

VERITEK

# Gas Downstream Reconciliation Major Change Audit Final Audit Report

For

**Contact Energy Limited**

The logo for Contact Energy Limited, featuring the word "Contact" in a red, cursive script font with a registered trademark symbol.

Prepared by Steve Woods – Veritek Ltd

Date of Audit: 11/03/14

Date Audit Report Complete: 07/05/14

## Executive Summary

This Performance Audit was conducted at the request of the Gas Industry Company (GIC) in accordance with rule 65.5 of the 2013 Amendment Version of the Gas (Downstream Reconciliation) Rules 2008. Rule 65.5 requires the GIC to arrange a performance audit of an allocation participant following notification by the allocation participant of the intention to make a change to any of its systems, processes or procedures that could reasonably be considered to be likely to have a major impact on the allocation agent's or allocation participant's compliance with these rules.

Contact intends to replace its Gentrack system with the SAP system and this is considered a "major change".

The purpose of a performance audit arranged under rule 65.5 shall be limited in scope to an audit of the impact of the proposed change on the allocation agent or allocation participant's systems, processes and procedures.

The audit was conducted in accordance with terms of reference prepared by the GIC, and in accordance with the "Guideline note for rules 65 to 75 and 80: the commissioning and carrying out of performance audits and event audits, V2.0" which was published by GIC in October 2010.

The following issues were found during the audit:

- The annual consumption figure in GTN files for outbound switches was incorrect. This matter is now resolved.
- Some data migration defects will not be resolved prior to "go-live" and workarounds have been built to cater for this.

Contact expects some impact on compliance during the cutover period. The following statement is included in Contact's letter to GIC on 25/02/14:

*"Contact will not be able to maintain normal compliance with registry and switching timeframes, and possibly with the completeness and accuracy of submission information (and related files), during the cutover period and the first few weeks following go live."*

On 31/03/14, I produced a draft report in which I recommended Contact provide the report from "Industry Acceptance Testing 5" (IAT5) to GIC to confirm the resolution of functional defects, the status of data defects and progress with the building of workarounds. This current report, dated 07/05/14, includes a review of the IAT5 report provided by Contact on 14/04/14.

In the previous report I recorded five functional and six data defects. There are now only three data defects and treatment plans are in place for these.

The test results show that the functionality of the system will support compliance and resolution of the data defects after go-live will allow full compliance to be achieved.

## Persons Involved in This Audit

Auditor:

Steve Woods  
**Veritek Limited**

Contact personnel assisting in this audit were.

Name	Title
Chandra Yee	Energy Reconciliation Manager
Bernie Cross	Retail Transformation (RT) Industry Business Representative
John Candy	Retail Transformation (RT) Industry Business Representative
Campbell Wilson	Retail Transformation (RT) Industry Business Representative
Kp Chiew	Senior Energy Reconciliation Analyst

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# 1. Scope of Audit

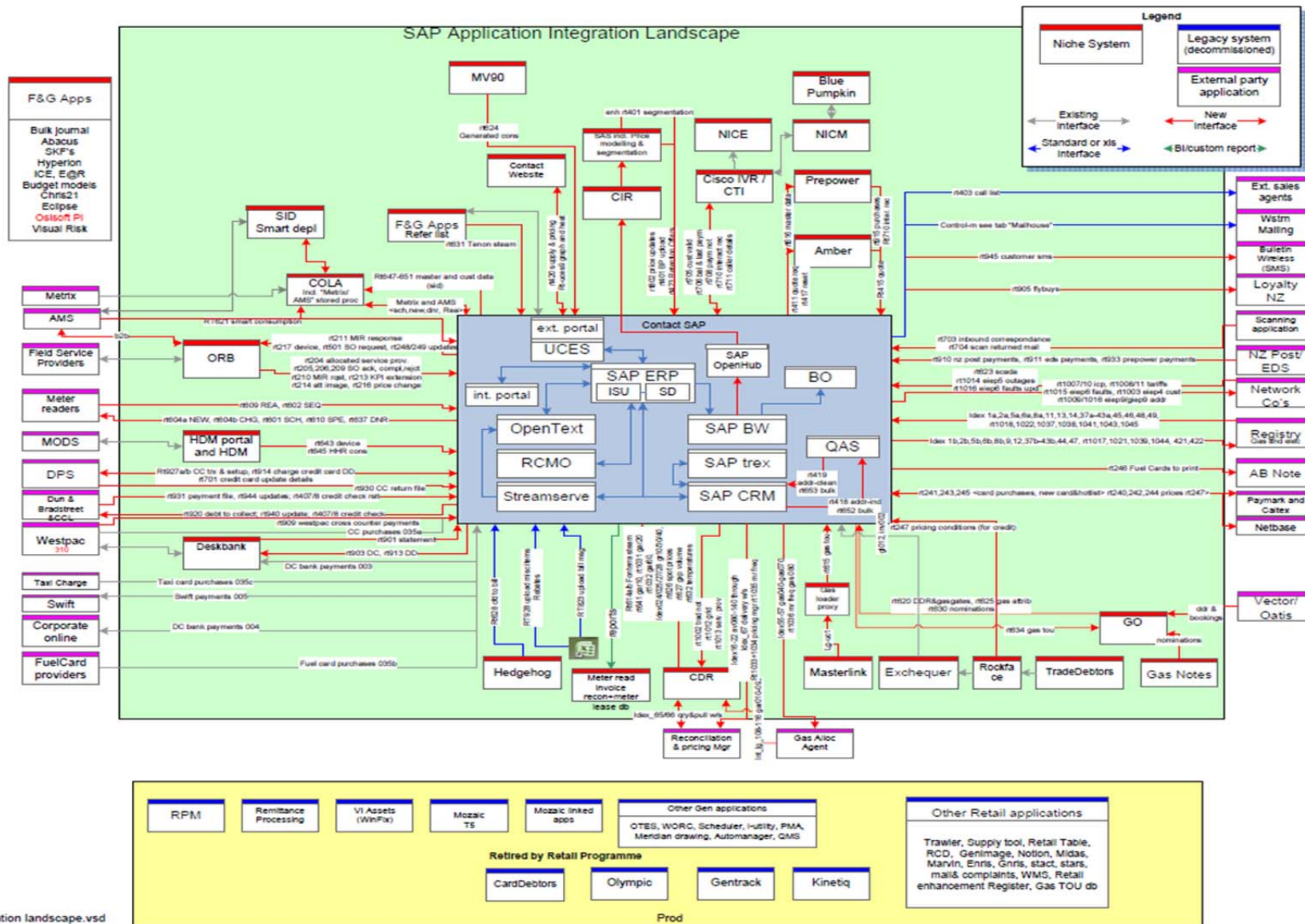
This Performance Audit was conducted at the request of GIC in accordance with rule 65.5 of the 2013 Amendment Version of the Gas (Downstream Reconciliation) Rules 2008. The rules relevant to this audit are inserted below.

- 65.4 If the allocation agent or an allocation participant intends to make a change to any of its systems, processes or procedures that could reasonably be considered to be likely to have a major impact on the allocation agent's or allocation participant's compliance with these rules, it must, at least 90 days before the change is to take place, advise the industry body of the proposed change.
- 65.5 Upon notification of a proposed change under rule 65.4, the industry body must arrange a performance audit of the allocation agent or allocation participant to be completed at least 30 days before the change is to take effect.
- 65.6 The purpose of a performance audit arranged under rule 65.5 shall be limited in scope to an audit of the impact of the proposed change on the allocation agent or allocation participant's systems, processes and procedures.

Contact intends to replace its Gentrack system with the SAP system and this is considered a "major change".

The audit was conducted in accordance with terms of reference prepared by the GIC, and in accordance with the "Guideline note for rules 65 to 75 and 80: the commissioning and carrying out of performance audits and event audits, V2.0" which was published by the GIC in October 2010.

A system architecture diagram is shown on the next page. This is a complex diagram and the important highlights are that Gentrack, Gnrisc and the Gas TOU db will be decommissioned and all functions currently performed in these systems will be performed within the SAP system.



Integration landscape.vsd

## 2. Audit Approach

The purpose of this audit is to determine whether Contact will maintain their current level of compliance with the rules following the implementation of SAP.

The table below lists the items and documents evaluated during the audit. Heavy reliance is placed on Contact's data migration and testing activities.

Many areas cannot be checked for compliance until after go-live, particularly those reliant on people and processes, such as timeliness of switching or submission files. I have concentrated on content of files and the accuracy of calculations.

Contact will undergo a post go-live audit in July 2014 and this audit will be a more detailed performance audit.

Item	Notes
Implementation plan	<ul style="list-style-type: none"> <li>Review to understand the scope and ensure appropriate governance and controls are in place.</li> </ul>
System configuration	<ul style="list-style-type: none"> <li>Document the system configuration to show the relationship between systems and to confirm which parts are within the audit scope.</li> </ul>
Test plan	<ul style="list-style-type: none"> <li>Ensure all items critical to compliance are included in the test plan.</li> <li>Confirm the critical points to be tested prior to go-live</li> <li>Confirm the extent of "parallel running" of the test system against existing systems to enable calculations and file accuracy to be "proven"</li> </ul>
Data migration plan	<ul style="list-style-type: none"> <li>Check the data migration plan and migration plan reporting to ensure discrepancies are identified and those critical to compliance are resolved</li> </ul>
Meter reading/consumption history	<ul style="list-style-type: none"> <li>Confirm that an appropriate length of meter reading/consumption history will be migrated.</li> <li>Confirm that the last actual reading will be migrated if a reading has not been obtained during the period of history.</li> </ul>
Estimated "backup" files	<ul style="list-style-type: none"> <li>Confirm that estimated submission files have been prepared as a "backup" to be used if actual files cannot be used.</li> </ul>
"Go live" decision	<ul style="list-style-type: none"> <li>Ensure all areas critical to compliance have passed testing prior to "go live". Provide GIC with an updated report confirming this before "go live"</li> </ul>

The Implementation Plan is effectively included in the Industry Acceptance Test Plan and the Retail Transformation Proceed Framework, both of which are discussed in this report. System configuration is shown in Section 1.1. The other items are discussed in subsequent sections.

## 2. Test Plan

Contact provided a copy of the Industry Acceptance Test Plan. I evaluated this plan to ensure all items critical to compliance were included. The table below lists the critical areas and confirms their inclusion in the test plan.

Function	Included in Test Plan?	Comments
ICP setup - altitude	✓	Part of data migration. Contact will continue to use registry data for altitude
ICP setup – new connections	✓	Part of data migration. Contact will continue with current validation arrangements
Switching	✓	<p>I checked the content of GTN files received and sent to ensure the files were capturing the correct information from SAP and that SAP was capturing the correct information from GTN files received.</p> <p>GTN files sent had daily kWh in the average annual GJ field. Contact has now resolved this matter.</p> <p>Contact will ensure that all “switches in progress” are cleared from Gentrack prior to go-live. Switches after go-live will be conducted entirely in SAP.</p> <p>Contact demonstrated the “exception management” process for managing switches in progress. This process will also refer to the daily switch breach report from the registry.</p>
Metering setup – meter pressure	✓	Part of data migration. Contact will continue with current validation arrangements
Billing factors – temperature	N/A	Contact has made changes to their “mapping table” for temperature and will upload different information into SAP than is used in Gentrack. The information will continue to be historic data from NIWA at 300mm depth.
Billing factors – Calorific Values	N/A	Contact will continue to source data from OATIS and will not change this process
Meter reading and validation	✓	Some of the compliance responsibilities are process related and will be checked during the full audit. For example meter reading targets
Energy consumption calculation	✓	Contact provided an example of the calculation and it is confirmed as accurate.
Estimation and correction	✓	



<p>Provision of consumption information</p>	<p>✓</p>	<p>Contact has been comparing files generated from legacy systems with SAP files. Some discrepancies exist and can be explained as follows:</p> <ul style="list-style-type: none"> <li>• The forward estimate methodology in SAP is slightly different than that used in legacy systems</li> <li>• Some data migration issues are still being resolved and not all data has migrated successfully to the test system</li> <li>• The seasonal adjustment daily shape values in the test system are different versions to those in the legacy system</li> </ul> <p>I conducted some checks at ICP level to ensure HE calculations were operating as expected and that the data was correct in the ICP level file that makes up the GAS040 file. Contact conducted testing of a larger range of scenarios provided by me to confirm the HE calculations were operating as expected.</p> <p>Contact will continue to compare GAS040 files from legacy systems with those from SAP to ensure the SAP files are correct by June 2014 when the first submissions will be conducted from SAP for the May 2014 month.</p> <p>The IAT5 report indicates that the difference between legacy and SAP for HE totals is only 0.092%</p>
<p>Energy quantities billed</p>	<p>✓</p>	<p>I confirmed the accuracy of the GAS070 file in the test system at ICP level by comparing some records against invoices in SAP.</p>

### 3. Industry Acceptance Testing

Contact has completed IAT5 and provided a copy of the report on 14/04/14. A summary of the findings is as follows:

- Three data migration defects with a moderate severity still exist and they affect the GAS040 file.
- The treatment plan is that the defects will be fixed by the Industry Team post go-live.
- One of the three data migration defects relates to forward estimates and results in symptoms similar to a “meter rollover”. A workaround tool is in place to identify and correct this issue with the relevant meters.
- The data migration results show that most ICPs and meter reads loaded successfully to SAP during IAT5. Treatment plans are recorded for the various reasons data migration failed or was not within tolerance. Many of the migration issues relate to “meter rollover”, timing issues and registry events.

The table below shows the effect on files of the functional and data migration defects. All functional defects have been resolved and the three data defects affect the GAS040 file only.

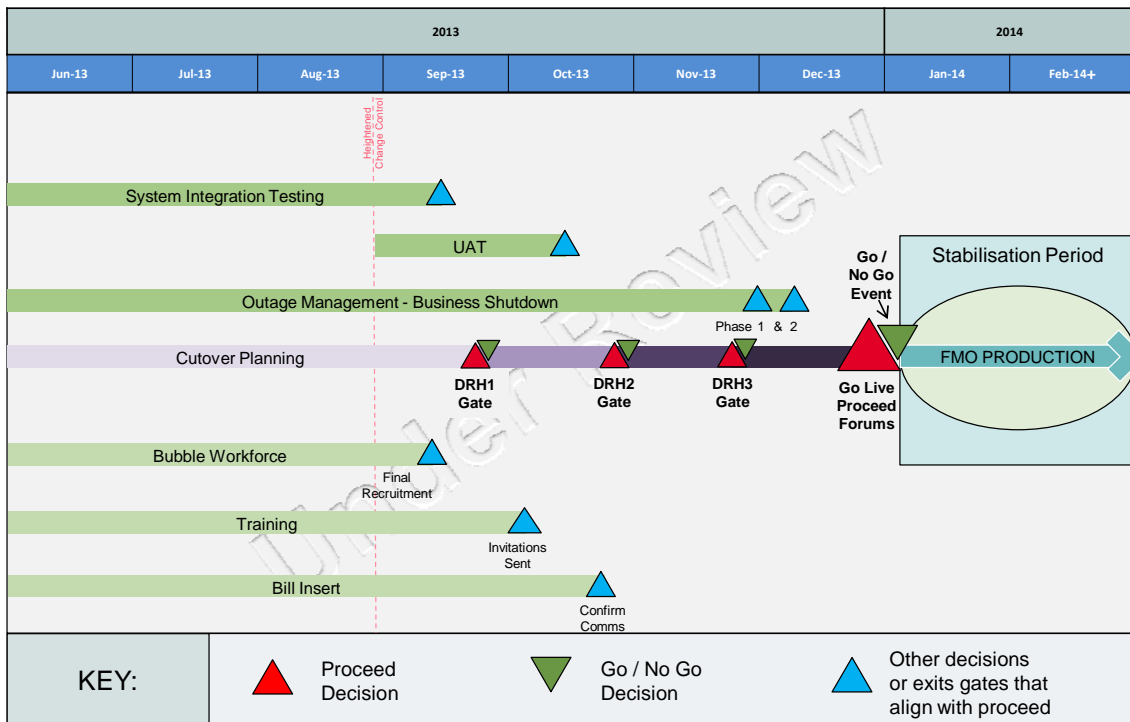
<b>File</b>	<b>Functional Defects</b>	<b>Moderate Severity Data Defects</b>
GAS040	0	3
GAS050	0	0
GAS070	0	0

Category	Defect Severity	Definition	Examples
<b>Critical</b>	<b>1</b>	<p><b>Function or Application Unusable or Inoperable</b></p> <p>The application has demonstrated a complete failure causing total loss of function creating a critical impact on the business. No workaround exists.</p>	<ul style="list-style-type: none"> <li>• Application causes abnormal termination of concurrently running applications or performance degradation.</li> <li>• Data integrity is in jeopardy.</li> <li>• A critical program in the application aborts preventing the use of a critical function.</li> </ul>
<b>Major</b>	<b>2</b>	<p><b>Function or Application Severely Restricted</b></p> <p>The application has demonstrated a severe failure preventing the use of certain function(s) within the applications. A workaround is available for a limited duration and must be negotiated and agreed to by those areas performing or affected by the interim process.</p>	<ul style="list-style-type: none"> <li>• Requests to view selected data resulting in data presented incorrectly.</li> <li>• Certain combinations of data causing abends when adding data to a database.</li> <li>• Certain types of processing cannot be done.</li> </ul>
<b>Moderate</b>	<b>3</b>	<p><b>Function or Application Minimally Restricted</b></p> <p>The application has demonstrated a minor failure with minimal impact to business functions or programmes. A workaround is available for an indefinite period of time.</p>	<ul style="list-style-type: none"> <li>• An undefined key pressed causes the function to cleanly abort.</li> <li>• A field is documented as optional but is required.</li> </ul>
<b>Minor</b>	<b>4</b>	<p><b>Function or Application Minimal Deviation</b></p> <p>The application has demonstrated a minor deviation from the specification with minimal impact to business function or programs. A work-around is unnecessary.</p>	<ul style="list-style-type: none"> <li>• Error message text does not match text in the external design.</li> <li>• An error message is not documented.</li> </ul>

## 4. Data Migration

The schedule below shows three “dress rehearsals” and these all include a complete data migration from legacy systems to SAP. The original dates are still shown in this table, but the schedule has effectively moved forward by four months and “go-live” is now occurring at Easter 2014.

### Proceed Decision Points



The table below shows the approach to data migration is to ensure that 99.9% of data needs to be successfully migrated in order to proceed (point 3.01). In addition, all critical and major defects are required to be addressed and resourcing must be in place to deal manually with moderate and minor defects. As mentioned in Section 3, some data migration issues still exist, and some workarounds will still be in place at “go-live”.

## Proceed Framework - Data

Category	ID Number	Proceed Outcome	Proceed criteria	Measurement Metrics	Agreed Target
Data	3.01	Data Migration Successful	% of applicable accounts that are migrated and achieve target KPIs	# Installations billable # Charges comparison # A/c balance comparison # ICP's correctly migrate for Network Settlements (38month rolling view)	# Installations billable >= 99.9% # Charges comparison >= 99.9% # A/c balance comparison >= 99.9% # Network Settlements >= 99.9%
Data	3.02	Volume of manual migration ( post go-live)	Approach defined and resourcing agreed for accounts that will have to be migrated manually.	Days to remediate post go live	< 250 Days
Data	3.03	Volume of partial loads and migrated incorrectly	Approach defined and resourcing agreed for accounts that will have to be corrected post migration.	Days to remediate post go live	< 250 Days
Data	3.04	Migration bill blocks to be resolved	Volume of migration induced bill blocks	All migration and Incident billing blocks resolved	0.1% of target customers
Data	3.05	Business & finance reconciliation successful	Reconciliation and verification results from final Dress Rehearsal within agreed tolerance levels	Business and financial metrics TBC	>= 99.9%
Data	3.06	Functionality operational to merge accounts between legacy systems	Assurance tests passed on SCV data	# of defects	# 0 unresolved defects (sev 1 and 2s)
Data	3.07	Defects Addressed Prior to go-live	All critical, and major defects addressed prior to go-live. Moderate and minor defects significant reduced.	# of defects # of Impacted Customers	#0 Sev 1 Defects #0 Sev 2 Defects Sev 3 & Sev 4 - Treatment Plans in place

## 5. Migration of Historical Data

Contact intends to migrate 30 months plus the last read before this period so that sufficient history is available to ensure the accuracy of revision files.

## 6. Estimated Backup Files

The table below shows Contact's submission schedule. The first submissions from SAP will be in June 2014 for May 2014. The files for April 2014 will be created in both systems so a comparison can be made between the two sets of files. Contact also intends to create a set of estimated files that can be used in the case of inability to generate files out of SAP for the April 2014 month.

Submission Month	Initial	Interim	Final
02/2014	01/2014	10/2013	01/2013
03/2014	02/2014	11/2013	02/2013
04/2014	03/2014	12/2013	03/2013
05/2014	04/2014	01/2014	04/2013
06/2014	05/2014	02/2014	05/2013
07/2014	06/2014	03/2014	06/2013
08/2014	07/2014	04/2014	07/2013
09/2014	08/2014	05/2014	08/2013
10/2014	09/2014	06/2014	09/2013
11/2014	10/2014	07/2014	10/2013
12/2014	11/2014	08/2014	11/2013
01/2015	12/2014	09/2014	12/2013
02/2015	01/2015	10/2014	01/2014
03/2015	02/2015	11/2014	02/2014
04/2015	03/2015	12/2014	03/2014
05/2015	04/2015	01/2015	04/2014
06/2015	05/2015	02/2015	05/2014
07/2015	06/2015	03/2015	06/2014

<b>LEGACY</b>
<b>SAP WITH LEGACY BACKUP</b>
<b>SAP</b>

## 7. Proceed Decision

The schedule in Section 3 shows a “proceed decision” milestone prior to go live. There are a significant number of outcomes to be met prior to the decision to go live.

The table below shows the top eleven of these outcomes.

### The Proceed Top 11 Outcomes

Category	ID No.	Proceed Outcome	Proceed criteria	Measurement Metrics	Agreed Target
Process	1.05	Test Success - UAT	UAT Exit Criteria achieved	UAT Execution completed and UAT Exit Report signed off	No Sev 1 & 2 defects (per Test Strategy severity definition). Plans, comms and resolution dates agreed for Sev 3 & 4's
Process	1.09	FMO Exceptions	Criteria - 100% of BPEMS can be raised and resolved by the assigned Org Unit as designed	Completion of Functional Testing	No severity 1,2 defects outstanding. Plans, comms and resolution dates agreed for Sev 3 & 4's
Technology	2.01	The end-to-end infrastructure and technical landscape is ready in all respects.	Required infrastructure & environments are built to specification, fully connected and operating within the defined parameters. <i>(Please see earlier slide for full criteria)</i>	Performance Test Exit Report signed off OAT Test exit report signed off Environment Landscape Document signed off	No Sev 1 & 2 defects (per Test Strategy severity definition). Plans, comms and resolution dates agreed for Sev 3 & 4 defects Signed off landscape document
Technology	2.02	The end-to-end solution performance is acceptable.	Solution is operating within defined non-functional requirements and has proven Disaster Recovery (DR) processes across: <i>(Please see earlier slide for full criteria)</i>	Performance Test Exit Report signed off OAT Test exit report signed off DR Test Exit Report signed off	No Sev 1 & 2 defects (per Test Strategy severity definition). Plans, comms and resolution dates agreed for Sev 3 & 4 defects
Data	3.02	Volume of manual migration (post go-live)	Approach defined and resourcing agreed for accounts that will have to be migrated manually.	Days to remediate post go live	< 250 Days
Data	3.05	Business & finance reconciliation successful	Reconciliation and verification results from final Dress Rehearsal within agreed tolerance levels	Business and financial metrics TBC	>= 99.9%
People	4.02	Staff trained	Courses offered/attendance in accordance with training needs analysis and training schedule for Contact staff inclusive of BWF	% of people trained % reschedule rate Plan developed	All critical nominated people trained (~80% overall) before go live. Reschedule rate of less than 15%. Plan in place to train remaining staff
People	4.08	Resource Levels Appropriate	Resourcing is at agreed levels required to support Retail Transformation	Recruitment against Bubble Workforce plan % of BWF staff ready Attrition rate % of all impacted staff	Bubble workforce in place 100% of new people inducted per plan Resources provisioned as per targets in plan
Customer	5.02	Execution of customer communications plan	Customers with specific change impacts communicated to Pre-migration comms complete Post-migration comms ready	Customers advised	Communications plan executed
Cutover	6.04	Dress Rehearsal Readiness	Dress Rehearsals executed successfully	Dress Rehearsal run to schedule and an acceptable level of quality	100% of planned activities complete
Support	7.01	Post implementation support framework agreed	Stabilisation structure	Stabilisation work stream structure has been developed with all roles filled, accountabilities defined between Program, business and ICT.	Signed off structure with 100% of roles filled

## 8. Issues and Recommendations

The following issues were found during the audit:

- The annual consumption figure in GTN files for outbound switches was incorrect. This matter is now resolved.
- It is expected that some data migration defects will not be resolved prior to “go-live” and workarounds will be built to cater for this.

In the previous report, I recommended Contact provide the report from IAT5 to GIC to confirm the resolution of functional defects, the status of data defects and progress with the building of workarounds. This report has been provided and I have summarised the main issues which mainly relate to data migration. I have confirmed that workarounds are in place to address data migration exceptions.

## 9. Confidentiality

Subject to rule 72, the auditor must give a copy of the draft audit report to:

- The person or persons that are the subject of the audit;
- The allocation agent, if the allocation agent is not the subject of the audit;
- Any other allocation participant which the auditor considers has an interest in the report; and
- The industry body.

Rule 72 states:

*“In providing a draft audit report or final audit report, the auditor must provide a complete version to the industry body.*

*However, at the discretion of the auditor, the versions of the draft audit report and the final audit report provided to any other person or published under these rules may exclude any confidential information obtained in the conduct of the audit.”*

The draft audit report was provided to the allocation agent and GIC. I considered whether any other allocation participant had an interest in the report and concluded that they did not, for the following reasons:

- The report concludes that the functionality of the system will support compliance and resolution of any data defects after go-live will allow full compliance to be achieved.
- The main area which can impact on other participants during a system change of this nature is switching and switching is excluded from the scope of the audit.



This final report includes all information relevant to compliance but excludes some confidential information related to the implementation process, parties involved and areas which are outside the scope of the audit, for example billing and customer management. The table below lists the parts of the report which have been redacted and the reasons for the redaction.

Subject	Section	Reason
Persons involved in audit	Persons involved in audit	This table identifies some individuals who are not currently employees of Contact.
System architecture	1.0	This diagram identifies all systems used by Contact, many of which are outside the scope of the audit.
Data migration	4.0	This chart does not directly relate to compliance and the sentence above the table describes the table. The second table contains information related to other functions outside the scope of the audit
Proceed decision	7.0	This table contains information related to other functions outside the scope of the audit

## 10. Draft Report Comments

A draft audit report was provided to GIC, the allocation agent and Contact. In accordance with rule 70.3 of the Gas (Downstream Reconciliation) Rules 2008, those parties were given an opportunity to comment on the draft audit report and indicate whether they would like their comments attached as an appendix to the final audit report. The following parties responded.

Party	Response	Comments provided	Attached as appendix
Contact	Yes	Yes	Yes
Gas Industry Company	Yes	No	No
Allocation agent	Yes	No	No

The comments received from Contact were considered in accordance with rule 71.1, prior to preparing the final audit report. No changes have been made to the final report as a result of the comments received.

## Appendix 1 Contact Energy Response

A fourth dress rehearsal completed in the last few weeks indicated that, had it been the actual cutover, a decision would have been made to go live. A decision to proceed to cutover has now been made, and cutover is scheduled to occur over the Easter period with a go live decision (or a decision to back out) expected to be made on Tuesday 22 April. Assuming a decision is made to go live the business will then ramp up again over the following days. The new system and processes will also go through a stabilisation period which includes some workarounds to ensure non-TOU consumption submission data is materially accurate during the period when data migration exceptions affecting accuracy of the submission data, in particular forward estimates, are identified and cleared.