

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 static monitoring devices for power quality data collection
- Further enhancements to reporting within the applications used to reporting network reliability information.

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 applications and tools that are used in the Code reporting process including TCMS (Trouble Call Management System), RDV (Reliability Data Validator), EDM (Electronic Design and Manufacturing International) meters, DQM (Distribution Quotation Management System), EOPS (Extended Outage Payment Scheme), Cus Rems (Customer Reimbursements), Microsoft Access/TOAD (Oracle Database Tool) and various spreadsheets.

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

1.2.1 TCMS

The TCMS application includes both an automated SCADA (Supervisory Control and Data Acquisition) system and customer complaint initiated process for recording of fault data. This is the central application that maintains the central database from which all statistics for the Network Quality and Reliability of Supply Reporting process is referenced.

1.2.2 RDV

RDV is a validation tool that is used exclusively to identify and analyse the data within TCMS. Events such as system generated faults from the SCADA system can produce faults within TCMS at a feeder level where the power supply can change status very frequently. TCMS can generate several fault jobs as a result of these faults.

As part of an active validation process RDV can identify and allow amalgamation of fault jobs within TCMS that relate to the same event to increase the integrity of data in the system. Additionally, manual processes exist within the organisation allowing ongoing review in relation to the integrity of the TCMS data.

Reporting capabilities of the RDV application has been improved to provide enhanced network fault information and graphs. This reporting facilitates has enhanced both internal reporting and regulatory reporting.

1.2.3 EDM METERS

There are 28 fixed location EDM devices implemented within Western Power's network, these consists of:

- 13 devices within the Perth metro area are located at transformers (approximately 150 customers are serviced from each transformer)
- 13 devices are at the customer premises (low voltage network)
- 2 devices are dedicated for country transformers.

The devices were previously implemented as a trial within the network to gain an appreciation of the power quality for Western Power and have subsequently been implemented as a pilot program. 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.

Strategies for the long term implementation of devices to enable proactive monitoring are currently being investigated within the organisation.

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 verifies this then the record is forwarded to the DQM system. It is then reviewed and either forwarded to crews who are physically dispatched using the information passed through from TCMS or the complaint is referred to another area of Western Power for further analysis.

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

1.2.5 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 times the customer claims there was an outage against the outage as recorded in the TCMS system.

As TCMS may not reflect sustained outages in the network due to reporting of the SCADA system there is 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.

1.2.6 CUS REMS

Cus Rems is a Lotus Notes based system which provides a validation and tracking mechanism for payments of \$20 in relation to failure by Western Power to give adequate notice of planned outages. 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.

1.2.7 MICROSOFT ACCESS AND TOAD

Microsoft Access and TOAD queries are performed to extract data from various databases and systems for the purpose of generating populating spreadsheets for reporting requirements of the Code.

1.2.8 SPREADSHEETS

Microsoft Excel based spreadsheets are used as tools for the reporting process to amalgamate the Microsoft Access and TOAD queries (database searches selecting information based on specific criteria) into graphical representations of the data and perform calculations to produce relevant information not feasible through the individual output of the various systems.

This process is now 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 reporting period the monitoring of power quality in the network has been improved within the installation of the pilot EDMI meters for power quality analysis and reporting. Appropriate monitoring mechanisms are in place to provide enhanced reporting against the requirements of the Code.

Review of the Report and the supporting processes in line with section 27 of the Code outlined that appropriate distribution channels are available within the organisation to satisfy the applicable requirements:

✦ *Report Availability*

- Mechanisms have now been established 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.

✦ *Reporting Date*

- The previous report was published 30 September 2007, 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. Minor issues in relation to the reporting process identified in the 2006 review conducted by Stantons International continue to be addressed. A summary of the changes in relation to Schedule 1 within Western Power are detailed below:

➤ *Isolated Systems*

- Previously Bremer Bay was an isolated system, however there are no longer any isolated systems in Western Power's SWIS (South West Interconnected System) network that need to be included in the reporting process.

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 monitoring processes since the previous review have progressed through the implementation of fixed EDM meters within the Western Power network.

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

The review outlined 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 third year that Western Power is required to report under the Code and there is a sustained improvement to reporting processes internally and externally in relation to power quality.

Appropriate quality assurance processes are now 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.