

# Compliance plan for ARC Innovations MEP – 2020

Participants to Provide Accurate Information		
Non-compliance	Description	
<p>Audit Ref: 2.5</p> <p>With: Clause 11.2 and Clause 10.6</p> <p>From: 01-Mar-19</p> <p>To: 13-Mar-20</p>	<p>Registry not updated as soon as practicable when certification is cancelled.</p> <p>Potential impact: Medium</p> <p>Actual impact: Low</p> <p>Audit history: None</p> <p>Controls: Moderate</p> <p>Breach risk rating: 2</p>	
Audit risk rating	Rationale for audit risk rating	
<b>Low</b>	<p>Controls are recorded as moderate because there is room to improve processes.</p> <p>The impact on other participants is minor; therefore, the audit risk rating is low.</p> <p>This non-compliance does not yet consider the issue of data storage devices being “not fit for purpose”, because this has only been identified recently.</p>	
Actions taken to resolve the issue		Completion date
<p>Excluding the two main issues raised in this report that we have only just learned of and are currently investigating, there was a small number of ICPs identified where registry updates were not on time. The certifications for the meters at these ICPs will be cancelled and the registry will immediately be updated accordingly.</p>		30/04/20
Preventative actions taken to ensure no further issues will occur		Completion date
<p>Vector Metering (VM) will regularly be downloading the new reports made available from the Electricity Authority's (the Authority) website. Having access to these reports will allow us to easily identify errors and correct those errors in a timely manner.</p>		In place
		Investigating

Metering Installation Design & Accuracy		
Non-compliance	Description	
<p>Audit Ref: 4.3</p> <p>With: Clause 4(1) of Schedule 10.7</p> <p>From: 01-Nov-14</p> <p>To: 08-Mar-20</p>	<p>The design of the metering installation (including data storage device and interrogation system) does not ensure the sum of the measured error and the smallest possible increment of the energy value of the raw meter data does not exceed 2.5%.</p> <p>Potential impact: High</p> <p>Actual impact: High</p> <p>Audit history: None</p> <p>Controls: None</p> <p>Breach risk rating: 12</p>	
Audit risk rating	Rationale for audit risk rating	
High	<p>The design does not comply with the Code and there does not appear to be processes in place to identify this sort of issue.</p> <p>There is a moderate impact on settlement accuracy because HHR intervals are not accurate. The impact on other participants is high, because cancellation of certification causes a major problem for HHR only traders. 6,650 ICPs are with HHR only traders.</p>	
Actions taken to resolve the issue		Remedial action status

<p>VM was surprised with the above findings, given the meters were approved for HHR certification in 2014 and have been found to be compliant in successive audits. VM have self breached to the Authority to get their understanding and decision on this matter.</p> <p>VM disputes the finding that there are no processes in place to identify this sort of issue.</p> <p>VM followed the required steps prior to certifying these meter types as HHR.</p> <ul style="list-style-type: none"> <li>○ The type test reports from an IANZ certified laboratory indicated we have <u>'Complied' with the requirements.</u></li> <li>○ The material change report from an Authority approved auditor has also indicated we have <u>'Complied' with the requirements.</u></li> <li>○ The Authority granted exemption to allow ATHs to change certification from NHH to HHR. This exemption was Gazetted 28/08/2014.</li> <li>○ Arc has undergone annual audits by the Authority since 2014 and has complied each time on this issue (5 years).</li> <li>○ Last year we raised a self-breach for this issue around our Cat 2 meters as it was identified that when the single decimal place was multiplied by 100 (500/5 CTs), errors occur. The Authority decided to close this alleged breach, citing 'negligible impact'. Any link to Cat 1 metering suffering from the same issue was not identified by VM or any other participant.</li> </ul> <p>We believe this issue should not have a significant impact from a customer or market settlement perspective. Any inaccuracy of half hourly intervals identified in this audit would be greatest at low consumption and improve as consumption rises.</p> <p>The total energy consumption measured is not impacted. The issue only impacts which interval the energy consumption is reported in. For context, 0.1kWh of energy equates to approximately \$0.03 cents</p>	Ongoing	Identified
<p><b>Preventative actions taken to ensure no further issues will occur</b></p>	<p><b>Completion date</b></p>	
<p>VM began displacing Arc metering with EDM1 smart meters two years ago and will launch a full programme this year to displace all remaining Arc metering.</p>	Ongoing	

Changes to Registry Records		
Non-compliance	Description	
<p>Audit Ref: 4.10</p> <p>With: Clause 3 of Schedule 11.4</p> <p>From: 01-Mar-19</p> <p>To: 20-Jan-20</p>	<p>Some records updated on the registry later than 10 business days.</p> <p>Potential impact: Low</p> <p>Actual impact: Low</p> <p>Audit history: Multiple times</p> <p>Controls: Moderate</p> <p>Breach risk rating: 2</p>	
Audit risk rating	Rationale for audit risk rating	
<b>Low</b>	<p>I have recorded the controls as moderate in this area because they reduce risk most of the time but there is still room for improvement.</p> <p>The impact on settlement and participants is minor; therefore, the audit risk rating is low.</p>	
Actions taken to resolve the issue		Completion date
The ARCM updates shown above are backdated corrections, hence the large average notification days.		In place
Preventative actions taken to ensure no further issues will occur		Completion date
The 10-business day delay is a factor of back dating corrections and not due to the MEP updating late. VM does not install Arc legacy metering under any circumstances and has not done so for a couple of years.		In place
		Identified

Accurate and Complete Records			
Non-compliance	Description		
Audit Ref: 5.1 With: Clause 4(1)(b)(i)&(v) of Schedule 10.6 From: 01-Jul-18 To: 31-Mar-19	Missing fields in one certification report. 3 incorrect certification reports. Potential impact: Medium Actual impact: Low Audit history: None Controls: Moderate Breach risk rating: 2		
Audit risk rating	Rationale for audit risk rating		
<b>Low</b>	I have recorded the controls as moderate because there is room for improvement. There is a minor impact on other participants; therefore, the audit risk rating is low.		
Actions taken to resolve the issue		Completion date	Remedial action status
Certification of the above ICPs will be cancelled. We are investigating why these ICPs were showing as re-certified when they did not need to be and actually were not.		30/05/2020	Identified
<b>Preventative actions taken to ensure no further issues will occur</b>		Completion date	
Action depends on the outcome of the above investigation.		30/05/2020	

Provision of Registry Information			
Non-compliance	Description		
<p>Audit Ref: 6.2</p> <p>With: Clause 7 (1), (2) and (3) of Schedule 11.4</p> <p>From: 01-Mar-19</p> <p>To: 20-Jan-20</p>	<p>Some registry records incomplete or incorrect.</p> <p>Potential impact: Medium</p> <p>Actual impact: Low</p> <p>Audit history: Multiple times</p> <p>Controls: Strong</p> <p>Breach risk rating: 1</p>		
Audit risk rating	Rationale for audit risk rating		
<b>Low</b>	<p>I have recorded the controls as strong in this area. The number of discrepancies is very small.</p> <p>Very few of the discrepancies have an impact on participants, customers or settlement. The only relevant ones in this regard are tariff related and there were only a small number. The audit risk rating is low.</p>		
Actions taken to resolve the issue		Completion date	Remedial action status
<p>VM believes the 14,713 ICPs with maximum interrogation cycle of one day is correct and is taken directly from the type test report for the G2 meter type. These are interrogated twice daily and have sufficient memory for 40 days. VM disputes this as a non-compliance.</p> <p>The control device of 1,386 metering installations have not been populated. The majority are old legacy meters in the Scanpower Network. These were previous interim certified installations that were gifted to Arc without the control device information. We have since retrieved some LCD information from Scanpower for some sites but have no information on these ones.</p>		Ongoing	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
We continue to address these issues, and where possible will update the registry.		Ongoing	

Cancellation of Certification		
Non-compliance	Description	
<p>Audit Ref: 6.4</p> <p>With: Clause 20 of Schedule 10.7</p> <p>From: 01-Mar-19</p> <p>To: 09-Mar-20</p>	<p>Certification cancelled and registry not updated for:</p> <p>2x 3 phase installation with single phase meter and compensation factor of 3</p> <p>6x Category 2 installations not inspected at 10 years</p> <p>28x Time errors of more than 60 seconds for more than 20 days in a month</p> <p>31x Time errors more than 1,000 seconds (900 seconds is one half hour interval)</p> <p>16,692 HHR settled installations where the HHR data is inaccurate per interval by more than 2.5% due to the data storage devices only having one decimal place.</p> <p>14,633 Generation 2 installations where the data storage devices failed type testing.</p> <p>Potential impact: High</p> <p>Actual impact: High</p> <p>Audit history: Multiple times</p> <p>Controls: Weak</p> <p>Breach risk rating: 9</p>	
Audit risk rating	Rationale for audit risk rating	
High	<p>I have recorded the controls as weak in this area because in most cases, the registry is not populated with the correct expiry date when certification is cancelled.</p> <p>Most of the issues found have a large impact on other participants and on settlement. The audit risk rating is high.</p>	
Actions taken to resolve the issue		Completion date
<p>The certification for two larger groups totalling over 30,000 ICPs have not been cancelled as we only learned of these issues during the audit. We have self breached on these and are awaiting response from the Authority on next steps. If the Authority informs us that cancellation is required, we will comply.</p> <p>The certification for 2x 3 phase installations with single phase meter and compensation factor of 3 have been cancelled.</p> <p>The cancellation of certification for 6x Category 2 installations that have not been inspected for 10 years is under way. The certification of four more Cat 2 ICPs certified for 15 years will be cancelled prior to year 10.</p> <p>The cancellation of certification is under way for 28x installations with time errors of more than 60 seconds for more than 20 days in a month, and 31x installations with time errors of more than 1,000 seconds (900 seconds is one half hour interval). .</p>		<p>30/05/2020 (excluding large groups which are under investigation).</p>
		Identified

Preventative actions taken to ensure no further issues will occur	Completion date	
We recently improved our time sync process to include more robust scrutiny around meters that drift consistently. This will be reviewed by our tech team and the meters will be upgraded, as necessary.	In place	

Certification and Maintenance			
Non-compliance	Description		
<p>Audit Ref: 7.1</p> <p>With: Clause 10.38 (a), clause 1 and clause 15 of Schedule 10.7</p> <p>From: 01-Mar-19</p> <p>To: 09-Mar-20</p>	<p>2,090 installations with expired certification.</p> <p>Approx. 30,000 installations with cancelled certification.</p> <p>Potential impact: High</p> <p>Actual impact: High</p> <p>Audit history: Multiple times</p> <p>Controls: Weak</p> <p>Breach risk rating: 9</p>		
Audit risk rating	Rationale for audit risk rating		
High	<p>I have recorded the controls as weak in this area because certification has been expired for a number of years for some ICPs and because some of the expired installations were fully certified at one point.</p> <p>The impact on settlement is recorded as high because of the increased likelihood of failure or inaccuracy for metering installations with expired certification, therefore the audit risk rating is high. The issues leading to cancelled certification all have an impact on settlement accuracy.</p>		
Actions taken to resolve the issue		Completion date	Remedial action status
<p>Certifications for the larger group totalling over 30,000 ICPs have not been cancelled as we only learned of these issues during the audit. We have self breached on these and are awaiting response from the Authority on next steps. If the Authority informs us that cancellation is required, we will comply.</p> <p>We have started an investigation to identify why previously certified Cat 1 &amp; Cat 2 metering is not re-certified prior to expiry.</p> <p>Majority of the above cases (excluding the over 30,000 ICPs) are old interim certified sites and are being managed as a separate project.</p>		30/05/2020 for investigation and corrections	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	



<p>We are managing the old interim certified meters', but these are proving difficult to reach and/or upgrade.</p> <p>The above investigation will determine what steps we need to take to ensure there is no recurrence of this issue.</p>	Ongoing	
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Certification Tests		
Non-compliance	Description	
<p>Audit Ref: 7.2</p> <p>With: Clause 10.38(b)</p> <p>From: 01-Mar-19</p> <p>To: 09-Mar-20</p>	<p>Appropriate testing not conducted for Generation 2 data storage devices.</p> <p>Test results not recorded for one Category 1 installation.</p> <p>Potential impact: Medium</p> <p>Actual impact: Low</p> <p>Audit history: None</p> <p>Controls: Moderate</p> <p>Breach risk rating: 2</p>	
Audit risk rating	Rationale for audit risk rating	
Low	<p>The controls are recorded as moderate. They need to be strengthened to achieve full compliance.</p> <p>The impact on settlement and participants is minor; therefore, the audit risk rating is low.</p>	
Actions taken to resolve the issue		Completion date
<p>VM disputes the alleged non-compliance with this clause, given that:</p> <ul style="list-style-type: none"> <li>Type test reports from an IANZ certified laboratory indicated we have <u>'Complied'</u>.</li> <li>Material change report from an Authority approved auditor indicated we have <u>'Complied'</u>.</li> <li>Arc has undergone annual EA audits since 2014 and has complied each time on this issue (5 years).</li> </ul> <p>This report has identified that the initial type test report had an error, however, there was no reason at the time for Arc to question why the laboratory reported the controller as 'Compliant'. This is why we contract IANZ accredited laboratories for this work.</p> <p>On the other issue where VEMS and Wells ATHs have not recorded test results for four metering installations. We accept the finding of non-compliance and will address this issue by cancelling the certifications for, and upgrading, these meters.</p>		30/05/2020
Preventative actions taken to ensure no further issues will occur		Completion date
		Disputed

VM began displacing Arc metering with EDMl smart meters two years ago and will launch a full programme this year to displace all remaining Arc metering.	Ongoing	
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Active and Reactive Capability		
Non-compliance	Description	
Audit Ref: 7.3 With: Clause 10.37(1) and 10.37(2)(a) From: 01-Mar-19 To: 09-Mar-20	Generation 1 Category 2 meters not capable of measuring and recording reactive energy Potential impact: None Actual impact: None Audit history: None Controls: Moderate Breach risk rating: 2	
Audit risk rating	Rationale for audit risk rating	
Low	The controls are recorded as moderate because they mitigate risk most of the time but there is room for improvement. There doesn't appear to be any impact, therefore the audit risk rating is low.	
Actions taken to resolve the issue		Completion date
VM accepts this finding and is already working to displace these meters with EDM I smart meters capable of complying with this clause.		30/10/2020
Preventative actions taken to ensure no further issues will occur		Completion date
VM began actively displacing Arc Cat 2 metering with EDM I smart meters last year and is halfway through this process. We will prioritize further upgrades this year as well as launch a full programme to displace all remaining Arc metering.		30/10/2020
		Identified

Timekeeping Requirements		
Non-compliance	Description	
Audit Ref: 7.10 With: Clause 23 of Schedule 10.7 From: 01-Mar-19 To: 09-Mar-20	24 meters with timeclocks not checked every 12 months. Potential impact: Low Actual impact: Low Audit history: None Controls: None Breach risk rating: 5	
Audit risk rating	Rationale for audit risk rating	
Low	There isn't a process in place to check the time setting on these meters. The impact on settlement and participants could be minor; therefore, the audit risk rating is low.	
Actions taken to resolve the issue		Completion date
VM accepts this non-compliance. We are unable to correct the time clocks on these meters so will identify the 24 meters and upgrade each to AMI metering.		30/06/2020
Preventative actions taken to ensure no further issues will occur		Completion date
VM is unable to correct the time clocks on these meters. We will upgrade the meters to AMI.		30/06/2020
		Identified

Interim Certification		
Non-compliance	Description	
<p>Audit Ref: 7.19</p> <p>With: Clause 18 of Schedule 10.7</p> <p>From: 01-Apr-15</p> <p>To: 11-Apr-19</p>	<p>1,942 ICPs with expired interim certification.</p> <p>Potential impact: High</p> <p>Actual impact: Medium</p> <p>Audit history: Multiple times</p> <p>Controls: Moderate</p> <p>Breach risk rating: 4</p>	
Audit risk rating	Rationale for audit risk rating	
<b>Medium</b>	<p>I have recorded the controls as moderate in this area because certification has been expired for four years for these ICPs.</p> <p>The impact on settlement is recorded as moderate because of the increased likelihood of failure or inaccuracy for metering installations with expired certification, therefore the audit risk rating is medium.</p>	
Actions taken to resolve the issue		Completion date
<p>VM has a programme to upgrade all expired interim certified metering including the ones stated above, however, we are finding many hurdles which we share with the EA on a regular basis. As we overcome these hurdles, these numbers will decline. Our aim is to eliminate all of these meters.</p>		Ongoing
Preventative actions taken to ensure no further issues will occur		Completion date
<p>VM has a programme to upgrade all expired interim certified metering including the ones identified above. Once completed, this will address this non-compliance.</p>		Ongoing
		Identified

Category 2 to 5 Inspections		
Non-compliance	Description	
Audit Ref: 8.2 With: Clause 46(1) of Schedule 10.7  From: 01-Jul-18 To: 31-Mar-19	Inspections not conducted within the allowable window for six installations. Potential impact: Medium Actual impact: Low Audit history: None Controls: Moderate Breach risk rating: 2	
Audit risk rating	Rationale for audit risk rating	
<b>Low</b>	The controls are recorded as moderate because they mitigate risk most of the time but there is room for improvement.  The impact on settlement and participants could be minor; therefore, the audit risk rating is low.	
Actions taken to resolve the issue		Completion date
Cancellation is under way for 6x Category 2 installations not inspected for 10 years. There are four more certifications for Cat 2 ICPs for 15 years that we will cancel prior to year 10. VM does not carry out cat 2 inspections for the mass market.		30/04/2020
Preventative actions taken to ensure no further issues will occur		Completion date
All Cat 2 installations with a 15-year certification will be cancelled. Once upgraded and recertified, they will have a 10-year certification and will be upgraded. This will address this non-compliance as no further Arc Cat 2 meters will have 15-year certifications.		30/04/2020
		Identified

Electronic Interrogation of Metering Installations		
Non-compliance	Description	
Audit Ref: 10.5 With: Clause 8 of Schedule 10.6 From: 01-Mar-19 To: 09-Mar-20	524 ICPs not read during the maximum interrogation cycle. Potential impact: High Actual impact: Medium Audit history: None Controls: Moderate Breach risk rating: 4	
Audit risk rating	Rationale for audit risk rating	
<b>Medium</b>	The controls are recorded as moderate because they mitigate risk most of the time but there is room for improvement. The impact on settlement and participants is moderate, particularly the AMI only retailers, where estimates need to be performed if data is not provided. The audit risk rating is medium.	
Actions taken to resolve the issue		Completion date
VM accepts this non-compliance and has recently automated its manual AMI flag process. The AMI flag should now be more accurate and reflect the actual communications status of the installation. We will recheck the 524 ICPs and ensure the AMI flag is set to 'N' if the installations are not communicating.		30/05/2020
Preventative actions taken to ensure no further issues will occur		Completion date
We have a new automated system in place.		In place
		Identified

Time Errors for Metering Installations		
Non-compliance	Description	
<p>Audit Ref: 10.7</p> <p>With: Clause 8(4) of Schedule 10.6</p> <p>From: 01-Jan-20</p> <p>To: 31-Jan-20</p>	<p>Clock errors greater than the threshold for 2,613 ICPs.</p> <p>Potential impact: Low</p> <p>Actual impact: Low</p> <p>Audit history: Once</p> <p>Controls: Moderate</p> <p>Breach risk rating: 2</p>	
Audit risk rating	Rationale for audit risk rating	
<b>Low</b>	<p>The controls are recorded as moderate because sound reporting is in place and resolution processes are in place.</p> <p>48 of the errors were great than a trading period but this is a small percentage of the overall quantity. The audit risk rating is low.</p>	
Actions taken to resolve the issue		Completion date
<p>Clock errors outside the 'Code' limits are corrected during the interrogation and reported to the Retailer. VM acknowledges this technical non-compliance. Our internal thresh-holds are set lower than the limits stated in the Code. i.e. +/- 5 Secs Cat 2 &amp; +/- 15 Secs Cat 1. When they do exceed repeatedly or excessively, they are investigated by our technical team and are either manually corrected or replaced. We will change our follow up process to shorten the time before an investigation is launched for those repeatedly exceeding time drift limits.</p>		30/05/2020
Preventative actions taken to ensure no further issues will occur		Completion date
<p>Our time correction is predominantly automated. We will update our manual process to capture those repeatedly exceeding time limits. We are also about to embark on a full fleet replacement programme which will address this non-compliance.</p>		Ongoing
		Identified