Quality of Service Incentive Scheme
Audit of Interruptions Reporting 2008/09
Final Report

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Final Report

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Glossary

BPI	British Power International
CE	CE (UK) Ltd. incorporating the NEDL and YEDL licensed areas
CI	Customer Interruptions – calculated as per the formula below
CML	Customer Minutes Lost – calculated as per the formula below
CN	Central Networks incorporating CN - East (formerly East Midlands Electricity) and CN - West (formerly Midlands Electricity and Aquila) licensed areas
Consortium	The consortium of BPI and MM
DNO	Distribution Network Operator
DPCR3	Distribution Price Control Review for Period 1 April 2000 to 31 March 2005
DPCR4	Distribution Price Control Review for Period 1 April 2005 to 31 March 2010
EDFE	EDF Energy Group incorporating EPN, LPN and SPN licensed areas
EHV	Extra High Voltage – all voltages above 20kV up to but excluding 132kV
ENMAC	The GE Harris proprietary Energy Network Management and Control System
ENW	Electricity North West
HV	High Voltage – all voltages above 1kV up to and including 20kV
IIP	Information and Incentives Project
IIS	Information and Incentives Scheme
LV	Low Voltage – voltages of less than 1kV
MM	Mott MacDonald
MPAN	Meter Point Administration Number
MPAS	Meter Point Administration Service
MPRS	Meter Point Registration System
NaFIRS	National Fault and Interruptions Reporting Scheme
NEDL	Northern Electricity Distribution Limited
Ofgem	Office of Gas and Electricity Markets
PC-NaFIRS	Langhorne Computers' proprietary software used by DNOs for NaFIRS data capture and reporting to Ofgem
QA	Quality Assurance checking of incident-auditing workbooks carried out as a follow-up to the audit visits
QoS	Quality of Service
rigs	QoS Regulatory Instructions and Guidance version 5, Ofgem, March 2005
SCADA	Supervisory Control and Data Acquisition

SI	Short interruption – an incident in which the loss of supply is less than 3 minutes in duration
SP	ScottishPower - SP Transmission and Distribution incorporating the SPD and SPM licensed areas
SPD	SP Distribution licensed area
SPM	SP Manweb licensed area
SEPD	Southern Electric Power Distribution
SHEPD	Scottish Hydro-Electric Power Distribution
SSE	Scottish and Southern Electricity incorporating the SEPD and SHEPD licensed areas
UUES	United Utilities Electricity Services
WPD	Western Power Distribution incorporating the South Wales and South Western licensed areas
YEDL	Yorkshire Electricity Distribution Limited

Note:

Within this document:

The term “higher voltage” is used to indicate all voltages greater than 1kV.

The term “licensed area” is used, where necessary, to indicate the geographical area under consideration and to differentiate between areas in those situations where a parent company holds more than one distribution licence.

The calculations of Customers Interrupted (CI) and Customer Minutes Lost (CML) within this document are adapted from the formulae contained in the rigs to reflect the CI and CML generated by each stage of the incidents being audited.

CI is the number of customers interrupted in the relevant restoration stage per 100 connected customers. It is calculated as:

$$CI = \frac{\text{The sum of the number of customers interrupted for incidents being audited} * 100}{\text{The total number of connected customers}}$$

CML is the duration of interruption to supply expressed as the number of customer minutes lost in the relevant restoration stage per connected customer. It is calculated as:

$$CML = \frac{\text{The sum of the customer minutes lost for all restoration stages for incidents being audited}}{\text{The total number of connected customers}}$$

The total number of connected customers is as declared at 30 September 2008.

Summary

Overview

British Power International (BPI) and Mott MacDonald (MM) (the Consortium) has been awarded the contract to assist Ofgem with the Quality of Service (QoS) Incentive Scheme audits of DNOs' interruptions reporting for the reporting years 2007/08, 2008/09 and 2009/10.

This report describes the work carried out and results obtained for the audit of interruptions reporting for the reporting year 01 April 2008 to 31 March 2009. The minimum levels of accuracy that DNOs are required to meet under DPCR4 are set out in the Quality of Service Regulatory Instructions and Guidance version 5 (rigs). These minimum levels of accuracy are shown in the following Table.

	Overall		LV	
Required Level of Accuracy	**Stage 2 – Subset Incident Sample**	**Stage 3 – Full Incident Sample**	**Stage 2 – Subset Incident Sample**	**Stage 3 – Full Incident Sample**
Customer Interruptions (CI)	97%	95%	92%	90%
Customer Minutes Lost (CML)	97%	95%	92%	90%

Audit Process

Only Stages 1, 2 and 4 of the four-stage IIS audit process were used to determine the final DNO interruptions reporting accuracies because all DNOs passed the Stage 2 levels of accuracy, thus making Stage 3 unnecessary. Stage 1 involved calculating the MPAN accuracy for the relevant licensed area. Stage 2 covered the audit of reporting for the reduced sample of incidents selected by Ofgem and in Stage 4 the MPAN and incident reporting accuracies were combined to give the final reporting accuracies for CI and CML at both the Overall and LV levels. Stage 4 was carried out automatically within Ofgem's incident-auditing workbook. In addition, a questionnaire was used to evaluate progress on the relevant connectivity model although connectivity model accuracy was not used in the calculation of final reporting accuracy.

With the exception of the pilot visit, where the whole audit was again unannounced, Ofgem circulated the incident samples to DNOs prior to the audit visits and this contained only the pre-selected subset of incidents for use in Stage 2 of the audit process, thus continuing a recommendation from previous IIS audits. Feedback during the visits confirmed that this had again saved DNOs a substantial amount of preparation time.

Other recommendations carried forward from the previous year were the repeat of the exclusion of ten incidents from the pre-announced sample at 11kV and the doubling to ten of the number of LV incidents excluded from the pre-announced sample. The DNOs were asked to extract the audit trails for these twenty incidents 'live' during the audit visits. Ofgem disaggregated the incidents selected for audit proportionately across the various voltage levels. Spare incidents were again provided, but these were only audited if it was necessary to substitute them for incidents in the sample that could not be audited.

A further recommendation carried forward from last year's audits was the repeat of an audit of a sample of those 'incidents' determined by the DNOs to be non-reportable. Generally the sample size was one hundred incidents per DNO but, in the case of the three DNOs where last year's audit had determined that one or more incidents should have been reported, this year's sample size was increased to two hundred.

The telephone numbers associated with three HV and two LV incidents was again cross-checked for each DNOs' returns to Ofgem's consultants for potential follow-up under the quality of telephone response survey.

This year, the visiting audit team comprised of one person from the Consortium (BPI) and one or two people from Ofgem.

The Consortium team member concentrated on the audit of the higher voltage incidents and the drafting of the DNO-specific reports. The Ofgem team members concentrated on the audit of the LV incidents and also managed the inputting of audit data into the incident-auditing workbook.

The scrutiny of the sample of non-reported 'incidents' and the audit of the sample of telephone numbers was a role shared between the visiting auditors.

Audit Results

All DNOs passed the audit of the Stage 2 sample by exceeding the minimum requirements for CI and CML accuracy at both the Overall and LV levels. Most DNOs have continued to either maintain or to improve the accuracy of their measurement systems. In addition there is evidence that they are implementing the recommendations made during the audit of the 2007/08 reporting year and are continuing to actively train an increasing number of their employees to the requirements of rigs version 5.

The QA -checked QoS Incentive Scheme, Combined Stage 1 and Stage 2 audit results are summarised in the following table.

Licensed Area	Overall CI (Minimum Requirement 97%)	Overall CML (Minimum Requirement 97%)	LV CI (Minimum Requirement 92%)	LV CML (Minimum Requirement 92%)
CE – NEDL	99.82%	99.94%	98.94%	97.29%
CE – YEDL	99.67%	99.38%	97.55%	97.51%
CN – East	99.92%	99.95%	99.97%	99.73%
CN – West	99.50%	99.52%	99.23%	99.97%
EDFE – EPN	99.05%	98.70%	97.58%	97.70%
EDFE – LPN	99.54%	99.27%	97.61%	94.76%
EDFE – SPN	99.72%	99.74%	99.68%	95.79%
ENW (UUES)	99.46%	99.15%	99.46%	98.08%
SPD	98.73%	98.81%	98.35%	96.59%
SPM	99.40%	99.39%	98.12%	99.26%
SSE – SEPD	99.98%	99.93%	98.97%	98.90%
SSE – SHEPD	99.86%	99.80%	98.60%	99.62%
WPD – Sth Wales	99.99%	99.96%	99.80%	99.58%
WPD – Sth West	99.99%	99.95%	99.46%	99.65%

No changes to DNO's measurement systems were found that materially affected reporting accuracy. All calculations presented by the DNOs to support the accuracy of their measurement systems were reviewed and accepted by the visiting auditors.

All DNOs have measurement systems that 'freeze' the record of the number of customers involved in an incident at the higher voltage levels and thus provide a robust audit trail. At the lower voltage level DNOs elected to explain variances in customer numbers if it was relatively easy to do so or where they considered the variance to be significant. A number of DNOs are in a position to record LV customer numbers on feeders at the time of incidents and it was again suggested that in future years such locked records be accepted in a similar way to those at the higher voltages.

Generally, DNOs have maintained the improvements in their recording of pre-arranged interruptions since the audits of previous reporting years; most are recording the notified interruption times in their incident reports and all DNOs could provide information regarding the interruption times notified to customers.

Although DNOs have trained their field staff to provide more definitive information on interruption and restoration times, the information provided to support the audit trail for LV incidents was again occasionally variable where it was derived from non-system sources. Whilst the visiting auditors accept that DNOs do not have full phase connectivity, and as such in certain circumstances have to rely on estimates from site, they again noted the different lengths to which DNOs go to validate the information provided. The visiting auditors would expect to see evidence of how LV site estimates had been derived and, where possible, DNOs carrying out post incident checks to ensure that the site estimate is accurate when compared with system information. A number of DNOs were again able to provide excellent notes to pinpoint the location of open-circuit

faults and this greatly aided the audit process. Such practice is welcomed and encouraged.

There appeared to be no reduction in reporting accuracy associated with the twenty incidents that were not advised to the DNOs in advance of the audit visits. In general the time taken to produce the necessary audit information and audit the incidents was no greater than the time taken to audit the announced incidents. For the ten unannounced HV incidents, times varied between twenty-five minutes and two hours to complete the audit of these incidents, the time being dependant upon the degree of automation contained within the individual DNO's measurement and recording systems. The visiting auditors readily acknowledge that the complexity of an unannounced incident and the number of stages within it have a bearing on the ease with which it can be audited.

The visiting auditors were pleased to see that several DNOs had again involved different people in this year's audit process, thereby spreading experience within the organisation. The visiting auditors were also pleased to note that some DNOs are enhancing their internal auditing regime, involving more of their personnel in the process.

Non-reported 'Incidents'

A sample of those 'incidents' that had not been submitted to Ofgem as contributing to CI or CML was again examined for each licensed area. The sample was stratified according to the percentages that each different 'category' of non-reported incident was submitted to Ofgem by each DNO.

Two hundred non-reported incidents were examined for each of the three licensed areas where issues had been found in the previous year's audit. The sample size for the other DNOs was one hundred per licensed area.

Quality of Telephone Response

In addition to the audit of incidents, the visiting auditors sampled the DNOs' measurement systems for the records of customers who had telephoned the DNOs associated with three HV and two LV incidents selected at random from the Stage 2 audit sample.

The details of callers captured in the DNOs' measurement systems were compared with the details of callers submitted to Ofgem's telephony consultants for sampling in connection with the quality and speed of telephone response incentive scheme.

'Clock-stopping'

As an addition to this year's IIS audit, a sample of up to twenty randomly selected incidents were examined for each licensed area where the DNO had used 'clock-stopping' as an element of its reporting. Where available, up to fifteen incidents were chosen at LV and up to five at HV.

For each incident, the DNO's measurement and recording systems were examined for evidence to justify the 'clock-stopping'. In particular, the visiting auditors were keen to see the precise wording of the entries in DNOs' trouble-call logs and to compare this with the wording contained within the rigs.

Learning Points

The visiting auditors have noted the following learning points:

- Setting and confirming the timetable well in advance again considerably aided the smooth running of the process;
- The modified automated incident-auditing workbook continues to be well received as it provided the DNOs with an 'instant' interim indication of the accuracy results;
- Errors in reporting are still generally found to lie in those parts of DNOs' measurement systems where manual input is required;
- The IIS process has become well established and DNOs have generally introduced internal audit regimes that are based upon it. Generally, the results of the IIS audits for reporting year 2008/09 suggest that these internal audits are having a positive effect on DNOs' accuracy of reporting, but a number of the Stage 2 results suggest that more still needs to be done in some DNOs;
- The information contained within most DNOs' measurement systems enabled the unannounced incidents to be audited without the DNOs having spent time in either producing the documents or recreating the incident in advance of the audit visit;
- Whilst the number used was again small, spare incidents should continue to be included in the sampling regime to provide for those instances where it is not possible to audit one of the sample incidents;
- To save DNOs' potentially unnecessary preparation time, spares should be unannounced ahead of the audit visit and the information for them should only be gathered and audited if they are needed to substitute for a sampled incident;
- All DNOs' measurement systems contain many incidents that are deemed to be non-reportable. Generally, auditable evidence was available to determine why the DNO reached this conclusion, but some non-reported incidents were again found that should have been reported;
- DNOs continue to use differing classifications to categorise the non-reported incidents and a more 'standard' set of criteria would facilitate better sampling, inter-DNO comparisons and further assurance that this aspect of DNOs' measurement and reporting systems is being managed:
- The approach to the sampling of telephone call details that was adopted for the 2008 annual IIS audit was again used this year. It continues to be an improvement on that used during the 2007 annual audit;
- The inclusion of a sample of clock-stopping incidents added a further dimension to this year's annual audit and highlighted differences of approach between the DNOs;
- DNOs should continue to consider periodic rotation of staff responsible for QoS Incentive Scheme reporting so as to spread experience and provide for 'strength in depth' within their teams;
- Some DNOs included new people in their audit teams this year and this approach is encouraged as it enhances a DNO's expertise in this area;

- It is recommended that, where DNOs have more than one control centre, then audits continue to rotate between them, to ensure that as many staff as possible have exposure to, and visibility of, the audit process; and
- The visiting auditors again found it useful to spend time with DNOs reviewing a number of IIS related questions and general Quality of Service issues once the main section of the audits were complete. Such dialogue is welcomed and encouraged; as such the audit timetable should be structured to facilitate this, where DNOs wish to take advantage of the visiting auditors' presence.

General Recommendations

Based on the above comments and observations, the following general recommendations are made:

- The reduced number of people working as visiting auditors should be continued as this enables them to make direct comparisons between DNOs on such matters as acceptable forms of evidence and consistency of reporting;
- Some DNOs are still using the time of reports of damaged LV cables or the time of an HV system alarm as the incident start time, when no report has been received that supplies have been lost. The Consortium confirms its previous recommendation that a DNO should not consider an incident to have started until it receives a report that supplies have been lost;
- Similarly, where a DNO believes it has restored supplies, evidence of best endeavours to confirm that supplies have in fact been successfully restored is required in order to support subsequent re-interruption stages or new incidents, otherwise the visiting auditors should consider that earlier restoration attempts have been partly or wholly unsuccessful;
- The audit of a sample of incidents where clock-stopping had been used should be retained;
- The visiting auditors were again disappointed that, on a number of occasions of clock-stopping, the information as to the nature of the customer's request for restoration work to be suspended and the agreed restart time did not form a robust audit trail. In cases where the customer does not specify a restart time, some DNOs use their standard work start time, generally 08:00. Other DNOs use the Guaranteed Standard (GS10 – 'Distributor's Fuse') time of 07:00 to avoid confusion amongst its personnel. In future it is again suggested that, if the rigs are to be amended, a standard restart time should be employed except where DNOs have fully auditable information to support the use of a different restart time;
- The phraseology contained in some DNOs' 'trouble-call' logs regarding the use of clock-stopping could be interpreted as non-rig compliant by the use of words such as "it was agreed with the customer" as opposed to the "customer requested" … (to delay restoration work). The use of this phraseology is understandable in noting the results of a telephone conversation but it is recommended that its use should be stopped in recording the reason for clock-stopping in DNOs' measurement systems as it could render the underlying use of clock-stopping to be non-rig compliant. The use of this phraseology was brought to the attention of the DNOs concerned during the audit of the clock-stopping incidents and its use was not taken as being non-rig compliant this year;

- A sample of updates to connectivity models should be retained as part of the audit to encourage DNOs to maintain accuracy;
- It is still too early to accept the repeated request from some DNOs that the visiting auditors should accept as auditable evidence time-stamped "feeder numbers" of the number of customers on an LV feeder at the time of the incident as the processes are not robust throughout all DNOs and it would therefore introduce an unacceptable degree of audit inconsistency between DNOs;
- Continue with the audit of non-reported incidents as sampled by the mix of reasons for not reporting. It is recommended that this is done in conjunction with the introduction of a more standard set of reasons for categorising non-reported incidents across the DNOs so that better comparisons can be made and the audit can focus samples on those reasons deemed most likely to give rise to potential errors;
- Generally retain the total number of non-reported 'incidents' to 100 per DNO but retain the number at 200 where this year's audit found evidence of mis-reporting;
- Continue with the sampling from the full population of reported incidents for the reporting year, irrespective of whether they are related to exceptional events;
- Further consider including a table showing absolute accuracy at the overall and LV level as part of the annual IIS audit report;
- As all DNOs passed the Stage 2 levels of accuracy Ofgem should continue to only issue the Stage 2 incidents ahead of the audit visits. Ofgem would then only issue the Stage 3 incidents to any DNO that failed the Stage 2 levels of accuracy; where necessary, the Stage 3 incidents being audited during a follow-up audit visit, or, if practicable, by extending the initial audit visit;
- Further consider showing the accuracy of 132kV and EHV incidents and HV incidents separately in addition to including them in the official overall results calculations;
- Similarly, show the number of outlying incidents and those with variances by these categories;
- Following the experience of this year's audit visits it is still not possible to recommend an increase in the number of unannounced incidents for all DNOs due to the varying nature of their measurement and reporting systems. However, it is recommended that Ofgem retains the present numbers of unannounced incidents at both the LV and the 11kV levels in future audits to add to the additional level of audit rigour;
- Continue to include an examination of all those incidents reported as being due to the failure of an infeed from an adjacent DNO or from NG in future audits; and
- Continue to include an element of cross-checking of customer details between DNOs' measurement systems with the details of callers submitted to Ofgem's quality of telephone response consultants.

1 Introduction

Background

1.1 The Office of Gas and Electricity Markets (Ofgem) is committed to an ongoing programme of work to strengthen incentives on Distribution Network Operators (DNOs) to deliver an appropriate quality of service to customers. This involves the definition and ongoing review of appropriate output measures. In addition, reporting and audit arrangements have been put in place to help maintain the consistency and accuracy of DNOs' reporting. Amongst the output measures on which DNOs are required to report are the number and duration of interruptions to supply per year.

1.2 Ofgem introduced standard definitions and guidance and minimum levels of accuracy that DNOs must meet for reporting quality of supply data. These are set out in Ofgem's Regulatory Instructions and Guidance (rigs)[1].

Audit of DNOs' Measurements Systems and Reporting

1.3 In 2001 Ofgem commissioned BPI and MM (the Consortium) to develop a framework for the annual auditing of incident reporting systems used by DNOs under the Information and Incentives Project (IIP). The initial contract ran for three years during which time DNOs undertook a significant amount of development work on their measurement systems. Development of the incident reporting process has taken place through a collaborative approach between Ofgem and the DNOs with the Consortium providing technical and analytical support on Ofgem's behalf as required. Under the initial contract an interim review was carried out in 2001 and IIP audits of measurement systems followed in 2002 and 2003. The contracts to carry out the IIP/IIS audits for the reporting years 2003/04, 2004/05, 2005/06, 2006/07 and 2007/08 were also awarded to the Consortium. Full details of all audits carried out to date are available on the Ofgem website[2].

1.4 On 1 April 2005 Ofgem introduced a revised incentive scheme which provides financial incentives to DNOs with respect to the average quality of service they provide in three main areas:

- The number of interruptions to supply;
- The duration of interruptions to supply; and
- The quality of telephone response.

1.5 DNOs may be rewarded or penalised by up to three per cent of revenue, depending on performance relative to their interruptions targets in each year of the scheme. The incentive scheme includes a mechanism for adjusting DNOs' reported performance for the number and duration of interruptions for inaccuracy to help ensure that DNOs are not unfairly rewarded or penalised due to measurement issues.

[1] Quality of Service Regulatory Instructions and Guidance version 5, Ofgem, March 2005.

[2] Separate final reports by Mott MacDonald/British Power International - Information and Incentives Project, Audit of Incident Reporting for the years 2001/02, 2002/03, 2003/04 2004/05 and 2005/06.

Aims of the Audit

1.6 The aims of the audit of DNOs' interruptions reporting for the reporting year 01 April 2008 to 31 March 2009 are to:

- Identify any significant changes in a DNO's measurement systems and their impact (if any) on the accuracy of reported information;
- Identify whether there are any significant weaknesses in the systems that DNOs have in place to report incidents, CI and CML and to provide recommendations for improvement(s) in these systems;
- Determine whether the DNOs are complying with the requirements of rigs version 5 for reporting;
- Provide an indication of the time taken to audit unannounced incidents;
- Explore the audit trail for a sample of incidents that DNOs had deemed to be non-reportable;
- Determine the overall accuracy of reported information;
- Sample DNOs' accuracy of submitting callers' details to Ofgem's telephony consultants for sampling in connection with the quality and speed of telephone response incentive scheme; and
- Provide an opinion on the appropriate numerical adjustments to DNOs' reported information so that they are not unfairly rewarded or penalised in the incentive scheme due to any problem in their measurement systems.

The Audit Approach

1.7 Following discussions with Ofgem and the DNOs the changes in approach to the audits and calculation of accuracy introduced for the audit of reporting years 2005/06 to 2007/08 have been maintained. These include the use of:

- Stage 2 audit of the subset of selected incidents to a higher accuracy requirement with the Stage 3 audit of the full incident sample only being required if the Stage 2 accuracy is not met;
- A consolidated questionnaire, issues list, and sign-off document;
- A reduction in the number of people working as visiting auditors over that of previous reporting years;
- One of the principal two-person visiting audit team being from Ofgem; and
- A streamlined audit reporting process with sign-off of key documents at a more formal meeting at the conclusion of each visit.

Report Structure

The main body of this report sets out the audit findings and accuracy of interruptions reporting for the reporting year 2008/09. The report is structured as follows:

- Section 2 of this report gives a description of the four stage audit process for 2008/09;

- Section 3 sets out the key results of the audit together with any differences in interpretation of the rigs found across DNOs;
- Section 4 gives details of key lessons learned as a result of this year's audit and comments on areas of best practice;
- Section 5 summarises the issues that have arisen during reporting years 2005/06 to 2008/09, where guidance has been given for specific situations and / or where amendments to rigs version 5 are suggested; and
- Appendix A gives a schedule of key information from the automated incident-auditing workbooks, individual audit reports for each licensed area are set out in Appendices B to O.

2 Audit Processes

Overview

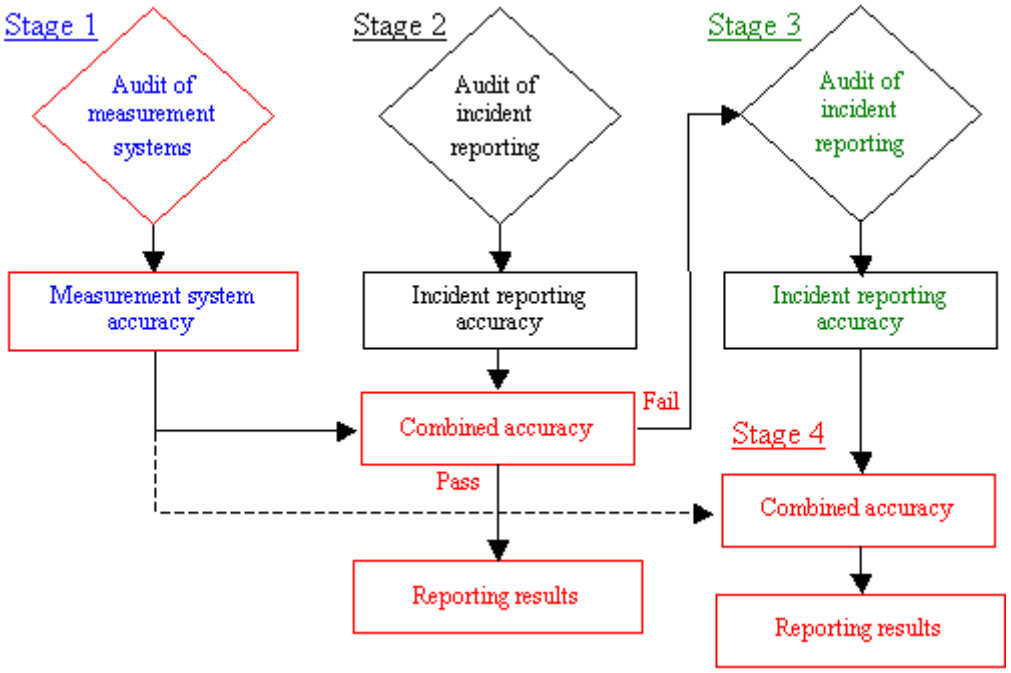
2.1 As in previous years the central component of the audit process was an audit visit to each licensed area. Two or three visiting auditors carried out the audit visits, one from the Consortium and the others from Ofgem, working together with the DNO audit team. The aim was to foster a collaborative approach to achieve agreement during the visit wherever possible.

2.2 For the audit of reporting year 2008/09 the visiting auditors again used Ofgem's modified automated incident-auditing workbook. This enabled the calculation and statistical work to be done in parallel with the collection of information on the audit visit. The visiting auditors were therefore again able to give an immediate and robust interim estimate of the results during the audit visit. In addition, a streamlined DNO audit report template was again used to enable agreement of report content without the subsequent need for circulation and comment on draft reports. A more formal meeting at the conclusion of the audit visit enabled sign-off of the interim results and report subject to a Quality Assurance (QA) check of the results.

Audit Process

2.3 Figure 1 shows the four-stage audit process on which this report is based.

Figure 1 Audit Process Flow Chart



2.4 The approach to Stages 1, 2 and 3 was to circulate an audit questionnaire and the Stage 2 audit sample of incidents (except the ten unannounced 11kV and the ten unannounced LV incidents) in advance of carrying out the audit visit to each DNO.

2.5 The pilot audit visit to WPD was again carried out completely unannounced.

2.6 Updated accuracies of each DNO's measurement systems and the accuracies of each DNO's reporting using these systems were then calculated based upon the information gained during the audit visit. The accuracies of Stages 1 and 2 were then combined automatically in Ofgem's incident-auditing workbook to give the reduced sample Stage 4 Overall reporting accuracy for each licensed area. This process built directly upon the lessons learned from previous audits.

2.7 All DNOs passed the Stage 2 level of accuracy and Stage 3 was therefore not required.

Audit Process Stage 1

2.8 This relates to the calculation of HV and LV MPAN accuracy. The calculation of MPAN accuracy is the same as for the audit of reporting years 2005/06 to 2007/08, which reflects the number of primary traded MPANs active in a DNO's connectivity model relative to its total number of customers from MPRS. Taking MPAN count in MPRS as 100% accurate, the MPAN accuracy for HV and LV is then taken as the number of MPANs in the connectivity model capable of attracting CI and CML at the relevant voltage level expressed as a percentage of MPANs in MPRS. It is calculated as follows:

- HV/LV MPAN Accuracy = (Total number of primary traded MPANs assigned to true feeders at HV and above or LV as appropriate) / (Total number of primary traded MPANs).

2.9 MPAN accuracy can be greater than 100% if there is a delay in removing disconnected MPANs in the connectivity model relative to MPRS.

2.10 At LV, MPANs attached to true feeders (as opposed to dummy feeders or other temporary holding arrangements) in the DNO's connectivity model will be registered as losing supply when the feeder or substation to which they are attached becomes disconnected from the distribution system. These are therefore capable of attracting CI and CML even though they may not be correctly connected within the DNO's connectivity model. By comparison, LV MPANs not connected to true feeders (e.g. connected to dummy feeders or postcodes that never lose supply) are not capable of attracting CI and CML. At the higher voltage levels, MPANs attached to dummy LV feeders will lose supply when the substation becomes disconnected and, in this case, would attract CI and CML.

2.11 MPANs attached to true feeders may not be attached to the correct feeder or substation for a variety of reasons and this would give rise to incorrect reporting of CI and CML for a proportion of individual incidents. However, audit work in previous years supports the view that the number of MPANs connected to incorrect feeders or substations is low, randomly distributed and continues to diminish in all licensed areas.

2.12 An audit questionnaire was prepared to enable visiting auditors to check on the on-going accuracy of the connectivity model in each licensed area and to ensure that DNOs are retaining the focus on its continual improvement. The questionnaire circulated to DNOs prior to the audit visits examined the following:

- Any changes that DNOs have made to the way that they interpret the definition and guidance contained in the rigs version 5 since their introduction on 01 April, 2005;

- Any changes that DNOs have made to the way in which they identify primary traded MPANs;
- Outputs from quality control and monitoring of primary traded MPAN systems and connectivity models;
- Any future changes that DNOs have planned for their measurement systems; and
- Follow-up to any recommendations that had been made as a result of the audit for the 2007/08 reporting year.

2.13 In their answers to the questionnaire the DNOs were asked to identify the effects of their methodologies on connectivity model accuracy together with supporting calculations.

2.14 In order to determine the finalised Stage 1 MPAN accuracy for the overall sample used in the combined accuracy calculation, Ofgem's automated incident-auditing workbook calculated a weighted average of the higher voltage MPAN accuracy and LV MPAN accuracy based on the contribution to overall annual higher voltage and LV CI.

Audit Process Stages 2 and 3

2.15 Stage 2 of the 2008/09 audit consisted of the audit of incidents and the combination of results into the incident reporting accuracies by means of Ofgem's automated incident-auditing workbook.

2.16 Ofgem selected a sample of 150 incidents from each licensed area, split between HV and above and LV according to the respective contribution to CI and CML (with a minimum of 50 LV incidents). The samples were split into two parts, Stage 2 and Stage 3 such that:

- The Stage 2 Overall samples consisted of 50 HV and above incidents and 30 LV incidents (i.e. a total of 80 incidents). The 30 LV incidents also made up the Stage 2 LV samples; and
- The Stage 3 Overall samples consisted of all 150 HV and above and LV incidents. All the LV incidents (minimum 50) made up the Stage 3 LV samples.

2.17 Following the recommendation from the previous two years' audits, Ofgem did not circulate the Stage 3 audit samples to the DNOs ahead of the audit visits as this saved abortive preparation time for the DNOs.

2.18 Spare incidents were included to substitute for incidents that might prove impossible to audit.

2.19 The ten unannounced 11kV incidents and the ten unannounced LV incidents were audited directly from the DNOs' measurement systems without the DNOs having had to pre-prepare documented audit trail information.

2.20 The audit team audited each of the incidents in the Stage 2 sample initially and then used the incident-auditing workbook to calculate the Stage 2 accuracy figures. All the calculated Stage 2 Overall and Stage 2 LV accuracies met the requisite threshold levels and the audit of incidents was concluded at this Stage.

2.21 The audit process took the following factors into account:

- The number of customers affected by each restoration stage of each incident as reported to Ofgem;
- How this number related to both the audit trail (information generated at the time of the incident recorded in field records, switching logs or other measurement systems) and the number of customers shown on the DNO's connectivity model;
- The reported duration of each stage of each incident and how this compared with the audit trail for the incident that occurred (e.g. the time of the first customer call registered in the call logs and restoration times recorded in field records, switching logs or other measurement systems);
- Whether each incident had been captured by the measurement systems by comparing customer and incident reports and whether logged network events related to relevant incident reports; and
- Comparing the location of each incident within the distribution networks with the representation in the measurement systems.

2.22 The audit team determined an "audited" value for the number and duration of interruptions for each restoration stage for each incident. This value was then compared against the original reported results to measure the level of accuracy/inaccuracy. The audit team recorded the source of any inaccuracies for later analysis.

2.23 Throughout the process the visiting auditors took care to ensure that any lack of information did not lead to bias in the audit results.

2.24 The Consortium auditor worked on the higher voltage incident sample and the Ofgem auditor on the LV sample. Whilst the visiting auditors worked in parallel this did not prevent discussions between them where questions of understanding or interpretation arose.

2.25 The audit of incidents examined the consistency and accuracy of the following processes:

- Data capture by telephone operators;
- Network control room data capture;
- Capture of field data within DNOs' measurement systems; and
- Data links to the fault reporting system (e.g. PC-NaFIRS).

2.26 Each sample incident was checked for consistency and accuracy of the following information from relevant DNO measurement systems:

- Identification of restoration stages within the incident;
- Time stamping of the start and finish of each restoration stage within the incident;
- Location of the incident; and
- Identification of the number of customers affected by each restoration stage within the incident.

2.27 Information was extracted through live online access to current DNO systems or through examination and verification of time stamped system printouts taken at the time of the incident together with time stamped reports from field staff.

2.28 In the event of particular incidents being too complex or impossible to audit, spare incidents were substituted in a pre-determined sequence provided by Ofgem.

2.29 DNOs also had the opportunity to record their views in the DNO figure columns and the comments columns of the incident-auditing workbook but no DNO opted to use this facility.

Audit Process Stage 4

2.30 The Stage 4 Overall and LV reporting accuracies were calculated in the automated incident-auditing workbook. Relevant details of the calculation procedure and output from the workbook are set out in Appendix A.

2.31 Each audit visit concluded with a review session where the main points arising from the visit were discussed with the DNO team and any learning points relevant to the conduct of future audit visits were shared. Both the visiting auditors and the DNO audit team retained the following audit visit documentation:

- A date stamped and signed hard copy of the consolidated questionnaire, issues list and sign-off document;
- A date stamped and signed hard copy of the audit visit report and interim results;
- An electronic copy of the completed audit questionnaire; and
- An electronic copy of the completed incident-auditing workbook that would be subject to a QA check before the interim results could be confirmed.

3 Audit Results

Overview

3.1 The QoS Incentive Scheme audit visits to DNOs for reporting year 2008/09 took place between April and June 2009. A summary of the visit programme is set out in Table 1.

Table 1 Audit Visit Programme

Licensed Area	Dates	Location
WPD – Sth Wales and Sth West	07 and 08 April	Cardiff
CN – East and West	06 and 07 May	Castle Donington
EDFE – EPN, LPN and SPN	11 to 13 May	Ipswich
SSE – SEPD and SHEPD	18 and 19 May	Portsmouth
CE – NEDL and YEDL	26 and 27 May	Leeds
ENW (UUES)	03 June	Manchester
SPD and SPM	04 and 05 June	Prenton

3.2 The visiting auditors were well supported by the DNO audit teams and the pre-visit preparation by each DNO team was of a high standard. It was the visiting auditors' responsibility to retain the master consolidated incident-auditing workbook at the end of each day's work.

MPAN Accuracy

Summary of Findings

3.3 Table 2 summarises the results of the incident-auditing workbook calculation used to determine the Overall MPAN accuracy from the higher voltage and LV MPAN accuracy results. This is the average of the higher voltage MPAN accuracy and LV MPAN accuracy weighted by their annual respective contributions to total CI.

Table 2 Higher voltage, LV and Overall MPAN Accuracies

Licensed Area	Higher voltage MPAN Accuracy	LV MPAN Accuracy	Higher voltage Weighting	LV Weighting	Overall MPAN Accuracy
CE – NEDL	99.84%	99.84%	76.85%	23.15%	99.84%
CE – YEDL	99.74%	99.74%	80.94%	19.06%	99.74%
CN – East	99.91%	99.91%	88.44%	11.56%	99.91%
CN – West	99.50%	99.51%	87.87%	12.13%	99.50%
EDFE – EPN	99.66%	99.66%	88.42%	11.58%	99.66%
EDFE – LPN	99.58%	99.58%	57.17%	42.83%	99.58%
EDFE – SPN	99.71%	99.71%	92.13%	7.87%	99.71%
ENW (UUES)	99.41%	99.46%	80.94%	19.06%	99.42%
SPD	98.75%	98.76%	85.38%	14.62%	98.75%
SPM	99.39%	99.41%	87.10%	12.90%	99.40%
SSE – SEPD	100.00%	99.98%	80.52%	19.48%	100.00%
SSE – SHEPD	99.99%	99.99%	90.38%	9.62%	99.99%
WPD – Sth Wales	99.99%	100.00%	89.70%	10.30%	99.99%
WPD – Sth West	99.99%	99.99%	80.80%	19.20%	99.99%

DNO Changes since the audit of reporting year 2008/09

3.4 The key points on DNO's measurement systems and reporting procedure changes since the audit of reporting year 2008/09 are set out in Table 3. Full details for each licensed area are set out in Appendices B to O of this report.

Table 3 Changes to DNO Systems and Procedures

Change Area	Comment
Interpretation of rigs version 5	Rigs version 5 came into effect on 01 April 2005 and no DNO has changed its interpretation of them since that time.
MPAN accuracy	DNOs generally have not made changes to the processes they use for new connections and disconnections of MPANs. Links between MPRS and connectivity models have not generally changed. All DNOs consider they have reached the stage at which the accuracy of MPAN count is very near to 100%, and in view of the daily processing of MPANs connected and disconnected they believe it is not practicable to achieve further improvements. DNOs generally have well-developed data quality processes and they have used these throughout the reporting year to maintain the high standards of accuracy achieved, with on-going data cleansing taking place on a routine basis.
Connectivity model	The calculation required to complete the "Connectivity Model" accuracy is the same as that used during the audits of previous reporting years' QoS Incentive Scheme information and therefore provides for consistency across successive audit visits. Most DNOs have not made significant changes to their connectivity models but in many cases have made incremental improvements to accuracy by moving MPANs to the correct feeder where new information is collected from customer no-supply calls, fault restoration work, planned interruptions and construction and maintenance work. The visiting auditors are pleased to note that DNOs have processes in place to update and refine connectivity models and that these processes generally appear to be working well. SP has begun to introduce a replacement GIS system that will have an LV feeder tracing system similar to that already available in SPD's higher voltage measurement system.
Processes	Several DNOs included new people on their IIS audit this year, thus increasing the knowledge base within their companies.
Potential sources of error remaining	Most DNOs still consider that the remaining sources of error in measurement systems are minor and from known sources, such as the difficulty of attaching MPANs to the correct feeder in urban areas and near feeder boundaries, and a combination of inaccurate supplier information, unrecorded disconnected MPANs and address errors. DNOs adopt various day-to-day incremental improvement strategies to refine accuracy and some consider that they have reached the trade-off balance between accuracy and cost in measurement systems.
Future changes planned	EDFE (EPN and LPN) is working towards the auto-population of its incident reports. SP is working towards the replacement of its current ICOND and Troublecall systems to provide for improved interfaces, one attribute of which will be to auto-populate its incident reports. WPD is planning to migrate to ENMAC version 4 during the reporting year 2009/10, cutting over from version 3 using a fully auditable approach

Accuracy of Incident Reporting

Summary of Findings

3.5 Table 4 summarises the findings across the licensed areas on Overall and LV reporting accuracies.

3.6 All fourteen licensed areas passed the levels of accuracy required of the reduced sample of incidents and the results in Table 4 are therefore the combination of Stages 1 and 2 of the audit process.

Table 4 Incident Reporting Accuracies

Licensed Area	Overall CI	Overall CML	LV CI	LV CML
CE – NEDL	99.82%	99.94%	98.94%	97.29%
CE – YEDL	99.67%	99.38%	97.55%	97.51%
CN – East	99.92%	99.95%	99.97%	99.73%
CN – West	99.50%	99.52%	99.23%	99.97%
EDFE – EPN	99.05%	98.70%	97.58%	97.70%
EDFE – LPN	99.54%	99.27%	97.61%	94.76%
EDFE – SPN	99.72%	99.74%	99.68%	95.79%
ENW (UUES)	99.46%	99.15%	99.46%	98.08%
SPD	98.73%	98.81%	98.35%	96.59%
SPM	99.40%	99.39%	98.12%	99.26%
SSE – SEPD	99.98%	99.93%	98.97%	98.90%
SSE – SHEPD	99.86%	99.80%	98.60%	99.62%
WPD – Sth Wales	99.99%	99.96%	99.80%	99.58%
WPD – Sth West	99.99%	99.95%	99.46%	99.65%

3.7 It is the Consortium's opinion that all reporting under the QoS Incentive Scheme for the reporting year 2008/09 meets the required level of accuracy at either Stage 2 or Stage 3 of the audit process.

Sources of Reporting Variances

3.8 Details of the audit of incident reporting for each licensed area are set out in the relevant Appendix to this report. Comments on the common issues are set out in Table 5.

Table 5 Sources of Reporting Variances

Source	Comment
Manual transcription errors	In general DNOs that had fewer measurement system stages requiring manual intervention to transfer information to fault reporting systems continue to experience fewer transcription errors. In licensed areas where progress on the reduction of transcription errors had been made, visiting auditors noted that this was achieved by continuing to put on-going effort into: • Staff understanding the importance of capturing information accurately to meet regulatory reporting obligations; • Staff training in the use and capability of measurement systems and the overall fault reporting process; and • Robust internal auditing of incident reporting to reduce problems and to identify and introduce changes to minimise common types of error.
Network reconfiguration	Network reconfiguration can introduce variances when comparing reported numbers of customers interrupted with current system values. These are normally due to a new section of network being added since the date of the incident or abnormal running conditions at the time of the incident. Certain DNOs have systems more capable of producing evidence of the running arrangement at the time of the incident than others. However, in most cases it was possible to get back to the network configuration at the time of the incident. Visiting auditors again noted a continuing improvement in the audit trails associated with this aspect of the DNOs' operations. The visiting auditors were pleased to note the increasing number of helpful notes embedded within DNOs' measurement systems that indicated where a circuit was running abnormal at the time of the incident.
Customer number changes since the incident	Changes in customer numbers since the incident can be caused by: • Network reconfiguration; • MPAN commissioning/decommissioning; and • Data cleansing. Differences were again noted between the DNOs on the ability to track MPAN changes and the associated network connectivities. DNOs that can accurately track MPANs are better able to explain variances. DNOs generally have no need to determine the former connectivity of decommissioned MPANs and most have no measurement systems in place to do so. Consequently, there were again fewer corresponding variances recorded in the incident-auditing workbooks of those DNOs that were able to provide robust auditable evidence of the number of customers affected at the time of an incident.
Quality of incident reports	Generally, the visiting auditors noted that there is a continuing improvement in the quality of information captured in DNOs' measurement systems but the frequency of transcription errors during the transfer of source data into fault reports is still an area of weakness for some. As reported in previous years, the retention of more information to assist in establishing a clear audit trail (e.g. storing information about abnormal running conditions at the time of the incident) was particularly useful in several instances.

Source	Comment
Incident start time	Several instances were found where DNOs are using the time of reports of damaged LV cables or the time of an HV neutral earth alarm as the incident start time, when no report has been received that one or more customers have lost supply. The Consortium confirms its previous recommendation that a DNO should not consider an interruption to have started until it receives a report that supplies have been lost. Similarly, DNOs should not wait until the time of the second 'no-supply' call before starting the interruption.

Non-reported 'Incidents'

Summary of Findings

3.9 Generally, the visiting auditors found that DNOs' records supported the fact that the non-reported 'incidents' were correctly classified.

3.10 In the case of CN East, one of the twenty non-reported LV 'incidents' was incorrectly classified and should have been reported as an incident.

3.11 In the case of EDFE - EPN, one of the one hundred and fifty non-reported LV 'incidents' was incorrectly classified and should have been reported as an incident.

3.12 In the case of EDFE - SPN, one of the one hundred and fifty non-reported LV 'incidents' was incorrectly classified and should have been reported as an incident.

Quality of Telephone Response

Summary of Findings

3.13 Generally, the visiting auditors found that DNOs' records supported the information that had been submitted to Ofgem's consultants for follow-up in relation to the quality of telephone response survey.

3.14 In the case of one of the callers associated with an HV incident at CE-YEDL, the DNO was unable to forward the details to Ofgem's consultants due to the caller withholding their name.

3.15 In the case of one of the callers associated with an HV incident at CN East, the DNO was unable to forward the details to Ofgem's consultants due to a transcription error associated with a shift change.

3.16 In the case of one of the callers associated with an HV incident at EDFE – LPN, the telephone number was incorrectly entered into the DNO's measurement systems and could not be used by Ofgem's consultants.

3.17 In the case of one of the callers associated with an LV incident and two callers associated with an HV incident at SEPD, the telephone numbers were not forwarded to Ofgem's consultants due to data capture errors within the DNO's measurement systems.

3.18 In the case of one of the callers associated with an LV incident and two callers associated with two separate HV incidents at SHEPD, the telephone numbers were not forwarded to Ofgem's consultants due to data capture errors within the DNO's measurement systems.

3.19 Where details of callers had not been submitted, DNOs' records showed that this was due to one of the following reasons:

a customer not wishing to take part in the survey;

callers with ex-directory telephone numbers;

details of the telephone number being unconfirmed; or

situations where a third party had called on behalf of someone and did not wish to take part in the survey.

3.20 The approach adopted for reporting year 2007/08 was again used this year and was unanimously confirmed as being a better approach to that used previously.

'Clock-stopping'

Summary of Findings

3.21 The use of clock-stopping was found to vary between DNOs. Some DNOs use it infrequently and some use it a great deal, particularly at LV.

3.22 In all cases, DNOs were able to justify the use of clock-stopping as provided for in the rigs

3.23 However, the visiting auditors found the words "agreed with the customer" or "the customer agreed" … (to stay off supply) within trouble-call logs, wording which does not indicate rig compliance, even if the underlying reason for the use of clock-stopping is correct.

3.24 The visiting auditors understand the reasons for the use of these words as they form a natural 'human' conclusion to a telephone conversation between a customer and the DNO but they can easily be misconstrued in an audit setting and DNOs are advised to stop their use.

4 Key Lessons Learnt

Comments on DNO Practice

4.1 Table 6 shows a summary of overall comments from the visiting auditors on DNO audit practice. Detailed comments on each Licensed Area are set out in the relevant Appendix to this report.

Table 6 Summary of Comments on DNO Practice

Subject	Comments
Pre-visit preparation	The visiting auditors again wish to acknowledge the high levels of pre-visit preparation work carried out by DNOs and for their collaborative approach to the audit process. It is essential for the DNO to ensure adequate audit trails are available with supporting documentation to hand from local office files and field logs where appropriate.
Visit logistics	All audit visits progressed very smoothly as DNOs generally provided a small number of experienced and well prepared experts with system operation skills to enable incidents to be re-created on the DNO's measurement system, explain the audit trail, and respond promptly to the visiting auditors' questions. The facilities provided by the DNOs for conduct of future audits should continue to meet the following requirements: • Quiet areas away from the general office environment for the higher voltage and LV audits with space to spread out drawings and other paperwork and close access to power points for laptop PCs; • Facilities to access DNO measurement systems; • Experienced operators fully briefed by managers with overall responsibility for QoS Incentive Scheme and empowered to make decisions on variations on behalf of DNOs; and • Appropriate facilities for a formal sign-off meeting.
Audit trail	Best practice audit trails regarding changes in customer numbers between the date of the incident and the date of the audit visit were again found to include: • Electronic records of those customers affected at the time of the incident as compared with current system values; • Time-stamped measurement system documentation and/or "frozen" information held on a computer database showing the number of customers affected at the time of the incident; and • Scripts showing MPAN creation and deletion dates; both post- and pre-incident.

Points for Ofgem

4.2 Table 7 summarises the points arising from the audit visits for consideration by Ofgem.

Table 7 Summary of Points for Ofgem's Consideration

Subject	Point
Sampling regime	The inclusion in the process of a number of unannounced incidents at both the LV and 11kV levels prior to the audit visit again provided an added degree of audit rigour. The number of unannounced incidents could usefully be increased in future audit visits, subject to the time taken to extract the audit trail information from those licensed areas with partially manual systems. Consider the categories by which DNOs record non-reportable "incidents" with a view to introducing a more uniform system to give the visiting auditors more confidence that this aspect of the DNOs' reporting is being managed.
Stage 2 and Stage 3 samples	The current process whereby Ofgem only issues the Stage 2 audit sample prior to the audit visit saved the DNOs a considerable amount of abortive pre-visit preparation work and should be repeated in future audits. Similarly, Ofgem may wish to consider not issuing the spares before the audit visit.
Non-reported incidents	The inclusion of a sample of non-reported incidents was found to be a valuable addition to the audit process and it is strongly recommended that this is continued in future audits.
Quality of telephone response	Continue to include a cross-check between DNO records and the returns submitted to Ofgem's quality of telephone response consultants.
'Clock-stopping'	Continue to include a sample of incidents where clock-stopping has been used. Consider publicising the number of incidents where clock-stopping has been used per DNO per rig number. The time needed to correctly identify and to subsequently audit most clock-stopping incidents does not generally appear to be cost effective when viewed from the small impact its removal would have on a DNO's reported performance. Ofgem should consider reviewing the provision of clock-stopping with a view to restricting its use to all but the most onerous of circumstances such as that provided for under rig 2.64
Regulatory Instructions and Guidance version 5	DPCR5 is due to come into effective before the annual audit visits take place for reporting year 2009/10. In association with DPCR5, it is recommended that Ofgem considers the number of areas where clarification has been sought concerning rigs version 5 and works towards a rigs version 6, including a user-friendly index. Section 5 of this report provides a summary of the issues that have arisen during the annual IIS audits of the four reporting years 2005/06 to 2008/09.
Visit sign-off	The adoption of the visit sign-off meeting with the streamlined pro-forma audit report and the inclusion of an Ofgem team member as part of the audit team were again found to be beneficial. This adds weight to the discussions and allows Ofgem to directly witness the discussion of the findings of the audit visits.

Issues Arising

4.3 Table 8 lists the key audit issues and their resolution arising from this year's audit visits.

Table 8 Issues arising during the course of this year's audit visits

N°	Issue	Resolution
1	A fire occurred at a 33/11kV Primary Substation and circuits tripped correctly. However, in order to tackle the fire, the emergency services requested the DNO concerned to shutdown other parts of its network. The question therefore arose as to how to treat Clock Stopping for an incident stage for an entire duration as the result of the emergency services request.	The circumstances of this incident are such that the initial two interruption stages where circuits tripped as a result of the fire are reportable. The instruction from the emergency services resulting in the further interruption stages make these non-reportable due to the correct application of clock-stopping for their entire duration as all operations were via SCADA and there was no delay in the subsequent restoration.
2	How to record a 33kV and above distributed generator (eg wind farm) for a pre-arranged (PA) incident as no facility exists within ENMAC to create a PA incident against it.	This should be referred to the manufacturers of ENMAC as the situation does not appear to be rig-compliant.
3	The treatment of the failure of the National Grid infeed during the low-frequency incident that occurred on 27 May 2008 was discussed	Ofgem's email of 17 April 2009 details the reporting procedure for this incident. It is acknowledged that some DNO's are aggrieved at having to suffer any CML penalty as a result of this incident.
	It is questioned if incidents of this type were considered during the formulation of the IIP / IIS rigs versions 1 to 5. It is suggested that Ofgem may wish to include such consideration in future consultations on the rigs and any proposed changes thereto	
4	The inclusion of the expression "other abnormality" in rig 2.42 - Incident Start Time is still causing engineering personnel to use their skill and judgement to determine some incident start times.	The visiting auditors have issued verbal guidance regarding incident start times as being the time at which: • the first no-supply call is received; • a telemetry-equipped circuit breaker trips; • a deliberate disconnection is made; or • a report is received from site of a system abnormality that "prevents a circuit or item of equipment from carrying normal load current or being able to withstand through fault current for three minutes or longer" (as per the wording of rig 2.42). It is suggested that the rigs be revised to reflect this verbal guidance
5	Rig 2.43 'Report Received Time' plays no part in IIS reporting and its wording could be adding to the inference that engineering judgement is needed to determine the start of an incident	It is suggested that rig 2.43 is removed in any subsequent issue of the IIS rigs

5 Issues that have arisen during Reporting Years 2005/06 to 2008/09

General

5.1 Rigs version 5 came into effect at the start of DPCR4 on 01 April 2005.

5.2 Whilst no DNO has changed its interpretation of the rigs since that time, issues have arisen during the annual IIS audits for reporting years 2005/06 to 2008/09 where clarification or side guidance has been sought and it is recommended that these issues be clarified and, where appropriate, be contained in rigs version 6 in readiness for the start of DPCR5.

5.3 For ease of reference, issues that have arisen during the annual IIS audits of the four reporting years 2005/06 to 2008/09 are summarised in this Section of the report.

5.4 Table 9 shows the issues concerning the audit process and questions regarding the reporting of incidents. Where possible, the issues have been grouped. Ofgem may wish to consider including the examples as an Appendix to the rigs.

5.5 Table 10 lists issues concerning rigs version 5 where regulatory instruction or guidance may be required.

Table 9 Issues concerning the Audit Process and Reporting

Issue	Resolution
Pre-arranged Interruptions	
DNOs have queried the type of audit trail required for prearranged interruptions to supply.	To provide a robust audit trail, the following information needs to be available: • Evidence that the prearranged interruption happened; • Evidence of the notified interruption times; • Evidence that the customers were given the minimum 2 days notification of the pre-arranged interruption; • The areas affected, • The customers affected; and • Accurate and auditable evidence of actual start and completion of each stage of the interruption.
During the audit of LV pre-arranged interruptions the issue has arisen of customers not originally referenced to the feeder and therefore not notified.	Where customers are found to be interrupted as part of a pre-arranged incident but have not been notified then these additional customers should be included as an additional interruption stage in the incident-auditing workbook for the pre-arranged interruption.
A DNO has asked how to record a 33kV and above distributed generator (eg wind farm) for a pre-arranged (PA) incident as no facility exists within ENMAC to create a PA incident against it.	This situation does not appear to be rig-compliant and DNOs may wish to refer the matter to the manufacturers of ENMAC.

Issue	Resolution
Incidents at the Lower Voltage Level	
DNOs have asked when an LV control log would be accepted as evidence for switching times and customer data.	An LV control log is acceptable in the same way as an HV control log for those DNOs that operate a comparable system of 'control' on their LV networks, accurately recording the duration of interruptions and the number of customers affected at the time of the incident.
A question arose where an LV backfeed was used to supply customers during an HV interruption.	This was discussed at a DNO workshop when it was agreed that an LV backfeed which is a permanent feature of a DNO's distribution system should not be treated as a temporary restoration. The '18 hour' rule therefore does not apply.
Some of the non-reported incidents have concerned open-circuit LV cables that the DNOs' operatives have found during routine maintenance activities and no customers supplies were affected (e.g. one side of a normally-open LV link box being 'dead').	The rigs call for this type of situation to be reported as an incident with no customers affected – see rig 2.15, second bullet point. DNOs generally consider this to be an onerous task, adding considerably to the reporting workload for no added benefit in reporting their performance.
The use of Site Estimates for determining the Number of Customers Interrupted	
DNOs have raised a concern about 'site estimates' not always being accepted as evidence for the number of customers interrupted.	Ofgem explained that this evidence was usually acceptable, but where, during the audit it became clear that the estimates were obviously incorrect then the results using the measurement systems in place should override the site estimates for the purposes of the audit. Ofgem stated clearly the position on how the audit would treat such incidents. It was agreed that this issue was not likely to be material. It was suggested that DNOs might find it of benefit to undertake post incident reviews of the accuracy of site estimates to improve accuracy in this area.
Variances in Customer Numbers at the Low Voltage Level	
DNOs have questioned the process of having to explain customer number changes between the time of the incident and that of the audit as it is sometimes difficult and that there has been some discussion of having 'tolerance' levels, which would account for an amount of customer 'churn'.	Ofgem has explained the rationale and rules relating to reporting and evidencing variances in customer numbers between the date of the incident and the date of the audit visit. It was agreed at the 2006 DNO workshop that there was sufficient time within the audit to allow a level of 'drilling-down' if a DNO wished to do so to prove the variation.
DNOs have asked Ofgem to consider accepting as auditable evidence time stamped "predicted/feeder numbers" of the number of customers on an LV feeder at the time of the incident.	It was acknowledged that this was significantly more difficult to achieve than at the higher voltage levels and the visiting auditors undertook to examine this for consistency across all DNOs during the audit of the reporting year 2007/08. The result was that it is not yet possible to conclude that there is such consistency across all DNOs and the existing process must therefore continue.
PC-NaFIRS and LV Re-interruptions	
During the auditing of an LV incident it became apparent that PC-NaFIRS does not accept a re-interruption Stage in accordance with the requirements of rigs v5 paragraph 2.47.	This situation does not appear to be rig-compliant. The issue was that the entire incident had not been completed although the customers on the particular stage had been restored for over 3 hours. Even if the entire incident had been completed the re-interruption period is for either 3 or 18 hours after all customers have been restored (see rigs v5 paragraph 2.51). The DNO concerned undertook to contact Langhorn Computers to arrange a modification to Pc-NaFIRs.

Issue	Resolution
Customers Interrupted at the Higher Voltage Levels	
During the audit of reporting year 2005/06 DNOs were concerned that the visiting auditors did not accept minor variations in customer numbers on the audit of HV incidents even though the LV connectivity model accuracy had been accepted. DNOs requested clarification of the process for auditing HV incidents where it would be very time consuming to provide detailed evidence to support minor variances.	The visiting auditors reported that there was a constant trend of improvement in the DNOs' systems. Whilst the processes may differ, at the higher voltage levels, all DNOs can capture the numbers of customers affected at the time of the incident and the visiting auditors are satisfied that there is consistency across all DNOs. Since the IIS audits of reporting year 2006/07 the associated time-stamped information has generally removed the need for DNOs to prove any changes between the time of the incident and the time of the audit at the higher voltage levels.
Reporting of 'Unusual' Incidents	
DNOs have asked how to report the duration of an incident where a customer, such as a hospital, has an auto-start own generator and does not effectively experience an interruption in its energy usage.	The use of a Short Interruption is not appropriate. The Visiting Auditors suggest that the start of the interruption is from when the DNO's system fails and then use 'clock stopping' if the customer declines the DNO's offer to supply a generator else the end of the interruption is either when the DNO's supply is restored or when the DNO's generator is connected and begins supplying the customer. There must be a clear, time-stamped auditable trail within the DNO's measurement systems to show that a responsible and named person within the customer's organisation has declined the DNO's offer of providing a generator. Note: Wherever a DNO invokes 'clock-stopping' there must also be a clear, time-stamped auditable trail to show the time at which the customer has requested the clock should be re-started.
DNOs have asked how to report an incident where, at the request for an emergency shutdown of a customer for safety reasons (e.g. proximity working or danger) at least one other customer has to be shutdown without giving the statutory pre-arranged notice.	An incident report should be raised with a restoration stage showing the number and duration of interruptions to the 'other' customers. The interruption to the customer requesting the shutdown should be shown as a separate restoration stage with the clock stopped for the entirety of the incident.
Where an Auxiliary Supply Fail alarm has been received from an overhead tele-controlled switch without any corresponding SCADA switch trips, a DNO has taken the subsequent first customer no-supply call as the start time for an incident but this has been queried by some people within that DNO.	Generally speaking, the start of an incident should be taken as the time of a SCADA trip or the time the DNO receives the first "no-supply" call from a customer. In the case quoted here no supplies were lost at the time of the Auxiliary Supply Fail and the main conductors were still capable of carrying both load and fault current. Thus the DNO has reported the incident start time correctly as that of the first no-supply call for a subsequent interruption.
Where a customer's HV switchgear has been vandalised and the supply has been interrupted to that customer alone, should a DNO report this or not?	The visiting auditors suggest that this is a non-reportable incident because it only affects the HV customer as defined in the second bullet point of rig 2.32. Where a DNO has reported such an incident under its 'fail safe' processes as it is caused by vandalism, it will not be deemed to be mis-reported during an IIS audit.

Issue	Resolution
A fire occurred at a 33/11kV Primary Substation and circuits tripped correctly. However, in order to tackle the fire, the emergency services requested the DNO concerned to shutdown other parts of its network. The question therefore arose as to how to treat Clock Stopping for an incident stage for an entire duration as the result of the emergency services' request.	The circumstances of this incident are such that the initial two interruption stages where circuits tripped as a result of the fire are reportable. The instruction from the emergency services resulting in the further interruption stages make these non-reportable due to the correct application of clock-stopping for their entire duration as all operations were via SCADA and there was no delay in the subsequent restoration.
"Low Volts"	
"Low volts" is not "no volts". To ensure consistency of reporting, the visiting auditors have advised DNOs that "customers are on supply until a DNO knows otherwise". Thus a call of 'low volts', being a subjective assessment, should not be taken as an incident start time. However, two issues have arisen to modify the visiting auditors' previous advice as shown in the adjacent column.	Where a DNO's records show that a customer calls with the following additional information, the call effectively becomes a "no-supply" call: (a) - adding to the "low volts" statement that "the supply is unusable"; and (b) - reporting "reverse polarity" and being advised by the DNO to "switch everything off".
ENMAC and HV MPANS	
During the audit of incidents at the higher voltage levels it is noted that ENMAC does not recognise HV customers (MPANs).	This situation does not appear to be rig-compliant and DNOs may wish to refer the matter to the manufacturers of ENMAC. Meanwhile, DNOs have introduced manual processes that input a customer count of 1 for each HV customer supply that is interrupted. Audit results show that the associated manual intervention is not 100% reliable.
MPANS and the MPRS	
Some DNOs report a significant number of MPANs that energy suppliers have designated as 'de-energised with no meter', where in fact they could be designated as disconnected and excluded from the DNO's connectivity model.	The visiting auditors are concerned that this is a potential source of inaccuracy in reporting over which the DNOs have no direct control. However, the visiting auditors are aware that some DNOs are particularly pro-active in checking with Suppliers on a regular basis. Ofgem undertook to consider what further guidance could be issued to energy suppliers.
DNOs have reported that there is a time-lag between an MPAN reported as being energised by its field teams and the 'activated' notification being received from the Suppliers.	This issue was discussed at the 2007 DNO workshop but no resolution was reached.
DNOs also reported that there was a similar time delay between its field teams having reported a premise being demolished and the 'de-activated' notification being received from Suppliers.	This issue was discussed at the 2007 DNO workshop but no resolution was reached.
Consider issuing guidance to cover the situation where supplies are interrupted to a derelict property when the supply company has not requested the MPAN to become de-energised	This matter is still under consideration

Issue	Resolution
Suggestions concerning the Overall Report	
Ofgem is invited to consider including a table in the overall report showing absolute accuracy at the overall and LV level as part of the audit report.	This matter is still under consideration
Ofgem has also been invited to consider showing the audit results with and without eliminating any outliers either as part of the overall audit report or as part of a post audit review session.	This matter is still under consideration
Non- Reported 'Incidents'	
DNOs have expressed concern that it is not clear what the definition of 'non-reportable' incidents is.	No firm agreement was reached at the 2007 DNO workshop but the DNOs and Ofgem undertook to work together to agree definitions. To inform the debate, the experience of the visiting auditors suggests the categorisations shown in the following table could form the basis for discussion. Whilst it is not a precise science, the segregation into several categories provides for a more rounded sampling regime as compared to (say) 100 'LV' or 100 'miscellaneous'. From an auditor's viewpoint, the use of several categories gives a better feel for this aspect of a company's IIS measurement systems and helps to demonstrate that the DNO knows what it is accurately recording and thereby managing.

Category of non-reported 'incident'	Number in sample per DNO	Examples
Higher Voltages	20	Substation gates open; damages to HV and EHV cable sheaths where no supplies are interrupted; and incidents merged with another and therefore reported elsewhere
Low Voltage	20	Damages to LV cable sheaths where no supplies are interrupted; non-metered street lighting; and incidents merged with another and therefore reported elsewhere
Pre-arranged	20	Cancelled shut-downs
Single Premises	20	Damages to service cable sheaths where no supplies are interrupted; meter box doors open, damaged or missing; faults on customer's equipment; faults on customer's wiring; problems with cut-outs; problems with cut-out fuses; problems with meters; calls to a DNO concerning the energy supply; and incidents raised at LV and subsequently merged into an LV or HV incident and therefore reported elsewhere
Short Interruptions	20	Interruptions of less than 3 minutes in duration

Table 10 Issues concerning rigs version 5

Issue	Resolution
The requirement for additional incident reports for situations of 'extension of fault zone'.	A DNO volunteered to provide examples to aid the debate between Ofgem and the DNOs on adding clarity to the definition in rigs version 5 of 'extension of fault zone'.
During the audit visits it was observed that relevant sections of the rigs are difficult to find quickly.	Ofgem is to consider developing an index to the rigs.
A question has been raised regarding rig 2.7 – 'incidents on meters, time-switches and cut-outs' – regarding the specific situation where the failure of a cut-out affects other customers in addition to the one where the cut-out failure occurred.	As currently written the rigs do not differentiate between cut-out failures affecting a single customer or a multiplicity of customers. Irrespective of the number of customers affected, the failure of a cut-out is therefore not a reportable incident, even if the substation fuse is also involved. Ofgem is considering a review of this section of the rigs.
Ofgem has suggested that, for DPCR5, audit samples be split into specific categories; i.e. 132kV / EHV, HV and LV with an appropriate mix of underground / overhead. This would offset the impact of a good performance on a small number of 132 kV / EHV incidents masking a poorer performance at the other voltages.	The DNOs raised no objections to this suggestion.
The Consortium has suggested that the facility of 'Clock-stopping' should be 'scrapped' as it is subject to misinterpretation and caused inconsistency of treatment. The time needed to correctly identify and to subsequently audit most clock-stopping incidents does not generally appear to be cost effective when viewed from the small impact its removal would have on a DNO's reported performance. Ofgem should consider reviewing the provision of clock-stopping with a view to restricting its use to all but the most onerous of circumstances such as that provided for under rig 2.64	No agreement has been reached on this and Ofgem has undertaken to review this aspect of IIS reporting. Recent discussions suggest consensus is that Clock-stopping should at least continue in situations such as those envisaged in rig 2.64 (access prevented).
The treatment of the failure of the National Grid infeed during the low-frequency incident that occurred on 27 May 2008 was discussed during the 2009 annual IIS audits. It is questioned if incidents of this type were considered during the formulation of the IIP / IIS rigs versions 1 to 5. It is suggested that Ofgem may wish to include such consideration in future consultations on the rigs and any proposed changes thereto.	Ofgem's email of 17 April 2009 details the reporting procedure for this incident. It is acknowledged that some DNO's are aggrieved at having to suffer any CML penalty as a result of this incident.

Issue	Resolution
The inclusion of the expression "other abnormality" in rig 2.42 - Incident Start Time is still causing engineering personnel to use their skill and judgement to determine some incident start times.	The visiting auditors have issued verbal guidance regarding incident start times as being the time at which: • the first no-supply call is received; • a telemetry-equipped circuit breaker trips; • a deliberate disconnection is made; or • a report is received from site of a system abnormality that "prevents a circuit or item of equipment from carrying normal load current or being able to withstand through fault current for three minutes or longer" (as per the wording of rig 2.42). It is suggested that the rigs be revised to reflect this verbal guidance
Rig 2.43 'Report Received Time' plays no part in IIS reporting and its wording could be adding to the inference that engineering judgement is needed to determine the start of an incident It is suggested that rig 2.43 is removed in any subsequent issue of the IIS rigs	Ofgem has undertaken to consider this issue as part of its review of rigs v5.

Appendix A. Incident-Auditing Workbook Calculations

Once all the Stage 2 higher voltage and LV incidents had been audited the audit team used the results to estimate the accuracy / inaccuracy of the DNO's reported information. This involved four main steps (all the relevant calculations being embedded within the incident-auditing workbook supplied by Ofgem):

- Excluding any outlying incidents where the difference between audited and reported results is greater than the mean +/- 4 standard deviations;
- Expressing the total accuracy of the sample as a percentage of the total audited numbers;
- Combining the accuracy of reporting from Stage 2 of the audits with the accuracy of MPANs from Stage 1; and
- Summarising final accuracy/inaccuracy figures.

Stage 4 was re-run where either the Stage 3 overall sample or the Stage 3 LV sample was audited.

The following Table summarises the number of incidents substituted for each DNO, the voltages involved, and the key reasons for substitution:

Table 11 Number of Incidents Substituted

Licensed Area	Number of incidents substituted	Voltage levels and key reasons
CE – NEDL	2	1 LV – due to lack of a verifiable isolation time 1 LV – due to un-auditable on / off tomes
CE – YEDL	1	1 LV – due to an un-verifiable isolation time
CN – East	0	N/A
CN – West	0	N/A
EDFE – EPN	1	1 LV – due to the missing time for a generator disconnection
EDFE – LPN	1	1 HV – due to the lack of an audit trail for the end time of a restoration stage
EDFE – SPN	0	N/A
ENW (UUES)	0	N/A
SPD	0	N/A
SPM	0	N/A
SSE – SEPD	4	1 HV – due to the lack of an audit trail 3 LV – due to incomplete audit trails
SSE – SHEPD	0	N/A
WPD – Sth Wales	2	1 LV – due to network changes since the incident 1 LV – due to the lack of an auditable interruption time
WPD – Sth West	2	2 LV – due to the lack of auditable restoration times

The following Table summarises the number of outlying incidents for each DNO at the relevant voltage levels.

Table 12 Number of Outliers

Licensed Area	Number of outlying incidents	Sample	
		Overall	LV
CE – NEDL	2	1 on both CI and CML	1 on both CI and CML
CE – YEDL	3	1 on CI 1 on CML	1 on both CI and CML
CN – East	4	1 on CI 2 on CML	1 on both CI and CML
CN – West	3	1 on CML 1 on both CI and CML	1 on both CI and CML
EDFE – EPN	2	1 on both CI and CML	1 on CML
EDFE – LPN	2	1 on both CI and CML	1 on both CI and CML
EDFE – SPN	3	1 on CML 1 on both CI and CML	1 on CI
ENW (UUES)	4	1 on CI 1 on CML	1 on CI 1 on CML
SPD	5	2 on CI 2 on CML	1 on CI
SPM	4	1 on CI 2 on CML	1 on CI
SSE – SEPD	2	1 on both CI and CML	1 on both CI and CML
SSE – SHEPD	3	1 on CI 1 on CML	1 on CI
WPD – Sth Wales	4	2 on CI 1 on CML	1 on CML
WPD – Sth West	4	1 on CI 1 on CML	1 on CI 1 on CML

The following Table sets out a summary breakdown from the incident-auditing workbooks of the numbers of audited incidents with audit variances. Please note that a variance in CI will generally result in an equivalent variance in CML, whereas the reverse is not the case. The CI and CML figures in the sample rows are therefore not additive.

Table 13 Number of Incidents with Variances

Licensed Area	Number of incidents with variances			
	Overall Sample		LV Sample	
	CI	CML[1]	CI	CML[1]
CE – NEDL	5	9	5	8
CE – YEDL	9	15	4	5
CN – East	5	10	5	7
CN – West	4	9	4	7
EDFE – EPN	17	23	10	11
EDFE – LPN	15	19	15	18
EDFE – SPN	17	19	17	18
ENW (UUES)	9	25	7	14
SPD	14	16	12	13
SPM	7	8	6	6
SSE – SEPD	6	13	6	11
SSE – SHEPD	4	8	4	5
WPD – Sth Wales	3	7	3	7
WPD – Sth West	2	3	2	3

***Notes:**

1. Figures relate to the total number of incidents with CML variances as a result of either CI or time variances or both.

Appendix B. Audit Report for the CE - NEDL Licensed Area

Introduction

Visit Details	
Date of audit visit:	26 and 27 May 2009
Location of audit visit:	CE Electric's Control Centre at Leeds
Visiting Auditors:	James Hope (Ofgem) and Geoff Stott (BPI)
DNO Auditing Team:	Martin Hart, Tony Ingham, Jeremy Meara, Danielle Oates, Ian Punshon and Brian Walton

Audit of Measurement Systems

Measurement Area	Significant changes since last year
Interpretation of rigs v5	No changes have been made since last year's audit
MPAN systems	No changes have been made since last year's audit
Connectivity model	No changes have been made since last year's audit

Measurement Area	Planned future changes
MPAN systems	No future changes are currently planned
Connectivity model	No future changes are currently planned
Processes	No future changes are currently planned

Audit of Incident Reporting

Reporting Area	Audit Point	Main Findings
Ofgem's Template	Non reported incidents	None of the non-reported incidents sampled should have been reported in Ofgem's Template
	Issues identified	None
Higher Voltage Incidents	Number of unauditable incidents and spares used	None
	Main sources of reporting error	Only one minor input error
	Issues identified	None
LV Incidents	Number of unauditable incidents and spares used	Two incidents were un-auditable: one due to the lack of a verifiable isolation time and the other due to un-auditable on/off times - spares were used in their place
	Main sources of reporting error	Minor errors in customer count and one transcription error in the end time of a restoration stage
	Issues identified	None
Misclassified Voltage Level	Number of cases of misclassification of voltage level and spares used	None

Audit Results

These results were copy/pasted from the agreed final version of the auditing workbook at the end of the audit visit and have subsequently been confirmed after QA checking by the Consortium.

Restricted incident sample	Audit	MPAN accuracy	Combined accuracy	Threshold	Pass/fail
Overall CI Accuracy	99.98%	99.84%	99.82%	97%	Pass
Overall CML Accuracy	100.22%	99.84%	99.94%	97%	Pass
LV CI Accuracy	99.10%	99.84%	98.94%	92%	Pass
LV CML Accuracy	102.87%	99.84%	97.29%	92%	Pass

CE Electric - NEDL passed the CI and CML overall and LV Stage 2 thresholds; therefore neither of the Stage 3 incident samples was required.

Audit of telephony details returned to Ofgem

The visiting auditors examined NEDL's records of customer calls made as part of three separate incidents at the higher voltage level and two low voltage incidents. In all cases, NEDL demonstrated that the details of every caller who spoke to an agent were forwarded to Ofgem's consultants for potential follow-up as part of the survey of the DNOs' telephone response.

Audit of non-reportable incidents

Category	Number in sample	Number deemed non-reportable	Number deemed reportable
Higher Voltages	30	30	0
Low Voltage	50	50	0
Pre-arranged	20	20	0

Audit of incidents with clock-stopping restoration stages

Category	Number in sample	Number deemed correct	Number deemed incorrect
Higher Voltages	5	5	0
Low Voltage	15	15	0

Audit of telephony details returned to Ofgem

The visiting auditors examined NEDL's records of customer calls made as part of three separate incidents at the higher voltage level and two low voltage incidents. In all cases, NEDL demonstrated that the details of every caller who spoke to an agent were forwarded to Ofgem's consultants for potential follow-up as part of the survey of the DNOs' telephone response.

Additional comment from this year's audit
The visiting auditors are pleased to note NEDL's inclusion of two new team members in this year's IIS audit, thus spreading this aspect of its IIS expertise within its team

Recommendations for Reporting Improvements

Recommendations from last year's audit	DNO action taken	Audit opinion
The visiting auditors strongly recommend that YEDL's initiative to deploy dedicated IRIS specialists is introduced into NEDL without delay	The possible introduction of IRIS specialists for LV work is still under consideration	The visiting auditors are extremely disappointed that this recommendation has not yet been progressed as fundamental errors are still apparent in the results of this year's audit
The visiting auditors are pleased to note that the move to the new NMS has progressed smoothly with no apparent reduction in reporting accuracy	In addition to the regular quarterly, IIS-based, internal audit NEDL, has carried out extensive auditing of LV data. During March 2009 NEDL implemented a programme of refresher training for staff involved in the inputting of HV data into IRIS. A similar programme of refresher training for staff involved in the inputting of LV data into IRIS is ongoing	The visiting auditors are pleased that NEDL has instigated this enhanced training

To:	Recommendation from this year's audit
DNO	The visiting auditors acknowledge that NEDL uses good practice in restarting a clock-stopped period at its normal work start time of 08:00 but recommend that best practice is to restart the clock at the Guaranteed Standard time of 07:00
	The visiting auditors again strongly recommend that NEDL's initiative to deploy dedicated IRIS specialists is rolled out without delay as basic errors are still apparent in NEDL's reporting
Ofgem	Considering the experience gained in the pilot audits of two successive reporting years and the ease with which the un-announced sample at SEPD was audited, Ofgem should consider increasing the number of HV unannounced incidents at the other DNOs
	The inclusion of an audit check on a sample of clock-stopping incidents should be repeated during future IIS audits
	The time needed to correctly identify and to subsequently audit most clock-stopping incidents does not generally appear to be cost effective when viewed from the small impact its removal would have on a DNO's reported performance. Ofgem should consider reviewing the provision of clock-stopping with a view to restricting its use to all but the most onerous of circumstances such as that provided for under rig 2.64
	Consider the categories by which DNOs record non-reportable "incidents" with a view to introducing a more uniform system to give the visiting auditors more confidence that this aspect of the DNOs' reporting is being managed
	It is questioned if incidents of the type encountered on 27 May 2008 were considered during the formulation of the IIP / IIS rigs versions 1 to 5. It is suggested that Ofgem may wish to include such consideration in future consultations on the rigs and any proposed changes thereto

Appendix C. Audit Report for the CE - YEDL Licensed Area

Introduction

Visit Details	
Dates of audit visit:	26 and 27 May 2009
Location of audit visit:	CE Electric's Control Centre at Leeds
Visiting Auditors:	James Hope (Ofgem) and Geoff Stott (BPI)
DNO Auditing Team:	Alan Harris, Tony Ingham, Jeremy Meara, Danielle Oates, Ian Punshon and Mike Smith

Audit of Measurement Systems

Measurement Area	Significant changes since last year
Interpretation of rigs v5	No changes have been made since last year's audit
MPAN systems	No changes have been made since last year's audit
Connectivity model	No changes have been made since last year's audit

Measurement Area	Planned future changes
MPAN systems	No future changes are currently planned
Connectivity model	No future changes are currently planned
Measurement systems	No future changes are currently planned

Audit of Incident Reporting

Reporting Area	Audit Point	Main Findings
Ofgem's Template	Non reported incidents	None of the non-reported incidents sampled should have been reported in Ofgem's Template
	Issues identified	None
Higher Voltage Incidents	Number of unauditable incidents and spares used	None
	Main sources of reporting error	In all, ten incidents contained one or more reporting errors: six incidents had errors in the duration of restoration stages; five incidents had arithmetic or input errors in customer count and one incident had a missing restoration stage
	Issues identified	As above
LV Incidents	Number of unauditable incidents and spares used	One incident had an isolation time that could not be confirmed and it was replaced with a spare.
	Main sources of reporting error	One incident had a missing restoration stage. One incident report was incomplete in regard to multi-phase customers
	Issues identified	As above
Misclassified Voltage Level	Number of cases of misclassification of voltage level and spares used	None

Audit Results

These results were copy/pasted from the agreed final version of the auditing workbook at the end of the audit visit and have subsequently been confirmed after QA checking by the Consortium.

Restricted incident sample	Audit	MPAN accuracy	Combined accuracy	Threshold	Pass/fail
Overall CI Accuracy	99.93%	99.74%	99.67%	97%	Pass
Overall CML Accuracy	99.64%	99.74%	99.38%	97%	Pass
LV CI Accuracy	97.81%	99.74%	97.55%	92%	Pass
LV CML Accuracy	97.77%	99.74%	97.51%	92%	Pass

CE Electric - YEDL passed the CI and CML overall and LV Stage 2 thresholds; therefore neither of the Stage 3 incident samples was required.

Audit of non-reportable incidents

Category	Number in sample	Number deemed non-reportable	Number deemed reportable
Higher Voltages	30	30	0
Low Voltage	50	50	0
Pre-arranged	20	20	0

Audit of incidents with clock-stopping restoration stages

Category	Number in sample	Number deemed correct	Number deemed incorrect
Higher Voltages	5	5	0
Low Voltage	15	15	0

Audit of telephony details returned to Ofgem

The visiting auditors examined YEDL's records of customer calls made as part of three separate incidents at the higher voltage level and two low voltage incidents. In the case of two of the higher voltage incidents and both of the low voltage incidents, YEDL demonstrated that the details of every caller who spoke to an agent were forwarded to Ofgem's consultants for potential follow-up as part of the survey of the DNOs' telephone response with the following exception: The details of one caller associated with an HV incident was not forwarded to Ofgem's consultants due to the caller withholding their name.

Additional comment from this year's audit
The visiting auditors are pleased to note YEDL's inclusion of a new team member in this year's IIS audit, thus spreading this aspect of its IIS expertise within its team

Recommendations for Reporting Improvements

Recommendations from last year's audit	DNO action taken	Audit opinion
The visiting auditors strongly recommend that YEDL's initiative to deploy dedicated IRIS specialists is rolled out without delay as basic errors are still apparent in YEDL's reporting	The possible introduction of IRIS specialists for LV work is still under consideration	The visiting auditors are extremely disappointed that this recommendation has not yet been progressed as fundamental errors are still apparent in the results of this year's audit
The visiting auditors suggest that YEDL enhances its internal audit regime during the introduction of its NMS to TMS link	In addition to the regular quarterly, IIS-based, internal audit YEDL, has carried out extensive auditing of LV data. During March 2009 YEDL implemented a programme of refresher training for staff involved in the inputting of HV data into IRIS. A similar programme of refresher training for staff involved in the inputting of LV data into IRIS is ongoing	The visiting auditors are pleased that YEDL has instigated this enhanced training

To:	Recommendation from this year's audit
DNO	The visiting auditors were disappointed to see the number of higher voltage incidents in this year's sample that contained errors and recommend that the learning points are shared across YEDL's IIS recording and reporting team
	The visiting auditors acknowledge that YEDL uses good practice in restarting a clock-stopped period at its normal work start time of 08:00 but recommend that best practice is to restart the clock at the Guaranteed Standard time of 07:00
	The visiting auditors again strongly recommend that YEDL's initiative to deploy dedicated IRIS specialists is rolled out without delay as basic errors are still apparent in YEDL's reporting
Ofgem	Considering the experience gained in the pilot audits of two successive reporting years and the ease with which the un-announced sample at YEDL was audited, Ofgem should consider increasing the number of HV unannounced incidents at the other DNOs
	The inclusion of an audit check on a sample of clock-stopping incidents should be repeated during future IIS audits
	The time needed to correctly identify and to subsequently audit most clock-stopping incidents does not generally appear to be cost effective when viewed from the small impact its removal would have on a DNO's reported performance. Ofgem should consider reviewing the provision of clock-stopping with a view to restricting its use to all but the most onerous of circumstances such as that provided for under rig 2.64
	Consider the categories by which DNOs record non-reportable "incidents" with a view to introducing a more uniform system to give the visiting auditors more confidence that this aspect of the DNOs' reporting is being managed
	It is questioned if incidents of the type encountered on 27 May 2008 were considered during the formulation of the IIP / IIS rigs versions 1 to 5. It is suggested that Ofgem may wish to include such consideration in future consultations on the rigs and any proposed changes thereto

Appendix D. Audit Report for the CN - East Licensed Area

Introduction

Visit Details	
Date of audit visit:	06 and 07 May 2009
Location of audit visit:	CN's offices at Castle Donington
Visiting Auditors:	James Hope (Ofgem) and Geoff Stott (BPI)
DNO Auditing Team:	Jim Driscoll, Stephen Hayward, Nigel Hoult, Ian Jacob, Gavin Vaughan and Allison Worsnop

Audit of Measurement Systems

Measurement Area	Significant changes since last year
Interpretation of rigs v5	No changes have been made since last year's audit
MPAN systems	No changes have been made since last year's audit
Connectivity model	No changes have been made since last year's audit

Measurement Area	Planned future changes
MPAN systems	No future changes are planned
Connectivity model	No future changes are planned

Audit of Incident Reporting

Reporting Area	Audit Point	Main Findings
Ofgem's Template	Non reported incidents	Of the 25 non-reported LV incidents, 1 should have been reported. None of the 75 other 'incidents' should have been reported
	Issues identified	Open circuit cables with no customers affected should be reported under rig 2.15
Higher Voltage Incidents	Number of unauditable incidents and spares used	None
	Main sources of reporting error	One incident had a missing restoration stage and another had the incorrect end time for a period of clock-stopping
	Issues identified	None
LV Incidents	Number of unauditable incidents and spares used	None
	Main sources of reporting error	Minor errors in customer counts, including one-third / two-thirds rule. One incident had an incorrect interruption time
	Issues identified	None
Misclassified Voltage Level	Number of cases of misclassification of voltage level and spares used	None

Audit Results

These results were copy/pasted from the agreed final version of the auditing workbook at the end of the audit visit and have subsequently been confirmed after QA checking by the Consortium.

Restricted incident sample	Audit	MPAN accuracy	Combined accuracy	Threshold	Pass/fail
Overall CI Accuracy	100.00%	99.91%	99.92%	97%	Pass
Overall CML Accuracy	100.14%	99.91%	99.95%	97%	Pass
LV CI Accuracy	100.11%	99.91%	99.97%	92%	Pass
LV CML Accuracy	99.82%	99.91%	99.73%	92%	Pass

CN East passed the CI and CML overall and LV Stage 2 thresholds; therefore neither of the Stage 3 incident samples was required.

Audit of non-reportable incidents

Category	Number in sample	Number deemed non-reportable	Number deemed reportable
Higher Voltages	20	20	0
Low Voltage	20	19	1
Miscellaneous	30	30	0
Single Premises	30	30	0

Audit of incidents with clock-stopping restoration stages

Category	Number in sample	Number deemed correct	Number deemed incorrect
Higher Voltages	5	5	0
Low Voltage	15	15	0

Audit of telephony details returned to Ofgem

The visiting auditors examined CN East's records of customer calls made as part of three separate incidents at the higher voltage level and two low voltage incidents. In the case of two of the higher voltage incidents and both of the low voltage incidents, CN East demonstrated that the details of every caller who spoke to an agent were forwarded to Ofgem's consultants for potential follow-up as part of the survey of the DNOs' telephone response. In the case of one higher voltage incident CN East showed that the details of one caller had not been forwarded to Ofgem's consultants due to a manual transcription error associated with a shift change.

Additional audit activity this year
Many of the announced CN East's HV incidents sampled this year contained elements where Field Control had been used within the restoration activity. Consequently CN East called-in the associated field switching log books to demonstrate the times for various restoration stages
The visiting auditors took the opportunity to cross-check the field switching logs with the corresponding entries in CN East's ENMAC / TCS logs. In each case the entries corresponding and the visiting auditors are therefore satisfied that field switching log books would not be needed for the unannounced incidents or for announced incidents in subsequent audit visits

Recommendations for Reporting Improvements

Recommendations from last year's audit	DNO action taken	Audit opinion
Once the two new team members have gained experience, CN may wish to consider widening the scope of its internal audit regime	CN East continues to develop the expertise of its IIS reported team, bringing new members into the team in a managed way	The visiting auditors are pleased to observe the expertise and enthusiasm the newest members of CN East's team have already developed
Continue with the comprehensive telephone notes as these were found to be particularly helpful	CN East continues to reinforce this aspect of its IIS reporting	The visiting auditors are pleased to note the cross-referencing within CN East's measurement systems is being augmented by notes from internal audits
Complete the excellent work now underway to eliminate zero-customer transformers	CN East has continued its work to eliminate this phenomenon from its measurement systems	The visiting auditors are pleased to note the absence of zero customer transformers in this year's audit

To:	Recommendation from this year's audit
DNO	Continue with the approach of including cross-referencing notes in the IIS measurement and reporting systems as these greatly help the auditing process
	The visiting auditors recommend that CN East reviews the categories by which non-reported "incidents" are classified to reflect the broad reasons for non-reporting
Ofgem	Considering the experience gained in the pilot audits of two successive reporting years, Ofgem should consider widening the unannounced approach to other DNOs
	The inclusion of an audit check on a sample of clock-stopping incidents should be repeated during future IIS audits
	The time needed to correctly identify and to subsequently audit most clock-stopping incidents does not generally appear to be cost effective when viewed from the small impact its removal would have on a DNO's reported performance. Ofgem should consider reviewing the provision of clock-stopping with a view to restricting its use to all but the most onerous of circumstances such as that provided for under rig 2.64
	Consider the categories by which DNOs record non-reportable "incidents" with a view to introducing a more uniform system to give the visiting auditors more confidence that this aspect of the DNOs' reporting is being managed

Additional comments from this year's audit
The visiting auditors are pleased to note CN East's continuance in developing its IIS reporting expertise by introducing young and enthusiastic people as newer members of its team. Consequently, the visiting auditors consider that the renewed impetus will enable CN East to develop further the overall expertise of its people. The expertise of CN East's newest team members is exemplified by their approach to the analysis and reporting of a complex 12-stage LV incident

Appendix E. Audit Report for the CN - West Licensed Area

Introduction

Visit Details	
Date of audit visit:	06 and 07 May 2009
Location of audit visit:	CN's offices at Castle Donington
Visiting Auditors:	James Hope (Ofgem) and Geoff Stott (BPI)
DNO Auditing Team:	Richard Ellam, Nigel Hoult, Ian Jacob, Manjit Kandola and Scott Walters

Audit of Measurement Systems

Measurement Area	Significant changes since last year
Interpretation of rigs v5	No changes have been made since last year's audit
MPAN systems	No changes have been made since last year's audit
Connectivity model	No changes have been made since last year's audit

Measurement Area	Planned future changes
MPAN systems	No future changes are planned
Connectivity model	No future changes are planned

Audit of Incident Reporting

Reporting Area	Audit Point	Main Findings
Ofgem's Template	Non reported incidents	None of the non-reported incidents sampled should have been reported in Ofgem's Template
	Issues identified	None
Higher Voltage Incidents	Number of unauditable incidents and spares used	None
	Main sources of reporting error	None
	Issues identified	One incident had a minor error in the customer count and another had an error in the start time
LV Incidents	Number of unauditable incidents and spares used	None
	Main sources of reporting error	None
	Issues identified	Minor errors in customer count and in start times
Misclassified Voltage Level	Number of cases of misclassification of voltage level and spares used	None

Audit Results

These results were copy/pasted from the agreed final version of the auditing workbook at the end of the audit visit and have subsequently been confirmed after QA checking by the Consortium.

Restricted incident sample	Audit	MPAN accuracy	Combined accuracy	Threshold	Pass/fail
Overall CI Accuracy	100.00%	99.50%	99.50%	97%	Pass
Overall CML Accuracy	100.02%	99.50%	99.52%	97%	Pass
LV CI Accuracy	99.72%	99.51%	99.23%	92%	Pass
LV CML Accuracy	100.46%	99.51%	99.97%	92%	Pass

CN West passed the CI and CML overall and LV Stage 2 thresholds; therefore neither of the Stage 3 incident samples was required.

Audit of non-reportable incidents

Category	Number in sample	Number deemed non-reportable	Number deemed reportable
Mixed	100	100	0

Audit of incidents with clock-stopping restoration stages

Category	Number in sample	Number deemed correct	Number deemed incorrect
Higher Voltages	5	5	0
Low Voltage	15	15	0

Audit of telephony details returned to Ofgem

The visiting auditors examined CN West's records of customer calls made as part of three separate incidents at the higher voltage level and two low voltage incidents. With the exception of two callers who declined to participate in the survey, CN West demonstrated that the details of every caller who spoke to an agent were forwarded to Ofgem's consultants for potential follow-up as part of the survey of the DNOs' telephone response.

Recommendations for Reporting Improvements

Recommendations from last year's audit	DNO action taken	Audit opinion
Once the two new team members have gained experience, CN may wish to consider widening the scope of its internal audit regime	CN West continues to develop the expertise of its IIS reported team, bringing new members into the team in a managed way	The visiting auditors are pleased to observe the expertise and enthusiasm the newest members of CN West's team have already developed
Continue with the comprehensive telephone notes as these were found to be particularly helpful	CN West continues to reinforce this aspect of its IIS reporting	The visiting auditors are pleased to note the cross-referencing within CN West's measurement systems is being augmented by notes from internal audits

Recommendations from last year's audit	DNO action taken	Audit opinion
Complete the excellent work now underway to eliminate zero-customer transformers	CN West has continued its work to eliminate this phenomenon from its measurement systems	The visiting auditors are pleased to note the absence of zero customer transformers in this year's audit

To:	Recommendation from this year's audit
DNO	Continue with the approach of including cross-referencing notes in the IIS measurement and reporting systems as these greatly help the auditing process
	The visiting auditors recommend that CN West reviews the categories by which non-reported "incidents" are classified to reflect the broad reasons for non-reporting
Ofgem	Considering the experience gained in the pilot audits of two successive reporting years, Ofgem should consider widening the unannounced approach to other DNOs
	The inclusion of an audit check on a sample of clock-stopping incidents should be repeated during future IIS audits
	The time needed to correctly identify and to subsequently audit most clock-stopping incidents does not generally appear to be cost effective when viewed from the small impact its removal would have on a DNO's reported performance. Ofgem should consider reviewing the provision of clock-stopping with a view to restricting its use to all but the most onerous of circumstances such as that provided for under rig 2.64
	Consider the categories by which DNOs record non-reportable "incidents" with a view to introducing a more uniform system to give the visiting auditors more confidence that this aspect of the DNOs' reporting is being managed

Additional comment from this year's audit
The visiting auditors are pleased to note CN West's continuance in developing its IIS reporting expertise by introducing young and enthusiastic people as newer members of its team. Consequently, the visiting auditors consider that the renewed impetus will enable CN West to develop further the overall expertise of its people

Appendix F. Audit Report for the EDFE - EPN Licensed Area

Introduction

Visit Details	
Dates of audit visit:	11 to 13 May 2009
Location of audit visit:	EDF Energy's Ipswich Control Centre
Visiting Auditors:	James Hope (Ofgem), Thomas Johns (Ofgem) and Geoff Stott (BPI)
DNO Auditing Team:	Bill d'Albertanson, Chris Barker, Ken Tew, Martyn Woodhouse and Dave Young

Audit of Measurement Systems

Measurement Area	Significant changes since last year
Interpretation of rigs v5	No changes have been made since last year's audit
MPAN systems	No changes have been made since last year's audit
Connectivity model	No changes have been made since last year's audit

Measurement Area	Planned future changes
MPAN systems	No future changes are planned
Connectivity model	No future changes are planned
Control System	Introduce ENMAC automated fault report generation during the 2009/10 reporting year to put EPN in line with EDF Energy's strategy to run a common control platform

Audit of Incident Reporting

Reporting Area	Audit Point	Main Findings
Ofgem's Template	Non reported incidents	Of the 150 non-reported LV incidents, 1 should have been reported. None of the 50 HV 'incidents' should have been reported This is a significant improvement over last year
	Issues identified	The LV incident occurred before EPN established its more rigorous internal audit regime.
Higher Voltage Incidents	Number of unauditable incidents and spares used	One incident could not be audited due to an un-auditable restoration stage, a spare was used in its place
	Main sources of reporting error	As last year, several incidents contained input errors that could not be explained from an examination of the audit trail documentation. Four incidents each had a missing restoration stage
	Issues identified	As above

Reporting Area	Audit Point	Main Findings
LV Incidents	Number of unauditable incidents and spares used	One incident could not be audited due to the absence of the time that customer on generator was disconnected, a spare was used in its place
	Main sources of reporting error	Minor errors in customer count and in start times
	Issues identified	None
Misclassified Voltage Level	Number of cases of misclassification of voltage level and spares used	None

Audit Results

These results were copy/pasted from the agreed final version of the auditing workbook at the end of the audit visit and have subsequently been confirmed after QA checking by the Consortium.

Restricted incident sample	Audit	MPAN accuracy	Combined accuracy	Threshold	Pass/fail
Overall CI Accuracy	99.39%	99.66%	99.05%	97%	Pass
Overall CML Accuracy	99.04%	99.66%	98.70%	97%	Pass
LV CI Accuracy	97.92%	99.66%	97.58%	92%	Pass
LV CML Accuracy	98.04%	99.66%	97.70%	92%	Pass

EPN passed the CI and CML overall and LV Stage 2 thresholds; therefore neither of the Stage 3 incident samples was required.

Audit of non-reportable incidents

Category	Number in sample	Number deemed non-reportable	Number deemed reportable
Higher Voltages	50	50	0
Low Voltage	150	149	1

Audit of incidents with clock-stopping restoration stages

Category	Number in sample	Number deemed correct	Number deemed incorrect
Low Voltage	20	20	0

Audit of telephony details returned to Ofgem

The visiting auditors examined EPN's records of customer calls made as part of three separate incidents at the higher voltage level and two low voltage incidents. In all cases, EPN demonstrated that the details of every caller who spoke to an agent and did not decline to have their details forwarded were sent to Ofgem's consultants for potential follow-up as part of the survey of the DNOs' telephone response.

Additional audit activity this year
During the audit of the incidents where clock-stopping had been used, the visiting auditors were pleased to note that, in the absence of any specific request from the customer, EPN uses the Guaranteed Standard start time (07:00) as the end of the period of clock-stopping. The visiting auditors consider this approach to be best practice

Recommendations for Reporting Improvements

Recommendations from last year's audit	DNO action taken	Audit opinion
The visiting auditors are pleased to note EPN's move to improving its internal auditing regime and consequently recommend that any lessons learned are shared amongst the relevant people	EPN has continued with its internal audit regime, notes from which will be found in some of the incidents sampled	The visiting auditors are pleased that EPN has continued to emphasise the importance of its internal audit regime but are disappointed to note the number of errors that are still evident in LV incident reports
EPN may wish to reduce the amount of pre-audit preparation and printing of incident reports as it was found to be straightforward to audit the majority of incidents directly from the electronic records on screen	EPN has considered this aspect of its pre-audit visit preparation but is reluctant to change its method of working at this time as it is in the process of training another person to conduct the audit process	The visiting auditors note EPN's view of this aspect of its pre-audit preparation and agree that the training of EPN's personnel is important

To:	Recommendation from this year's audit
DNO	The audit of HV incidents contained several interruption stages where distribution transformers show zero connected customers. The visiting auditors are pleased to note that EPN continues to investigate this aspect of its connectivity model
	The visiting auditors have noted the lack of an automated link between HV MPANs and ENMAC and suggest that EPN continues to pursue the introduction of this link
Ofgem	Considering the experience gained in the pilot audits of two successive reporting years, Ofgem should consider increasing the number of HV unannounced incidents at the other DNOs
	The inclusion of an audit check on a sample of clock-stopping incidents should be repeated during future IIS audits
	The time needed to correctly identify and to subsequently audit most clock-stopping incidents does not generally appear to be cost effective when viewed from the small impact its removal would have on a DNO's reported performance. Ofgem should consider reviewing the provision of clock-stopping with a view to restricting its use to all but the most onerous of circumstances such as that provided for under rig 2.64
	Consider the categories by which DNOs record non-reportable "incidents" with a view to introducing a more uniform system to give the visiting auditors more confidence that this aspect of the DNOs' reporting is being managed

Appendix G. Audit Report for the EDFE - LPN Licensed Area

Introduction

Visit Details	
Dates of audit visit:	11 to 13 May 2009
Location of audit visit:	EDF Energy's Ipswich Control Centre
Visiting Auditors:	James Hope (Ofgem), Laura Nell (Ofgem) and Geoff Stott (BPI)
DNO Auditing Team:	Bill d'Albertanson, Chris Barker, Ken Tew, Dave Walter and Dave Young

Audit of Measurement Systems

Measurement Area	Significant changes since last year
Interpretation of rigs v5	No changes have been made since last year's audit
MPAN systems	No changes have been made since last year's audit
Connectivity model	No changes have been made since last year's audit

Measurement Area	Planned future changes
MPAN systems	No future changes are planned
Connectivity model	No future changes are planned
Control System	Introduce ENMAC automated fault report generation during the 2010/11 reporting year to put LPN in line with EDF Energy's strategy to run a common control platform

Audit of Incident Reporting

Reporting Area	Audit Point	Main Findings
Ofgem's Template	Non reported incidents	None of the 100 non-reported incidents sampled should have been reported in Ofgem's Template
	Issues identified	None
Higher Voltage Incidents	Number of unauditable incidents and spares used	Due to the lack of an audit trail for the end time of a restoration stage, one incident could not be audited and a spare was used instead. The start time of another incident had been taken as an earth fault alarm and not the first no-supply call
	Main sources of reporting error	None
	Issues identified	None
LV Incidents	Number of unauditable incidents and spares used	None
	Main sources of reporting error	Minor errors in customer counts. Two incidents had incorrect interruption times
	Issues identified	As above
Misclassified Voltage Level	Number of cases of misclassification of voltage level and spares used	None

Audit Results

These results were copy/pasted from the agreed final version of the auditing workbook at the end of the audit visit and have subsequently been confirmed after QA checking by the Consortium.

Restricted incident sample	Audit	MPAN accuracy	Combined accuracy	Threshold	Pass/fail
Overall CI Accuracy	99.96%	99.58%	99.54%	97%	Pass
Overall CML Accuracy	99.69%	99.58%	99.27%	97%	Pass
LV CI Accuracy	98.03%	99.58%	97.61%	92%	Pass
LV CML Accuracy	95.17%	99.58%	94.76%	92%	Pass

LPN passed the CI and CML overall and LV Stage 2 thresholds; therefore neither of the Stage 3 incident samples was required.

Audit of non-reportable incidents

Category	Number in sample	Number deemed non-reportable	Number deemed reportable
Higher Voltages	25	25	0
Low Voltage	75	75	0

Audit of incidents with clock-stopping restoration stages

Category	Number in sample	Number deemed correct	Number deemed incorrect
Low Voltage	19	19	0

Audit of telephony details returned to Ofgem

The visiting auditors examined LPN's records of customer calls made as part of three separate incidents at the higher voltage level and two low voltage incidents. All callers' details were passed to Ofgem's consultants. For one of the higher voltage incidents, one of the caller's numbers was incorrectly entered into LPN's measurement systems and thus could not be used by Ofgem's consultants for follow-up as part of the survey of the DNOs' telephone response.

Additional audit activity this year
During the audit of the incidents where clock-stopping had been used, the visiting auditors were pleased to note that, in the absence of any specific request from the customer, LPN uses the Guaranteed Standard start time (07:00) as the end of the period of clock-stopping. The visiting auditors consider this approach to be best practice

Recommendations for Reporting Improvements

Recommendations from last year's audit	DNO action taken	Audit opinion
The visiting auditors are pleased to note LPN's increased emphasis on its internal audit regime and recommend that this continues	LPN has continued with its internal audit regime, notes from which will be found in some of the incidents sampled	The visiting auditors are pleased that LPN has continued to emphasise the importance of its internal audit regime but are disappointed to note the number of errors that are still evident in LV incident reports
LPN may wish to reduce the amount of pre-audit preparation and printing of incident reports as it was found to be straightforward to audit the majority of incidents directly from the electronic records on screen	LPN has considered this aspect of its pre-audit visit preparation but is reluctant to change its method of working at this time as it is in the process of training another person to conduct the audit process	The visiting auditors note LPN's view of this aspect of its pre-audit preparation and agree that the training of LPN's personnel is important

To:	Recommendation from this year's audit
DNO	The visiting auditors recommend that LPN continues to work to reduce the number of errors still evident within its LV fault reports, through a redoubling of its internal auditing regime
	The visiting auditors recommend that LPN reviews the categories by which non-reported "incidents" are classified to reflect the broad reasons for non-reporting
Ofgem	Considering the experience gained in the pilot audits of two successive reporting years, Ofgem should consider increasing the number of HV unannounced incidents at the other DNOs
	The inclusion of an audit check on a sample of clock-stopping incidents should be repeated during future IIS audits
	The time needed to correctly identify and to subsequently audit most clock-stopping incidents does not generally appear to be cost effective when viewed from the small impact its removal would have on a DNO's reported performance. Ofgem should consider reviewing the provision of clock-stopping with a view to restricting its use to all but the most onerous of circumstances such as that provided for under rig 2.64
	Consider the categories by which DNOs record non-reportable "incidents" with a view to introducing a more uniform system to give the visiting auditors more confidence that this aspect of the DNOs' reporting is being managed

Appendix H. Audit Report for the EDFE - SPN Licensed Area

Introduction

Visit Details	
Dates of audit visit:	11 to 13 May 2009
Location of audit visit:	EDF Energy's Ipswich Control Centre
Visiting Auditors:	James Hope (Ofgem), Dorothy Eke (Ofgem) and Geoff Stott (BPI)
DNO Auditing Team:	Bill d'Albertanson, Chris Barker, Simon Mulcahy, Dave Partington, Jackie Samways, Ken Tew and Dave Young

Audit of Measurement Systems

Measurement Area	Significant changes since last year
Interpretation of rigs v5	No changes have been made since last year's audit
MPAN systems	No changes have been made since last year's audit
Connectivity model	No changes have been made since last year's audit

Measurement Area	Planned future changes
MPAN systems	No future changes are planned
Connectivity model	No future changes are planned

Audit of Incident Reporting

Reporting Area	Audit Point	Main Findings
Ofgem's Template	Non reported incidents	Of the 150 non-reported LV incidents, 1 should have been reported. None of the 50 HV 'incidents' should have been reported This is an improvement over last year
	Issues identified	The LV incident occurred before SPN established its more rigorous internal audit regime
Higher Voltage Incidents	Number of unauditable incidents and spares used	None
	Main sources of reporting error	One incident had a minor input error due mis-reading an incident report
	Issues identified	None
LV Incidents	Number of unauditable incidents and spares used	None
	Main sources of reporting error	Minor errors in customer count
	Issues identified	None
Misclassified Voltage Level	Number of cases of misclassification of voltage level and spares used	None

Audit Results

These results were copy/pasted from the agreed final version of the auditing workbook at the end of the audit visit and have subsequently been confirmed after QA checking by the Consortium.

Restricted incident sample	Audit	MPAN accuracy	Combined accuracy	Threshold	Pass/fail
Overall CI Accuracy	100.01%	99.71%	99.72%	97%	Pass
Overall CML Accuracy	100.03%	99.71%	99.74%	97%	Pass
LV CI Accuracy	100.61%	99.71%	99.68%	92%	Pass
LV CML Accuracy	96.07%	99.71%	95.79%	92%	Pass

SPN passed the CI and CML overall and LV Stage 2 thresholds; therefore neither of the Stage 3 incident samples was required.

Audit of non-reportable incidents

Category	Number in sample	Number deemed non-reportable	Number deemed reportable
Higher Voltages	50	50	0
Low Voltage	150	149	1

Audit of incidents with clock-stopping restoration stages

Category	Number in sample	Number deemed correct	Number deemed incorrect
Low Voltage	5	5	0

Audit of telephony details returned to Ofgem

The visiting auditors examined SPN's records of customer calls made as part of three separate incidents at the higher voltage level and two low voltage incidents. In all cases, SPN demonstrated that the details of every caller who spoke to an agent and did not decline to have their details forwarded were sent to Ofgem's consultants for potential follow-up as part of the survey of the DNOs' telephone response.

Additional audit activity this year
During the audit of the incidents where clock-stopping had been used, the visiting auditors were pleased to note that, in the absence of any specific request from the customer, SPN uses the Guaranteed Standard start time (07:00) as the end of the period of clock-stopping. The visiting auditors consider this approach to be best practice

Recommendations for Reporting Improvements

Recommendations from last year's audit	DNO action taken	Audit opinion
To continue with the internal audit regime, especially given the recent change to the ENMAC / Troublecall system and the teething troubles that may ensue	SPN has continued to emphasise the importance of its internal auditing regime and has consolidated its experience with the latest version of ENMAC	The visiting auditors are pleased to note the virtual absence of errors in the sample of HV incidents, the only error being found to be due to an incorrect manual intervention in the otherwise fully automated process
The visiting auditors are disappointed to note the number of errors in the audit of SPN's LV incidents, where basic errors are being made. Consequently, the visiting auditors recommend that SPN considers providing refresher training in the reporting of its LV incidents	In moving to its new measurement and reporting system, SPN has provided up to date training in all aspects of IIS reporting	The visiting auditors are pleased to note the reduction in input errors in this year's audit sample
The visiting auditors are further disappointed to note that some of the above errors existed in incident reports that had been subjected to SPN's internal LV audit and recommend that SPN reinforces this aspect of its reporting procedures	SPN has adopted a more rigorous internal audit regime	The visiting auditors are pleased to note the absence of this problem in the audit of this year's incident sample

To:	Recommendation from this year's audit
DNO	Given the experience with its automated ENMAC to fault report link, SPN may wish to reduce the amount of preparation it does ahead of the audit visit
	SPN may wish to review its convention of ignoring the two-thirds / one-third rule where only one phase of an HV system is lost
Ofgem	Considering the experience gained in the pilot audits of two successive reporting years, Ofgem should consider increasing the number of HV unannounced incidents at the other DNOs
	The inclusion of an audit check on a sample of clock-stopping incidents should be repeated during future IIS audits
	The time needed to correctly identify and to subsequently audit most clock-stopping incidents does not generally appear to be cost effective when viewed from the small impact its removal would have on a DNO's reported performance. Ofgem should consider reviewing the provision of clock-stopping with a view to restricting its use to all but the most onerous of circumstances such as that provided for under rig 2.64
	Consider the categories by which DNOs record non-reportable "incidents" with a view to introducing a more uniform system to give the visiting auditors more confidence that this aspect of the DNOs' reporting is being managed

Appendix I. Audit Report for the ENW - UUES Licensed Area

Introduction

Visit Details	
Date of audit visit:	03 June 2009
Location of audit visit:	ENW-UUES's Control Centre, Manchester
Visiting Auditors:	James Hope (Ofgem) and Geoff Stott (BPI)
DNO Auditing Team:	Denham Croden, Julie Jackson, Paul Lomax, Kate Quigley, Dan Randles, Rob Snell and Ellis Wilkinson

Audit of Measurement Systems

Measurement Area	Significant changes since last year
Interpretation of rigs v5	No changes have been made since last year's audit
MPAN systems	No changes have been made since last year's audit
Connectivity model	No changes have been made since last year's audit

Measurement Area	Planned future changes
MPAN systems	No future changes are planned – data cleansing is ongoing
Connectivity model	No future changes are planned

Audit of Incident Reporting

Reporting Area	Audit Point	Main Findings
Ofgem's Template	Non reported incidents	None of the non-reported incidents sampled should have been reported in Ofgem's Template
	Issues identified	None
Higher Voltage Incidents	Number of unauditable incidents and spares used	No incidents were unauditable and no spares were used
	Main sources of reporting error	Instances of wrong start and end times being used. Two incidents each had a missing restoration stage
	Issues identified	As above
LV Incidents	Number of unauditable incidents and spares used	No incidents were unauditable and no spares were used
	Main sources of reporting error	Minor errors in customer count and in restoration times. One incident contained an inconsistent application of the DNO's own 3 minute rule
	Issues identified	As above
Misclassified Voltage Level	Number of cases of misclassification of voltage level and spares used	None

Audit Results

These results were copy/pasted from the agreed final version of the auditing workbook at the end of the audit visit and have subsequently been confirmed after QA checking by the Consortium.

Restricted incident sample	Audit	MPAN accuracy	Combined accuracy	Threshold	Pass/fail
Overall CI Accuracy	100.05%	99.42%	99.46%	97%	Pass
Overall CML Accuracy	99.73%	99.42%	99.15%	97%	Pass
LV CI Accuracy	100.00%	99.46%	99.46%	92%	Pass
LV CML Accuracy	98.62%	99.46%	98.08%	92%	Pass

ENW / UUES passed the CI and CML overall and LV Stage 2 thresholds; therefore neither of the Stage 3 incident samples was required.

Audit of non-reportable incidents

Category	Number in sample	Number deemed non-reportable	Number deemed reportable
Higher voltages	25	25	0
Low Voltage	25	25	0
Short interruptions	25	25	0
Single Premises	25	25	0

Audit of incidents with clock-stopping restoration stages

Category	Number in sample	Number deemed correct	Number deemed incorrect
Higher Voltages	5	5	0
Low Voltage	15	15	0

Audit of telephony details returned to Ofgem

The visiting auditors examined UUES's records of customer calls made as part of three separate incidents at the higher voltage level and two low voltage incidents. In all cases, UUES demonstrated that the details of every caller who spoke to an agent were forwarded to Ofgem's consultants for potential follow-up as part of the survey of the DNOs' telephone response.

Additional comment from this year's audit
The visiting auditors are pleased to note ENW-UUES's inclusion of new team members in this year's IIS audit, thus spreading this aspect of its IIS expertise within its team

Recommendations for Reporting Improvements

Recommendations from last year's audit	DNO action taken	Audit opinion
The visiting auditors recommend that ENW-UUES reviews its internal auditing regime to ensure that more of its HV incidents are subjected to checking	ENW-UUES has reinforced its internal auditing regime, including the introduction of additional members to its internal auditing team	The visiting auditors are pleased to note that ENW-UUES has enhanced its internal auditing regime and recommend that this continues into the future
The visiting auditors recommend that UUES reviews the categories it uses to record the non-reported incidents to better reflect those used in the majority of DNOs	ENW-UUES has examined its list of non-reported incidents and arranged them into various categories	The visiting auditors are pleased to note that ENW-UUES has categorised its non-reported incidents as this provides a better overview of the management of this aspect of its IIS reporting

To:	Recommendation from this year's audit
DNO	The visiting auditors recommend that ENW-UUES continues with its enhanced internal auditing regime to further reduce the number of errors in its IIS reporting
	The visiting auditors recommend that, where no customer requests to the contrary, ENW-UUES adopts a clock-restart time of 07:00, which is consistent with the Guaranteed Standard when a customer has been off-supply overnight
Ofgem	ENW-UUES's current system does not readily lend itself to increasing the number of unannounced HV incidents
	The inclusion of an audit check on a sample of clock-stopping incidents should be repeated during future IIS audits
	The time needed to correctly identify and to subsequently audit most clock-stopping incidents does not generally appear to be cost effective when viewed from the small impact its removal would have on a DNO's reported performance. Ofgem should consider reviewing the provision of clock-stopping with a view to restricting its use to all but the most onerous of circumstances such as that provided for under rig 2.64
	Consider the categories by which DNOs record non-reportable "incidents" with a view to introducing a more uniform system to give the visiting auditors more confidence that this aspect of the DNOs' reporting is being managed
	It is questioned if incidents of the type encountered on 27 May 2008 were considered during the formulation of the IIP / IIS rigs versions 1 to 5. It is suggested that Ofgem may wish to include such consideration in future consultations on the rigs and any proposed changes thereto

Appendix J. Audit Report for the SPD Licensed Area

Introduction

Visit Details	
Dates of audit visit:	04 and 05 June 2009
Location of audit visit:	ScottishPower's Control Centre at Prenton
Visiting Auditors:	James Hope (Ofgem) and Geoff Stott (BPI)
DNO Auditing Team:	Anne Baikie, Tommy Berry, Cathie Hill, Alyn Jones, Adrian Nicholson and Steve Young

Audit of Measurement Systems

Measurement Area	Significant changes since last year
Interpretation of rigs v5	No changes have been made since last year's audit
MPAN systems	No changes have been made since last year's audit
Connectivity model	No changes have been made since last year's audit

Measurement Area	Planned future changes
MPAN systems	No future changes are planned
Connectivity model	SPD has begun to introduce a replacement GIS system that will have an LV feeder tracing system similar to that already available in SPD's higher voltage measurement systems
Incident reporting	SPD is working towards the replacement of its current ICOND and Troublecall systems to provide for improved interfaces, one attribute of which will be to auto-populate its incident reports. An interim software release has been introduced, the benefits of which are aimed at improving the accuracy of reporting

Audit of Incident Reporting

Reporting Area	Audit Point	Main Findings
Ofgem's Template	Non reported incidents	None of the non-reported incidents sampled should have been reported in Ofgem's Template
	Issues identified	None
Higher Voltage Incidents	Number of unauditable incidents and spares used	None
	Main sources of reporting error	One incident contained a stage that should have been recorded as a reinterruption. Two other incidents contained minor input errors
	Issues identified	As above
LV Incidents	Number of unauditable incidents and spares used	None
	Main sources of reporting error	Minor errors in customer count and in start times
	Issues identified	As above

Reporting Area	Audit Point	Main Findings
Misclassified Voltage Level	Number of cases of misclassification of voltage level and spares used	None

Audit Results

These results were copy/pasted from the agreed final version of the auditing workbook at the end of the audit visit and have subsequently been confirmed after QA checking by the Consortium.

Restricted incident sample	Audit	MPAN accuracy	Combined accuracy	Threshold	Pass/fail
Overall CI Accuracy	99.98%	98.75%	98.73%	97%	Pass
Overall CML Accuracy	100.06%	98.75%	98.81%	97%	Pass
LV CI Accuracy	99.58%	98.76%	98.35%	92%	Pass
LV CML Accuracy	97.80%	98.76%	96.59%	92%	Pass

SPD passed the CI and CML overall and LV Stage 2 thresholds; therefore neither of the Stage 3 incident samples was required.

Audit of non-reportable incidents

Category	Number in sample	Number deemed non-reportable	Number deemed reportable
Higher Voltages	30	30	0
Low Voltage	96	96	0
Single Premises	4	4	0
Short Interruptions	70	70	0

Audit of incidents with clock-stopping restoration stages

Category	Number in sample	Number deemed correct	Number deemed incorrect
Higher Voltages	5	5	0
Low Voltage	15	15	0

Audit of telephony details returned to Ofgem

The visiting auditors examined SPD's records of customer calls made as part of three separate incidents at the higher voltage level and two low voltage incidents. In all cases, SPD demonstrated that the details of every caller who spoke to an agent were forwarded to Ofgem's consultants for potential follow-up as part of the survey of the DNOs' telephone response.

Additional comment from this year's audit
The visiting auditors are pleased to note SPD's inclusion of new team members in this year's IIS audit, thus spreading this aspect of its IIS expertise within its team

Recommendations for Reporting Improvements

Recommendations from last year's audit	DNO action taken	Audit opinion
Further enhance the internal auditing regime to reduce the number of errors still apparent at the LV level	SPD has extended its peer-group internal auditing regime whereby the control room and despatch team members cross-check incident reports on a weekly basis	The visiting auditors are pleased to note that SPD has enhanced its internal auditing regime and look forward to observing the ongoing improvements that this will bring
The visiting auditors look forward to seeing the results of SPD's impending new software systems	SPD has updated and replaced its GIS application which is currently undergoing trials with a view to going live during reporting year 2010/11	The visiting auditors look forward to SPDs enhanced GIS system

To:	Recommendation from this year's audit
DNO	The visiting auditors acknowledge that SPD uses good practice in restarting a clock-stopped period at its normal work start time of 08:00 but recommend that best practice is to restart the clock at the Guaranteed Standard time of 07:00
	The visiting auditors recommend that SPD's initiative to enhance its internal auditing / IIS specialists is given further emphasis to avoid a heavy reliance upon individual members of its team
Ofgem	Consider accepting as auditable evidence time stamped "confirmed/feeder numbers" of the number of customers on a feeder at the time of the incident.
	Considering the experience gained in the pilot audits of two successive reporting years and the ease with which the un-announced sample at SPD was audited, Ofgem should consider increasing the number of HV unannounced incidents at the other DNOs
	The inclusion of an audit check on a sample of clock-stopping incidents should be repeated during future IIS audits
	The time needed to correctly identify and to subsequently audit most clock-stopping incidents does not generally appear to be cost effective when viewed from the small impact its removal would have on a DNO's reported performance. Ofgem should consider reviewing the provision of clock-stopping with a view to restricting its use to all but the most onerous of circumstances such as that provided for under rig 2.64
	Consider the categories by which DNOs record non-reportable "incidents" with a view to introducing a more uniform system to give the visiting auditors more confidence that this aspect of the DNOs' reporting is being managed
	It is questioned if incidents of the type encountered on 27 May 2008 were considered during the formulation of the IIP / IIS rigs versions 1 to 5. It is suggested that Ofgem may wish to include such consideration in future consultations on the rigs and any proposed changes thereto
	Discussions during the audit of the higher voltage incidents suggested that control personnel are still using engineering experience to interpret the expression "or other abnormality" that is contained in rig 2.42 *'Incident start time'.* Ofgem may wish to consider simplifying the wording of rig 2.42 in line with the verbal guidance that has been issued during the audit visits of this and previous reporting years It is considered that the confusion is compounded by the expression "suspected abnormality" contained in rig 2.43 *'Report Received Time'*. It is unclear what purpose *'Report Received Time'* plays in IIS recording and reporting and Ofgem is invited to consider its removal in subsequent versions of the IIS rigs

Appendix K. Audit Report for the SPM Licensed Area

Introduction

Visit Details	
Dates of audit visit:	04 and 05 June 2009
Location of audit visit:	ScottishPower's Control Centre at Prenton
Visiting Auditors:	Thomas Johns (Ofgem) and Geoff Stott (BPI)
DNO Auditing Team:	Andy Dixon, Alyn Jones, Dafydd Lloyd-Jones, Lesley Shufflebotham and Val Ward

Audit of Measurement Systems

Measurement Area	Significant changes since last year
Interpretation of rigs v5	No changes have been made since last year's audit
MPAN systems	No changes have been made since last year's audit
Connectivity model	No changes have been made since last year's audit

Measurement Area	Planned future changes
MPAN systems	No future changes are planned
Connectivity model	SPM has begun to introduce a replacement GIS system that will have an LV feeder tracing system similar to that already available in SPM's higher voltage measurement systems
Incident reporting	SPM is working towards the replacement of its current ICOND and Troublecall systems to provide for improved interfaces, one attribute of which will be to auto-populate its incident reports. An interim software release has been introduced, the benefits of which are aimed at improving the accuracy of reporting

Audit of Incident Reporting

Reporting Area	Audit Point	Main Findings
Ofgem's Template	Non reported incidents	None of the non-reported incidents sampled should have been reported in Ofgem's Template
	Issues identified	None
Higher Voltage Incidents	Number of unauditable incidents and spares used	None
	Main sources of reporting error	One incident contained three stages that should have been recorded as reinterruptions. Two other incidents contained minor input errors
	Issues identified	As above
LV Incidents	Number of unauditable incidents and spares used	None
	Main sources of reporting error	Minor errors in customer count and in start times
	Issues identified	As above

Reporting Area	Audit Point	Main Findings
Misclassified Voltage Level	Number of cases of misclassification of voltage level and spares used	None

Audit Results

These results were copy/pasted from the agreed final version of the auditing workbook at the end of the audit visit and have subsequently been confirmed after QA checking by the Consortium.

Restricted incident sample	Audit	MPAN accuracy	Combined accuracy	Threshold	Pass/fail
Overall CI Accuracy	100.00%	99.40%	99.40%	97%	Pass
Overall CML Accuracy	99.99%	99.40%	99.39%	97%	Pass
LV CI Accuracy	98.70%	99.41%	98.12%	92%	Pass
LV CML Accuracy	99.85%	99.41%	99.26%	92%	Pass

SEPD passed the CI and CML overall and LV Stage 2 thresholds; therefore neither of the Stage 3 incident samples was required.

Audit of non-reportable incidents

Category	Number in sample	Number deemed non-reportable	Number deemed reportable
Higher Voltages	20	20	0
Low Voltage	80	80	0

Audit of incidents with clock-stopping restoration stages

Category	Number in sample	Number deemed correct	Number deemed incorrect
Low Voltage	15	15	0

Audit of telephony details returned to Ofgem

The visiting auditors examined SPM's records of customer calls made as part of three separate incidents at the higher voltage level and two low voltage incidents. With the exception of those callers with unconfirmed details, SPM demonstrated that the details of every caller who spoke to an agent were forwarded to Ofgem's consultants for potential follow-up as part of the survey of the DNOs' telephone response.

Additional comment from this year's audit
The visiting auditors are pleased to note SPM's inclusion of new team members in this year's IIS audit, thus spreading this aspect of its IIS expertise within its team

Recommendations for Reporting Improvements

Recommendations from last year's audit	DNO action taken	Audit opinion
Further enhance the internal auditing regime to reduce the number of errors still apparent at the LV level	SPM has extended its peer-group internal auditing regime whereby the control room and despatch team members cross-check incident reports on a weekly basis	The visiting auditors are pleased to note that SPM has enhanced its internal auditing regime and look forward to observing the ongoing improvements that this will bring
The visiting auditors look forward to seeing the results of SPM's impending new software systems	SPM has updated and replaced its GIS application which is currently undergoing trials with a view to going live during reporting year 2010/11	The visiting auditors look forward to SPM's enhanced GIS system

To:	Recommendation from this year's audit
DNO	The visiting auditors acknowledge that SPM uses good practice in restarting a clock-stopped period at its normal work start time of 08:00 but recommend that best practice is to restart the clock at the Guaranteed Standard time of 07:00
	The visiting auditors recommend that SPM's initiative to enhance its internal auditing / IIS specialists is given further emphasis to avoid a heavy reliance upon individual members of its team
Ofgem	Consider accepting as auditable evidence time stamped "confirmed/feeder numbers" of the number of customers on a feeder at the time of the incident
	Considering the experience gained in the pilot audits of two successive reporting years and the ease with which the un-announced sample at SPM was audited, Ofgem should consider increasing the number of HV unannounced incidents at the other DNOs
	The inclusion of an audit check on a sample of clock-stopping incidents should be repeated during future IIS audits
	The time needed to correctly identify and to subsequently audit most clock-stopping incidents does not generally appear to be cost effective when viewed from the small impact its removal would have on a DNO's reported performance. Ofgem should consider reviewing the provision of clock-stopping with a view to restricting its use to all but the most onerous of circumstances such as that provided for under rig 2.64
	Consider the categories by which DNOs record non-reportable "incidents" with a view to introducing a more uniform system to give the visiting auditors more confidence that this aspect of the DNOs' reporting is being managed
	It is questioned if incidents of the type encountered on 27 May 2008 were considered during the formulation of the IIP / IIS rigs versions 1 to 5. It is suggested that Ofgem may wish to include such consideration in future consultations on the rigs and any proposed changes thereto

Appendix L. Audit Report for the SSE - SEPD Licensed Area

Introduction

Visit Details	
Date of audit visit:	18 and 19 May 2009
Location of audit visit:	SSE's Control Centre, Portsmouth
Visiting Auditors:	James Hope (Ofgem) Thomas Johns (Ofgem) and Geoff Stott (BPI)
DNO Auditing Team:	John Blyth, Jayne Braybrook, Alan Broadbent, Chee Lee, Arshia Kadhim and Russell Swift

Audit of Measurement Systems

Measurement Area	Significant changes since last year
Interpretation of rigs v5	No changes have been made since last year's audit
MPAN systems	No changes have been made since last year's audit
Connectivity model	No changes have been made since last year's audit

Measurement Area	Planned future changes
MPAN systems	No future changes are planned
Connectivity model	No future changes are planned

Audit of Incident Reporting

Reporting Area	Audit Point	Main Findings
Ofgem's Template	Non reported incidents	None of the 100 non-reported 'incidents' should have been reported in Ofgem's template
	Issues identified	None
Higher Voltage Incidents	Number of unauditable incidents and spares used	One incident could not be audited due to an incomplete audit trail, a spare was used in its place
	Main sources of reporting error	Three incidents had input errors in either the start or end times of interruption stages
	Issues identified	As above
LV Incidents	Number of unauditable incidents and spares used	Three incidents were un-auditable due to incomplete audit trails, spares were used instead
	Main sources of reporting error	Several incidents had minor errors in customer count
	Issues identified	As above
Misclassified Voltage Level	Number of cases of misclassification of voltage level and spares used	None

Audit Results

These results have been copy/pasted from the agreed final version of the incident auditing workbook and have subsequently been confirmed after checking by the Consortium.

Restricted incident sample	Audit	MPAN accuracy	Combined accuracy	Threshold	Pass/fail
Overall CI Accuracy	99.99%	100.00%	99.98%	97%	Pass
Overall CML Accuracy	99.94%	100.00%	99.93%	97%	Pass
LV CI Accuracy	98.98%	99.98%	98.97%	92%	Pass
LV CML Accuracy	98.91%	99.98%	98.90%	92%	Pass

SEPD passed the CI and CML overall and LV Stage 2 thresholds; therefore neither of the Stage 3 incident samples was required.

Audit of non-reportable incidents

Category	Number in sample	Number deemed non-reportable	Number deemed reportable
Higher Voltages	1	1	0
Low Voltage	99	99	0

Audit of incidents with clock-stopping restoration stages

Category	Number in sample	Number deemed correct	Number deemed incorrect
Higher Voltages	5	5	0
Low Voltage	15	15	0

Audit of telephony details returned to Ofgem

The visiting auditors examined SEPD's records of customer calls made as part of three separate incidents at the higher voltage level and two low voltage incidents. SEPD demonstrated that the details of every caller who spoke to an agent were forwarded to Ofgem's consultants for potential follow-up as part of the survey of the DNOs' telephone response with the following exceptions: The details of two callers associated with an HV incident and one caller associated with an LV incident were not forwarded to Ofgem's consultants due to data capture errors.

Additional audit activity this year
During the audit of the incidents where clock-stopping had been used, the visiting auditors were pleased to note that, in the absence of any specific request from the customer, SEPD uses the Guaranteed Standard start time (07:00) as the end of the period of clock-stopping. The visiting auditors consider this approach to be best practice

Recommendations for Reporting Improvements

Recommendations from last year's audit	DNO action taken	Audit opinion
The visiting auditors were pleased to note the informative comments, cross-references and notes embedded in some of SSE's measurement systems and recommend that this is continued to further improve the incident audit trails	SEPD has continued to emphasise this aspect of its measurement and reporting procedures	The visiting auditors are pleased to note that SEPD is continuing to emphasise this aspect of its IIS processes, the results of which are evident in the incidents sampled this year
The visiting auditors were pleased to note the further strengthening of SSE's internal audit regime and recommend that this is continued	SEPD has further developed its internal auditing regime, building upon the approach outlined during last year's audit visit	The visiting auditors are pleased to note SEPD's approach, including the recently added internal audit check boxes within its SIMS system

To:	Recommendation from this year's audit
DNO	The visiting auditors are pleased to note SEPD's enhanced level of internal auditing and suggest that this continues
	The visiting auditors are pleased to note SEPD's enhanced process for checking input errors in the capturing of telephoned details as part of Ofgem's survey requirements and recommend that SEPD continues to develop its expertise in this regard
Ofgem	Considering the experience gained in the pilot audits of two successive reporting years and the ease with which the un-announced sample at SEPD was audited, Ofgem should consider increasing the number of HV unannounced incidents at the other DNOs
	The inclusion of an audit check on a sample of clock-stopping incidents should be repeated during future IIS audits
	The time needed to correctly identify and to subsequently audit most clock-stopping incidents does not generally appear to be cost effective when viewed from the small impact its removal would have on a DNO's reported performance. Ofgem should consider reviewing the provision of clock-stopping with a view to restricting its use to all but the most onerous of circumstances such as that provided for under rig 2.64
	Consider the categories by which DNOs record non-reportable "incidents" with a view to introducing a more uniform system to give the visiting auditors more confidence that this aspect of the DNOs' reporting is being managed
	It is questioned if incidents of the type encountered on 27 May 2008 were considered during the formulation of the IIP / IIS rigs versions 1 to 5. It is suggested that Ofgem may wish to include such consideration in future consultations on the rigs and any proposed changes thereto

Additional comment from this year's audit
The visiting auditors are pleased to note SEPD's continuance in developing its IIS reporting expertise by introducing young and enthusiastic people as newer members of its team. The visiting auditors are also pleased that SEPD included a new person in this year's audit of the higher-voltage incidents, thus spreading this aspect of its IIS expertise within its team

Appendix M. Audit Report for the SSE - SHEPD Licensed Area

Introduction

Visit Details	
Dates of audit visit:	18 and 19 May 2009
Location of audit visit:	SSE's Control Centre, Portsmouth
Visiting Auditors:	James Hope (Ofgem), Thomas Johns (Ofgem) and Geoff Stott (BPI)
DNO Auditing Team:	John Blyth, Alan Broadbent, David Colthart and Neil Sandison

Audit of Measurement Systems

Measurement Area	Significant changes since last year
Interpretation of rigs v5	No changes have been made since last year's audit
MPAN systems	No changes have been made since last year's audit
Connectivity model	No changes have been made since last year's audit

Measurement Area	Planned future changes
MPAN systems	No future changes are planned
Connectivity model	No future changes are planned

Audit of Incident Reporting

Reporting Area	Audit Point	Main Findings
Ofgem's Template	Non reported incidents	None of the 100 non-reported 'incidents' should have been reported in Ofgem's template
	Issues identified	None
Higher Voltage Incidents	Number of unauditable incidents and spares used	None
	Main sources of reporting error	Three incidents had inexplicable input errors in the start times of interruption stages
	Issues identified	As above
LV Incidents	Number of unauditable incidents and spares used	None
	Main sources of reporting error	Minor errors in customer count and in start times
	Issues identified	None
Misclassified Voltage Level	Number of cases of misclassification of voltage level and spares used	None

Audit Results

These results were copy/pasted from the agreed final version of the auditing workbook at the end of the audit visit and have subsequently been confirmed after QA checking by the Consortium.

Restricted incident sample	Audit	MPAN accuracy	Combined accuracy	Threshold	Pass/fail
Overall CI Accuracy	99.87%	99.99%	99.86%	97%	Pass
Overall CML Accuracy	99.81%	99.99%	99.80%	97%	Pass
LV CI Accuracy	98.61%	99.99%	98.60%	92%	Pass
LV CML Accuracy	99.63%	99.99%	99.62%	92%	Pass

SHEPD passed the CI and CML overall and LV Stage 2 thresholds; therefore neither of the Stage 3 incident samples was required.

Audit of non-reportable incidents

Category	Number in sample	Number deemed non-reportable	Number deemed reportable
Higher Voltages	2	2	0
Low Voltage	98	98	0

Audit of incidents with clock-stopping restoration stages

Category	Number in sample	Number deemed correct	Number deemed incorrect
Higher Voltages	5	5	0
Low Voltage	7	7	0

Audit of telephony details returned to Ofgem

The visiting auditors examined SHEPD's records of customer calls made as part of three separate incidents at the higher voltage level and two low voltage incidents. SHEPD demonstrated that the details of every caller who spoke to an agent were forwarded to Ofgem's consultants for potential follow-up as part of the survey of the DNOs' telephone response with the following exceptions: two callers associated with HV incidents and one caller associated with an LV incident did not have their telephone numbers collected due to data capture errors

Additional audit activity this year
During the audit of the incidents where clock-stopping had been used, the visiting auditors were pleased to note that, in the absence of any specific request from the customer, SHEPD uses the Guaranteed Standard start time (07:00) as the end of the period of clock-stopping. The visiting auditors consider this approach to be best practice

Recommendations for Reporting Improvements

Recommendations from last year's audit	DNO action taken	Audit opinion
The visiting auditors were pleased to note the informative comments, cross-references and notes embedded in some of SSE's measurement systems and recommend that this is continued to further improve the incident audit trails	SHEPD has continued to emphasise this aspect of its measurement and reporting procedures	The visiting auditors are pleased to note that SHEPD is continuing to emphasise this aspect of its IIS processes, the results of which are evident in the incidents sampled this year
The visiting auditors were pleased to note the further strengthening of SSE's internal audit regime and recommend that this is continued	SHEPD has further developed its internal auditing regime, building upon the approach outlined during last year's audit visit	The visiting auditors are pleased to note SHEPD's approach, including the recently added internal audit check boxes within its SIMS system

To:	Recommendation from this year's audit
DNO	The visiting auditors are pleased to note SHEPD's enhanced level of internal auditing and suggest that this continues
	The visiting auditors are pleased to note SHEPD's enhanced process for checking input errors in the capturing of telephoned details as part of Ofgem's survey requirements and recommend that SHEPD continues to develop its expertise in this regard
Ofgem	Considering the experience gained in the pilot audits of two successive reporting years and the ease with which the un-announced sample at SHEPD was audited, Ofgem should consider increasing the number of HV unannounced incidents at the other DNOs
	The inclusion of an audit check on a sample of clock-stopping incidents should be repeated during future IIS audits
	The time needed to correctly identify and to subsequently audit most clock-stopping incidents does not generally appear to be cost effective when viewed from the small impact its removal would have on a DNO's reported performance. Ofgem should consider reviewing the provision of clock-stopping with a view to restricting its use to all but the most onerous of circumstances such as that provided for under rig 2.64
	Consider the categories by which DNOs record non-reportable "incidents" with a view to introducing a more uniform system to give the visiting auditors more confidence that this aspect of the DNOs' reporting is being managed
	It is questioned if incidents of the type encountered on 27 May 2008 were considered during the formulation of the IIP / IIS rigs versions 1 to 5. It is suggested that Ofgem may wish to include such consideration in future consultations on the rigs and any proposed changes thereto

Additional comment from this year's audit
The visiting auditors were pleased to note that the retirement of SHEPD's deputy Network Management Centre Manager during reporting year 2008/09 has resulted in no diminution of its IIS reporting activities, thanks to the early identification and training of people to take over the role, coupled with the associated hand-over period

Appendix N. Audit Report for the WPD - South Wales Licensed Area

Introduction

Visit Details	
Dates of audit visit:	07 and 08 April 2009
Location of audit visit:	WPD's Control Centre, Cardiff
Visiting Auditors:	James Hope (Ofgem) and Geoff Stott (BPI)
DNO Auditing Team:	Lloyd Bridges, Dave Crocker, Carolyn Hinchey and Alison Sleightholm

Audit of Measurement Systems

Measurement Area	Significant changes since last year
Interpretation of rigs v5	No changes have been made since last year's audit
MPAN systems	No changes have been made since last year's audit
Connectivity model	No changes have been made since last year's audit

Measurement Area	Planned future changes
MPAN systems	No future changes are planned
Connectivity model	No future changes are planned
Control System	WPD is planning to migrate to ENMAC version 4 during the reporting year 2009/10, cutting over from version 3 using a fully auditable approach

Audit of Incident Reporting

Reporting Area	Audit Point	Main Findings
Ofgem's Template	Non reported incidents	None of the non-reported incidents sampled should have been reported in Ofgem's Template
	Issues identified	None
Higher Voltage Incidents	Number of unauditable incidents and spares used	None
	Main sources of reporting error	None
	Issues identified	The audit sample was 100% accurate
LV Incidents	Number of unauditable incidents and spares used	Two incidents were unauditable. One was due to network changes since the incident and the other was due to the lack of an auditable interruption time. Spares were used instead
	Main sources of reporting error	Minor errors in customer count and some discrepancies in duration times
	Issues identified	None
Misclassified Voltage Level	Number of cases of misclassification of voltage level and spares used	None

Audit Results

These results were copy/pasted from the agreed final version of the auditing workbook at the end of the audit visit and have subsequently been confirmed after QA checking by the Consortium.

Restricted incident sample	Audit	MPAN accuracy	Combined accuracy	Threshold	Pass/fail
Overall CI Accuracy	100.00%	99.99%	99.99%	97%	Pass
Overall CML Accuracy	99.97%	99.99%	99.96%	97%	Pass
LV CI Accuracy	99.80%	100.00%	99.80%	92%	Pass
LV CML Accuracy	99.58%	100.00%	99.58%	92%	Pass

WPD South Wales passed the CI and CML overall and LV Stage 2 thresholds; therefore neither of the Stage 3 incident samples was required.

Audit of non-reportable incidents

Category	Number in sample	Number deemed non-reportable	Number deemed reportable
Higher Voltages	20	20	0
Low Voltage	20	20	0
Pre-arranged	20	20	0
Single Premises	20	20	0
Short Interruptions	20	20	0

Audit of incidents with clock-stopping restoration stages

Category	Number in sample	Number deemed correct	Number deemed incorrect
Higher Voltages	5	5	0
Low Voltage	15	15	0

Audit of telephony details returned to Ofgem

The visiting auditors examined WPD South Wales' records of customer calls made as part of three separate incidents at the higher voltage level and two low voltage incidents. In all cases, WPD demonstrated that the details of every caller who spoke to an agent were forwarded to Ofgem's consultants for potential follow-up as part of the survey of the DNOs' telephone response. Those calls logged in WPD's trouble call system that were not passed to Ofgem's consultant were shown to be ones that had been dealt with by WPD's automated messaging system.

Recommendations for Reporting Improvements

Recommendations from last year's audit	DNO action taken	Audit opinion
The visiting auditors were pleased to note the detail of informative comments, cross-references and notes embedded in WPD's measurement systems and recommend that this is further reinforced to further improve the incident audit trails	WPD has reinforced this message as part of its ongoing training programme	The visiting auditors are pleased to note that WPD's continuing efforts are readily apparent in the helpful comments embedded entered into the company's various measurement systems. These are most useful in aiding the understanding of an incident and are an essential element of a good audit trail
The visiting auditors were pleased to note the further strengthening of WPD's internal audit regime and recommend that this is given on-going emphasis	WPD has continued with its initiative in this aspect of its reporting processes	The visiting auditors are delighted to note the efficacy of WPD's initiative in the excellent audit results obtained at the higher voltage levels

To:	Recommendation from this year's audit
DNO	The strengthening of WPD's internal audit regime is bringing obvious benefits to its reported performance at the higher voltage levels and the visiting auditors suggest that WPD considers a similar approach in a pilot office for its reporting at the LV level
	The visiting auditors note WPD's proposed change to ENMAC version 4 and are pleased to note that the transition will be subject to a fully auditable approach. It is hoped that the change will not adversely affect WPD's accuracy of reporting
	The visiting auditors are pleased to note that WPD has extended the use of its hand-held data capture devices to more of its operational units and suggest that WPD monitors the ongoing need for refresher training so as to eliminate the manual corrections that are evident within sample of audited incidents
Ofgem	Given that this is the second year in which WPD's IIS audit was totally unannounced, Ofgem should consider introducing this approach in the other DNOs
	The inclusion of an audit check on a sample of clock-stopping incidents should be repeated during future IIS audits
DNO	The time needed to correctly identify and to subsequently audit most clock-stopping incidents does not generally appear to be cost effective when viewed from the small impact its removal would have on a DNO's reported performance. Ofgem should consider reviewing the provision of clock-stopping with a view to restricting its use to all but the most onerous of circumstances such as that provided for under rig 2.64

Appendix O. Audit Report for the WPD - South West Licensed Area

Introduction

Visit Details	
Dates of audit visit:	07 and 08 April 2009
Location of audit visit:	WPD's Control Centre, Cardiff
Visiting Auditors:	James Hope (Ofgem) and Geoff Stott (BPI)
DNO Auditing Team:	Lloyd Bridges, Dave Crocker, Carolyn Hinchey and Alison Sleightholm

Audit of Measurement Systems

Measurement Area	Significant changes since last year
Interpretation of rigs v5	No changes have been made since last year's audit
MPAN systems	No changes have been made since last year's audit
Connectivity model	No changes have been made since last year's audit

Measurement Area	Planned future changes
MPAN systems	No future changes are planned
Connectivity model	No future changes are planned
Control System	WPD is planning to migrate to ENMAC version 4 during the reporting year 2009/10, cutting over from version 3 using a fully auditable approach

Audit of Incident Reporting

Reporting Area	Audit Point	Main Findings
Ofgem's Template	Non reported incidents	None of the non-reported incidents sampled should have been reported in Ofgem's Template
	Issues identified	None
Higher Voltage Incidents	Number of unauditable incidents and spares used	None
	Main sources of reporting error	None
	Issues identified	The audit sample was 100% accurate
LV Incidents	Number of unauditable incidents and spares used	Two incidents were unauditable. Both were due to the lack of an auditable restoration time. Spares were used instead
	Main sources of reporting error	Errors in customer count and one incident with a missing re-interruption stage
	Issues identified	None
Misclassified Voltage Level	Number of cases of misclassification of voltage level and spares used	None

Audit Results

These results have been copy/pasted from the agreed final version of the incident auditing workbook and have subsequently been confirmed after checking by the Consortium.

Restricted incident sample	Audit	MPAN accuracy	Combined accuracy	Threshold	Pass/fail
Overall CI Accuracy	100.02%	99.99%	99.99%	97%	Pass
Overall CML Accuracy	99.96%	99.99%	99.95%	97%	Pass
LV CI Accuracy	100.54%	99.99%	99.46%	92%	Pass
LV CML Accuracy	99.66%	99.99%	99.65%	92%	Pass

WPD South West passed the CI and CML overall and LV Stage 2 thresholds; therefore neither of the Stage 3 incident samples was required.

Audit of non-reportable incidents

Category	Number in sample	Number deemed non-reportable	Number deemed reportable
Higher Voltages	20	20	0
Low Voltage	20	20	0
Pre-arranged	20	20	0
Single Premises	20	20	0
Short Interruptions	20	20	0

Audit of incidents with clock-stopping restoration stages

Category	Number in sample	Number deemed correct	Number deemed incorrect
Higher Voltages	3	3	0
Low Voltage	17	17	0

Audit of telephony details returned to Ofgem

The visiting auditors examined WPD South West's records of customer calls made as part of three separate incidents at the higher voltage level and two low voltage incidents. In all cases, WPD demonstrated that the details of every caller who spoke to an agent were forwarded to Ofgem's consultants for potential follow-up as part of the survey of the DNOs' telephone response. Those calls logged in WPD's trouble call system that were not passed to Ofgem's consultant were shown to be ones that had been dealt with by WPD's automated messaging system.

Recommendations for Reporting Improvements

Recommendations from last year's audit	DNO action taken	Audit opinion
The visiting auditors were pleased to note the detail of informative comments, cross-references and notes embedded in WPD's measurement systems and recommend that this is further reinforced to further improve the incident audit trails	WPD has reinforced this message as part of its ongoing training programme	The visiting auditors are pleased to note that WPD's continuing efforts are readily apparent in the helpful comments embedded entered into the company's various measurement systems. These are most useful in aiding the understanding of an incident and are an essential element of a good audit trail
The visiting auditors were pleased to note the further strengthening of WPD's internal audit regime and recommend that this is given on-going emphasis	WPD has continued with its initiative in this aspect of its reporting processes	The visiting auditors are delighted to note the efficacy of WPD's initiative in the excellent audit results obtained at the higher voltage levels

To:	Recommendation from this year's audit
DNO	The strengthening of WPD's internal audit regime is bringing obvious benefits to its reported performance at the higher voltage levels and the visiting auditors suggest that WPD considers a similar approach in a pilot office for its reporting at the LV level
	The visiting auditors note WPD's proposed change to ENMAC version 4 and are pleased to note that the transition will be subject to a fully auditable approach. It is hoped that the change will not adversely affect WPD's accuracy of reporting
	The visiting auditors are pleased to note that WPD has extended the use of its hand-held data capture devices to more of its operational units and suggest that WPD monitors the ongoing need for refresher training so as to eliminate the manual corrections that are evident within sample of audited incidents
Ofgem	Given that this is the second year in which WPD's IIS audit was totally unannounced, Ofgem should consider introducing this approach in the other DNOs
	The inclusion of an audit check on a sample of clock-stopping incidents should be repeated during future IIS audits
	The time needed to correctly identify and to subsequently audit most clock-stopping incidents does not generally appear to be cost effective when viewed from the small impact its removal would have on a DNO's reported performance. Ofgem should consider reviewing the provision of clock-stopping with a view to restricting its use to all but the most onerous of circumstances such as that provided for under rig 2.64