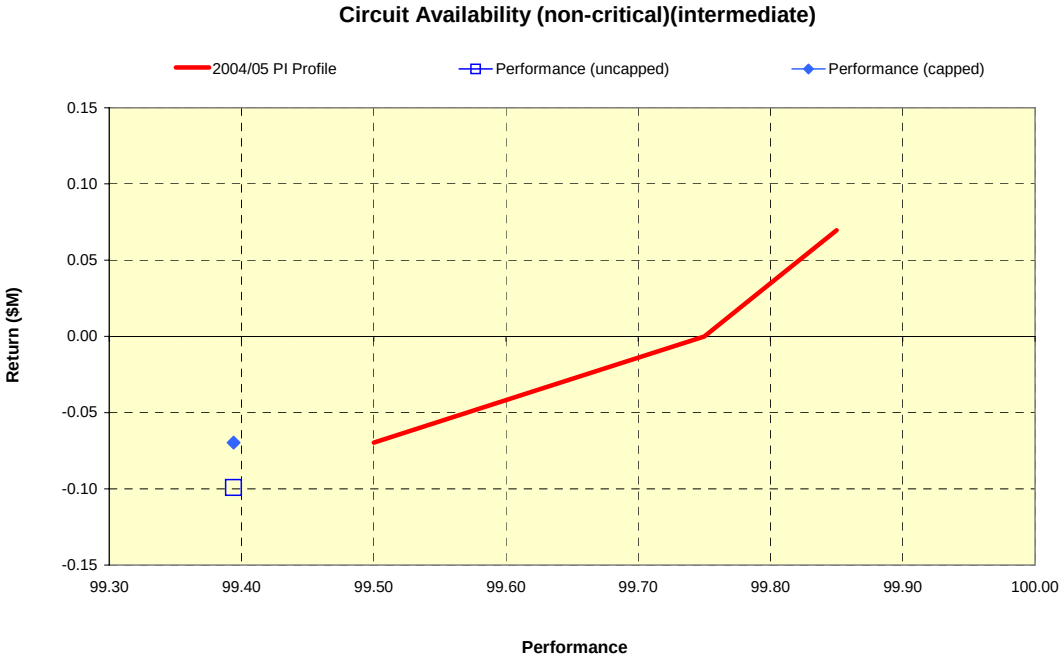
- Measure 1 Circuit Availability (total)
- Measure 1a Circuit Availability (critical)(peak)
- Measure 1b Circuit Availability (non-critical)(peak)
- Measure 1c Circuit Availability (critical)(intermediate)
- Measure 1d Circuit Availability (non-critical)(intermediate)
- Measure 3a Average Outage Duration (lines)
- Measure 3b Average Outage Duration (transformers)

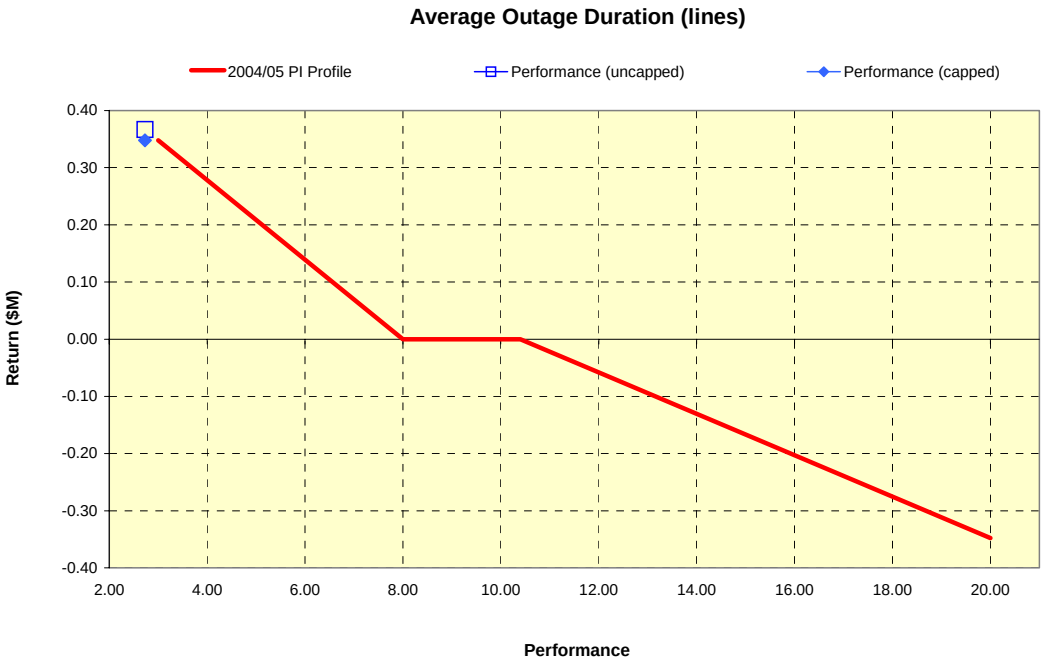


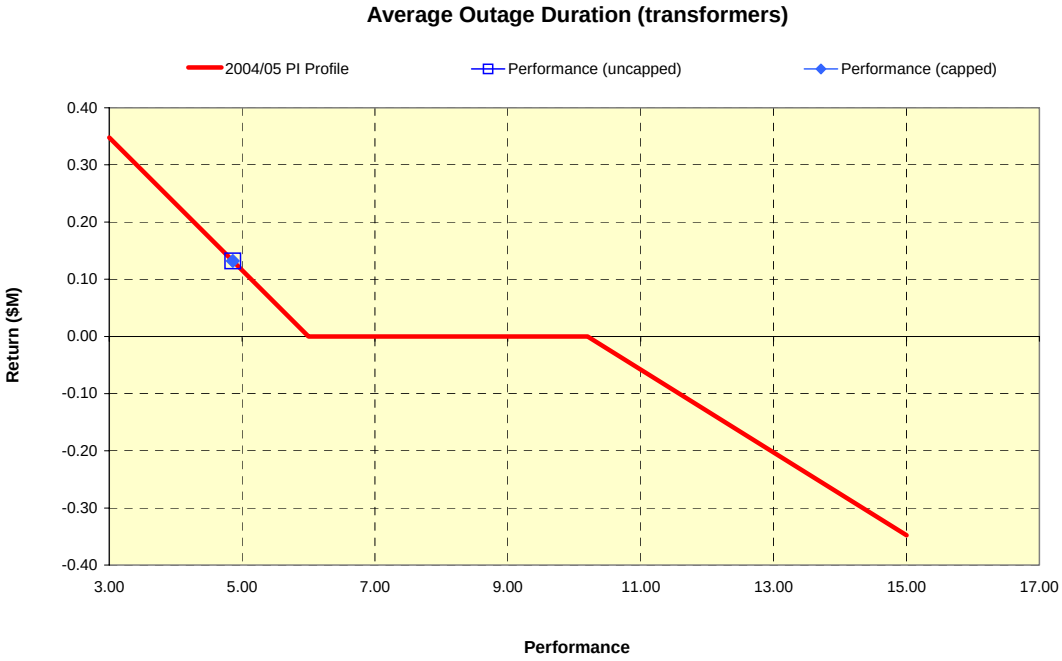

Circuit Availability (critical)(peak)
2004/05 PI Profile
Performance (uncapped)
Performance (capped)
Return ($M)
0.40
0.30
0.20
0.10
0.00
-0.10
-0.20
-0.30
-0.40
99.30
99.40
99.50
99.60
99.70
99.80
99.90
100.00
Performance


Circuit Availability (non-critical)(peak)
2004/05 PI Profile
Performance (uncapped)
Performance (capped)
Return ($M)
0.15
0.10
0.05
0.00
-0.05
-0.10
-0.15
99.50
99.55
99.60
99.65
99.70
99.75
99.80
99.85
99.90
99.95
100.00
Performance


Circuit Availability (critical)(intermediate)
2004/05 PI Profile
Performance (uncapped)
Performance (capped)
Return ($M)
0.15
0.10
0.05
0.00
-0.05
-0.10
-0.15
99.50
99.55
99.60
99.65
99.70
99.75
99.80
99.85
99.90
99.95
100.00
Performance


Circuit Availability (non-critical)(intermediate)
2004/05 PI Profile
Performance (uncapped)
Performance (capped)
Return ($M)
0.15
0.10
0.05
0.00
-0.05
-0.10
-0.15
99.30
99.40
99.50
99.60
99.70
99.80
99.90
100.00
Performance


Average Outage Duration (lines)
2004/05 PI Profile
Performance (uncapped)
Performance (capped)
Return ($M)
0.40
0.30
0.20
0.10
0.00
-0.10
-0.20
-0.30
-0.40
2.00
4.00
6.00
8.00
10.00
12.00
14.00
16.00
18.00
20.00
Performance


Average Outage Duration (transformers)
2004/05 PI Profile
Performance (uncapped)
Performance (capped)
Return ($M)
0.40
0.30
0.20
0.10
0.00
-0.10
-0.20
-0.30
-0.40
3.00
5.00
7.00
9.00
11.00
13.00
15.00
17.00
Performance

Appendix B VENCorp AIS Force Majeure

The following is an extract from Appendix 4[16] of the VENCorp Network Availability Incentive Scheme, which has been applied historically in the classification of force majeure events by SPI PowerNet.

"This definition is:

a) A force majeure event in this agreement is determined to be an occurrence beyond the control of SPI PowerNet, which is not:

- an intentional act;
- an act of neglect; or
- an omission by SPI PowerNet;

and that results in an outage and possibly an extended or lengthy restoration of a network element due to one or more of the following:

i) acts of God, earthquakes, floods, droughts, storms, tempests, mud slides, washaways, explosions, fires and any natural disaster;

ii) acts of war, acts of public enemies, riots, civil commotions, malicious damage, sabotage, blockade and revolution;

iii) acts or omissions (whether legislative, executive or administrative) of any Authority;

iv) inability to obtain or delay in obtaining any necessary Licence (other than due to the acts or omissions of SPI PowerNet); or

v) acts or omissions (other than a failure to pay money) of a person other than SPI PowerNet where:

- that person either uses the high voltage grid or uses a system for the supply of electricity which in turn is connected to the high voltage grid; or
- that person's electrical system is connected to the high voltage grid or is directly or indirectly connected to a system for the supply of electricity which in turn is connected to the high voltage grid, and those acts or omissions affect the ability of SPI PowerNet to perform its obligations under this agreement by virtue of that direct or indirect connection to, or use of the high voltage grid; or

b) a labour dispute that results in SPI PowerNet being unable to perform on time and as required, any obligation (not being an obligation to pay money) under this agreement where SPI

[16] pp 32

PowerNet, in its involvement (if any) in the labour dispute, has acted reasonably in accordance with good industrial relations practice,

but **not** if the relevant circumstance is:

a) the collapse of a single intermediate tower or the collapse of two or three (but no more) consecutive intermediate towers;

b) the loss of, or damage to, a single switchbay in a terminal station;

c) the loss of, or damage to, up to ten (but no more) control cables;

d) the loss of, or damage to:

   i) a 3 phase transformer contained within a single tank;

   ii) a single phase of a 3 phase transformer consisting of three single phase tanks; or

   iii) a capacitor bank, where the capacitor bank is individually switched to the bus, where all such loss or damage is repairable on site in accordance with Good Electricity Industry Practice;

e) the loss of, or damage to, any reactors, static var compensators or synchronous condensors where that loss or damage is repairable on site in accordance with Good Electricity Industry Practice; or

f) an outage requested by NEMMCO where the reason for that request is a breach of the NEMMCO Operational Guidelines that is caused by a full or partial failure of any equipment that is used by SPI PowerNet.

Appendix C Revenue Cap Force Majeure

The following is an extract[17] from the Victorian transmission network revenue cap decision of 11 December 2002.

"**Definition of Force Majeure**

For the purpose of applying the service standards PI scheme to SPI PowerNet, "Force majeure events" means any event, act or circumstance or combination of events, acts and circumstances which (notwithstanding the observance of good electricity industry practice) is beyond the reasonable control of the party affected by any such event, which may include, without limitation, the following:

- Fire, lightning, explosion, flood, earthquake, storm, cyclone, action of the elements, riots, civil commotion, malicious damage, natural disaster, sabotage, act of a public enemy, act of God, war (declared or undeclared), blockage, revolution, radioactive contamination, toxic or dangerous chemical contamination or force of nature
- Action or inaction by a court, NEMMCO, Government agency (including denial, refusal or failure to grant any authorisation, despite timely best endeavour to obtain same)
- Strikes, lockouts, industrial and/or labour disputes and/or difficulties, work bans, blockades or picketing
- Acts or omissions (other than a failure to pay money) of a party other than the TNSP which party either is connected to or uses the high voltage grid or is directly connected to or uses a system for the supply of electricity which in turn is connected to the high voltage grid
- Where those acts or omissions affect the ability of the TNSP to perform its obligations under the service standard by virtue of that direct or indirect connection to or use of the high voltage grid.

To avoid doubt where such an event occurs, force majeure specifically includes the event when the outcome includes:

- The collapse of four or more consecutive intermediate transmission line towers
- The loss of or damage to two or more switch bays in a terminal station or substation
- The loss of or damage to 11 or more control or secondary cables
- The loss or damage to two or more transformers and capacitors, either single or three phase, connected to a bus.

[17] pp 133

- The loss of or damage to a transformer, capacitor bank, reactor, static var compensator, or synchronous condenser, which loss or damage is not repairable on site according to normal practices.

This is not intended to limit the definition of force majeure rather to provide guidance in its application."

Appendix D ACCC Service Standards Guidelines Force Majeure

The following is an extract from the ACCC Service Standards Guidelines, dated 12 November 2003:

"For the purpose of applying the service standards performance-incentive scheme, 'force majeure events' means any event, act or circumstance or combination of events, acts and circumstances which (despite the observance of good electricity industry practice) is beyond the reasonable control of the party affected by any such event, which may include, without limitation, the following:

- fire, lightning, explosion, flood, earthquake, storm, cyclone, action of the elements, riots, civil commotion, malicious damage, natural disaster, sabotage, act of a public enemy, act of God, war (declared or undeclared), blockage, revolution, radioactive contamination, toxic or dangerous chemical contamination or force of nature
- action or inaction by a court, government agency (including denial, refusal or failure to grant any authorisation, despite timely best endeavour to obtain same)
- strikes, lockouts, industrial and/or labour disputes and/or difficulties, work bans, blockades or picketing
- acts or omissions (other than a failure to pay money) of a party other than the TNSP which party either is connected to or uses the high voltage grid or is directly connected to or uses a system for the supply of electricity which in turn is connected to the high voltage grid
- where those acts or omissions affect the ability of the TNSP to perform its obligations under the service standard by virtue of that direct or indirect connection to or use of the high voltage grid.

In determining what force majeure events should be 'Excluded force majeure events' the ACCC will consider the following:

- Was the event unforeseeable and its impact extraordinary, uncontrollable and not manageable?
- Does the event occur frequently? If so how did the impact of the particular event differ?
- Could the TNSP, in practice, have prevented the impact (not necessarily the event itself)?
- Could the TNSP have effectively reduced the impact of the event by adopting better practices?"