

Stantons International

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WESTERN POWER

Review of Network Quality and Reliability of Supply Performance Reporting

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Member of Russell Bedford International

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Inherent Limitations

Because of the inherent limitations of any internal control structure it is possible that fraud, error, or non-compliance with laws and regulations may occur and not be detected.

An Audit is not designed to detect all weaknesses in control procedures as it is not performed continuously throughout the period and the tests performed are on a sample basis.

Any projection of the evaluation of control procedures to future periods is subject to the risk that the procedures may become inadequate because of changes in conditions, or that the degree of compliance with them may deteriorate

1.0 MANAGEMENT SUMMARY

1.1 OVERVIEW

Audit Scope:

- For each specific application, review that there are policies or guidelines, documented processes and procedures and that adequate resources have been allocated to ensure that Western Power has adequate monitoring to ensure it can ascertain whether it is complying with the requirements of “Part 2 – Quality and reliability standards” of the Code
- In relation to “Part 2 – Quality and reliability standards”, ascertain whether there is adequate data collection and monitoring to ensure Western Power is able to report on its status in relation to “Division 1 – Quality Standards”, “Division 2 – Standards for the interruption of supply to individual customers” and “Division 3 – Standards for the duration of interruption of supply in particular areas”
- Map information flows from the operation of systems and ascertain whether there is a rigorous process to validate data across these systems that directly contribute to the information that is provided in the report.

Scope Exclusions:

- An assessment whether the steps taken by Western Power are reasonably practicable in relation to minimising the occurrence and duration of interruptions
- Validating the accuracy of data provided to generate the report
- Assessing the reliability and integrity of data within all applications that are used in system operations for monitoring and directly contribute to the report
- Reviewing the IT control environment in relation to all applications that are used in system operations
- Confirming the validity and accuracy of reliability statistics
- Confirming the accuracy of interfaces or any data manipulation or translation processes.

Audit Objectives:

- Perform a high level review of the processes that result in the generation of Western Power’s report in accordance with the requirements of “Division 3 Performance Reporting” of the “Electricity Industry (Network Quality and Reliability of Supply) Code 2005” (“the Code”)
- Report on the operation of systems that directly contribute to the information published in the report as required by “Schedule 1 – Information to be published” as contained in the Code
- Assess whether Western Power has adequate policies or guidelines, processes, procedures and resources to ensure compliance with the requirements of “Part 2 – Quality and reliability standards” but will not make any assessment of reasonableness in relation to Clause 9 of the Code that “a transmitter or distributor must, so far as is reasonably practical, ensure that the supply of electricity to a customer is maintained and the occurrence and duration of interruption is kept to a minimum”.

Quality of Management Control:	<input type="checkbox"/>	Excellent	Overall Risk Exposure	Low	<input checked="" type="checkbox"/>
	<input checked="" type="checkbox"/>	Very Good	(considering controls in place)	Medium	<input type="checkbox"/>
	<input type="checkbox"/>	Satisfactory		High	<input type="checkbox"/>
	<input type="checkbox"/>	Needs Improvement			
	<input type="checkbox"/>	Unsatisfactory			

Key Comments: Refer to Summary of Observations

Trends in Quality of Management Controls N/A Better Unchanged Worse

Key Factors

- Implementation of the TCS System on 5 September 2009
- Data sourced directly from the TCS System for reporting purposes
- General processes for reporting unchanged

DOCUMENT RELEASE INFORMATION

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1.2 SUMMARY OF OBSERVATIONS

In accordance with the requirements of the Electricity Industry (Network Quality and Reliability of Supply) Code 2005 (the Code) Stantons International were engaged to provide an independent audit and to report on the operation of the systems at Western Power in place for monitoring compliance with the reporting obligations under the Code.

The approach used in relation to the review was as follows:

- Obtain documentation to gain an understanding of background information for network quality and reliability of supply
- Conduct entry meetings with Network Performance and Network Operations
- Review of relevant Acts/Regulations/Codes
- For each application in relation to system operations that directly contribute to the report, review that there are adequate policies, guidelines, procedures and resources to satisfy the monitoring and reporting requirements of the Code
- Through various interviews, review of documentation and analysis identify any issues in relation to compliance with the monitoring and reporting requirements of the Code
- Report on outcomes of review.

There are a number of software applications and tools that are used in the Code reporting process including:

▶ **Trouble Call System (TCS)**

- TCS is the replacement system for the TCMS (Trouble Call Management System). The TCS includes both an automated SCADA (Supervisory Control and Data Acquisition) system and customer complaint initiated process for recording of fault data.

▶ **Reliability Data Valuator (RDV)**

- Previously RDV was a tool to increase the reliability of data within the TCMS system relating to faults. RDV is now a reporting tool for reliability analysis and reporting, data is extracted from the data warehouse or directly from TCS for the purposes of reporting.

▶ **Data Warehouse**

- Organisational data is collected and stored in a single location for reporting, the data sources include: TCS, TCMS and RDV (historical) in relation to the monitoring and reporting processes.

▶ **Distribution Quotation Management System (DQM)**

- Data is collected through workflows from TCS to DQM in relation to power quality complaints and is used for monthly and annual reporting of power quality.

▶ **Electronic Design and Manufacturing International Devices (EDMI's)**

- Devices which have been statically implemented within the network for the purposes of monitoring and reporting on power quality.

▶ **Extended Outage Payment System (EOPS)**

- Data collected by either manually completed or electronically completed EOPS claim forms by a customer who has experienced an outage of 12 hours or greater.

▶ **Customer Reimbursement (Cus Rems)**

- Data collected through completion of a manual customer reimbursement form then submitted to Western Power.

▶ **Microsoft Excel Spreadsheets**

- Data collected from TCS / RDV / DQM, reporting database is used for monthly and annual reporting processes using spreadsheets in Microsoft Excel.

The following is an overview of the applications and processes which are used in the reporting process:

1.2.1 TCS

TCS system was implemented in 5 September 2008 and replaced the TCMS (Trouble Call Management System). This is the central system that maintains the network fault database from which most of the statistics for the Network Quality and Reliability of Supply Reporting process is referenced.

The TCS system includes both an automated SCADA (Supervisory Control and Data Acquisition) system and customer initiated processes for recording of faults.

1.2.2 RDV

The role of RDV has changed from a tool to enhance reliability of fault information within TCMS to a reporting tool in relation to network reliability. RDV is used for monthly reporting in relation to reliability compliance and for annual regulatory reporting. RDV for the purposes of reporting is currently based on production TCS data and scripts are run to obtain data for the reporting processes.

Updating data in relation to a fault is now undertaken directly in the TCS system. There is no longer a separate software application for updating the fault data.

RDV generates reports and exports a sub set of the TCS data to a Microsoft Excel spreadsheet which is used to identify potential areas where fault information may require changes to enhance accuracy. This is then updated in TCS.

1.2.3 DATA WAREHOUSE

The structure of reporting in relation to network reliability is to change as there is increased adoption of the Data Warehouse as a central data repository within Western Power. At the time of the audit the monthly internal reporting processes and annual regulatory reporting (external) had not been based on the Data Warehouse but directly through the Reporting Server of the TCS system.

Over the coming year Western Power is to increase the usage of the Data Warehouse as the main source of data for reporting processes.

The Data Warehouse currently maintains the following datasets for monitoring historical data and provide reporting of compliance against the Code:

- *TCS Production Data*
 - A full set of production TCS data
- *TCMS Historical Data*
 - A full set of TCMS Historical Data as at the go live date for TCS

- *RDV Historical Data*
 - Record of changes from when RDV was used actively to update TCMS Production data.

1.2.4 DQM

DQM is a job tracking and job estimation tool. Only a minor part of the application is directly involved in the reporting process.

When a customer contacts the Call Centre with a power quality related fault or complaint and Western Power's standard question process within TCS identifies the fault is related to power quality then the record is forwarded to the DQM system. It is then reviewed and fault crews are dispatched using the information passed through from TCS or the complaint may be referred to another area of Western Power for further analysis.

Direct communications to fault crew is undertaken through mobile devices which allow immediate update of the complaint record with fault information and comments per the physical inspection and repairs.

Supporting DQM are logger devices that can be installed at customer premises upon a power quality investigation being undertaken in response to a customer complaint. The loggers are used to obtain power quality data within the network which is used in the investigation process. Prior to implementation of EDM I meters reliance was placed solely on the Loggers for power quality information.

1.2.5 EDM I METERS

EDM I Meters have been further increased within Western Power's network with an additional 28 devices deployed in during the 08/09 year to a total of 56.

Due to the fixed nature and low number of EDM I devices they are not used for proactive monitoring of Western Power's network and statistics are only compiled for regulatory reporting purposes.

The devices are still considered a pilot program within the network to gain an appreciation of the power quality for Western Power. This has further increased the reliability of statistics for reporting against the Code as data collection from these devices is not a customer complaint driven process. Additional units are planned to be implemented within the network over the coming year. Once the additional units have been rolled out it is unlikely for further EDM I meters to be implemented as other technologies such as smart meters are being assessed.

There is no linkage between the EDM I devices and either TCS or DQM to raise a fault in the event of non compliant power quality conditions occurring in the network. This must be reviewed manually to determine non compliance.

1.2.6 EOPS

EOPS is a Lotus Notes integrated application developed to facilitate a payment of \$80 to customers affected by an outage greater than 12 hours. Customers may apply for this payment either by mail or via the Internet; this is then either electronically processed (Internet) or manually entered (mail). EOPS is primarily a complaint driven process.

EOPS automatically performs a direct comparison of the details submitted by a customer's claim two weeks after submission against outage information as in TCS. This period gives adequate time for the interface and synchronisation process to complete to give an accurate reflection of outages for the period of the claim.

With the implementation of TCS and enhanced grouping of faults, automated checking processes have been enhanced. There is still capacity for a customer to initiate further review of the claim if payment is not awarded. Standard processes exist to ensure that issues are addressed in a formalised and consistent manner.

1.2.7 CUS REMS

Cus Rems is a validation and tracking mechanism for payments of \$50 in relation to failure by Western Power to give adequate notice of planned outages. Cus Rems has been changed from a Lotus Notes based system to a Microsoft Excel based register.

Like EOPS this is a customer complaint or enquiry initiated process; the customer must go through the complaint process to be notified of the eligibility of payment under this scheme.

1.2.8 SPREADSHEETS

Microsoft Excel based spreadsheets are used in conjunction with the various systems to enhance the presentation of information for internal and external reporting processes through graphical representations of the data and perform calculations to produce relevant information not feasible through the individual output of the various systems.

Review of the spreadsheets used in generation of reporting identified that this process remains standardised and is very closely aligned with the internal quality and reliability of supply reporting processes.

1.3 CONCLUSION

Each of the objectives is detailed below with conclusions made by Stantons International in relation to the levels of compliance with the Code.

High level review of processes that result in the generation of Western Power's Report in accordance with the requirements of "Division 3 - Performance Reporting" of the Code

Section 26 of the Code requires processes to be in place for monitoring of the systems of the organisation.

Since the previous review there has been significant change in the systems for monitoring and reporting of Western Power against the Code with the implementation of TCS and progression towards use of the Data Warehouse for Reporting.

It is acknowledged that full functionality surrounding the systems and reporting is currently being finalised and particularly to fully leverage the capabilities of the Data Warehouse.

There has been appointment of a Manager Compliance who is progressively interacting with areas of the business to enhance compliance functions within the organisation. At the time of the review this function has not been fully integrated into reporting of compliance against the Code.

Review of the Reporting processes in relation to Section 27 of the Code outlined that appropriate distribution channels are available within the organisation to satisfy the applicable requirements:

► Report Availability

- Mechanisms have been maintained to ensure that copies of the report are available to the public in places where Western Power conducts business. Additionally a copy is available on the web site maintained by Western Power and can also be posted out. Enhanced access to reports online via the Western Power Web Site exists.

► *Reporting Date*

- The previous report was published 30 September 2008, which was within the required timeframe of 1 October. Additionally processes continue to be maintained to provide reasonable assurance that the reporting deadline is met for the Code.

In conclusion Western Power is compliant with Division 3 – Performance Report of the Code.

Operation of systems that directly contribute to the information published in the report as required by “Schedule 1 – Information to be Published” as contained in the Code

Schedule 1 of the Code states the publication requirements of Western Power in relation to Network Quality and Reliability of Supply Reporting.

In conclusion review of processes within Western Power and the information published in the Report demonstrates compliance with Schedule 1 of the Code.

Adequacy of policies, processes, procedures and resources to ensure compliance with “Part 2 – Quality and Reliability Standards” excluding Clause 9 of the Code

The power quality recording processes since the previous review have progressed through a total of 56 fixed EDM I Meters implemented the Western Power network. This pilot program has not been further implemented to provide a proactive monitoring function. Reliance is placed on the Loggers which are customer complaint driven in relation to monitoring of power quality.

It is considered that processes in place within the Power Quality division of Western Power outlined are appropriate mechanisms are available to record voltage fluctuations and harmonics resulting from customer complaints and annual analysis within the network.

The review reinforced that the duty to disconnect, which is the responsibility of the individual service team, is based on the strong ‘safety’ message being conveyed throughout Western Power to ensure safety of customers and personnel.

In conclusion Western Power is compliant with Part 2 – Quality and Reliability Standards, with no opinion given in relation to Clause 9.

Western Power’s compliance with the Code obligations

This is the fourth year that Western Power is required to report under the Code and there has been significant changes to core fault management system TCS, reporting architecture and tools used in the reporting processes. This has not impacted established processes in relation to keeping Code obligations.

Appropriate processes are established to ensure the Report contains complete, reliable and relevant information before distribution.

Based on the scope of the review Stantons International concludes that the processes within Western Power for the generation of the annual Network Quality and Reliability of Supply Performance Report for the Financial Year Ending June 2008 satisfies the obligations of the Code in relation to Part 2 – Quality and Reliability Standards of the Code, Division 3 – Performance Reporting, and Schedule 1 – Information to be Published.