



## **ACCREDITATION SCHEME FOR MANAGEMENT SYSTEMS CERTIFICATION BODIES**

### **CT 11 SAC CRITERIA FOR CERTIFICATION BODIES (WATER EFFICIENCY MANAGEMENT SYSTEMS)**

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## 1 Introduction

This document specifies the supplementary SAC criteria for certification bodies on Water Efficiency Management System (WEMS) certification to SS 577 *Water Efficiency Management Systems – Requirements with Guidance for Use*, and is to be used with ISO/IEC 17021 and the applicable IAF Mandatory Documents.

## 2 Criteria for WEMS Auditors

2.1 A certification body shall appoint qualified auditors to conduct WEMS audits. Auditors shall meet the criteria as defined in Annex 1 of this document.

## 3 Duration of WEMS Audits

3.1 For initial audit, the audit duration (Stage 1 + Stage 2) shall be as indicated in Table 1.

**Table 1 – Initial Audit Duration**

<b>Level of Complexity</b>	<b>Example of Industry Sectors</b>	<b>*Minimum Audit duration (Stage 1 + Stage 2) Man-day</b>
High complexity of water use	<ul style="list-style-type: none"><li>• Wafer Fabrication</li><li>• Refining &amp; Petrochemical</li><li>• Power Generation</li></ul>	6
Moderate complexity of water use	<ul style="list-style-type: none"><li>• Chemical &amp; Pharmaceutical</li><li>• Food &amp; Beverages</li><li>• Shipyard</li><li>• Large premises (eg. Ports, Airports, Hospitals, Tertiary Institutions, etc)</li><li>• Other Manufacturing</li></ul>	4
Low complexity of water use	Others such as <ul style="list-style-type: none"><li>• Commercial Offices</li><li>• Shopping Centres</li><li>• Hotels</li><li>• Schools</li><li>• Industrial Buildings</li><li>• Laundry</li><li>• District Cooling Plants</li></ul>	3

*\* any reduction shall be justified.*

- 3.2 Surveillance audit duration = 1/3 of initial audit duration
- 3.3 Recertification audit duration = 2/3 of initial audit duration

#### **4 Performance Evaluation – Measurement**

- 4.1 As per Clause 9.1 of SS 577, the organisation shall define and periodically review its measurement needs. The organisation shall ensure that the equipment used in monitoring and measurement of key characteristics provides data which are accurate and repeatable.
- 4.2 In order to show compliance with the performance evaluation in SS 577 for measurement, the organisation shall ensure that verification tests are carried out at least once every 5 years to ensure that the accuracy of the private water meters is within  $\pm 3\%$ . Full records of the measurements (at least two per verification tests) shall be maintained, including details of the numerical results, accuracy levels, date of installation of private water meters, date of verification tests, and other relevant observations. Some possible verification tests to confirm accuracy level of private water meters are given in PUB's website ([http://www.pub.gov.sg/conservate/Pages/SgStdSS5772012\\_WEMS.aspx](http://www.pub.gov.sg/conservate/Pages/SgStdSS5772012_WEMS.aspx)) for reference.

**Criteria for WEMS Auditors**

The summary of the criteria for WEMS Auditors is tabulated below.

Criteria	WEMS Auditor	WEMS Lead Auditor
*Qualifications	<ol style="list-style-type: none"> <li>1. <i>Degree or Diploma</i></li> <li>2. At least 5 years full time industrial working experience which includes minimum 3 years of relevant water efficiency or water usage or other water related work experience including auditing in environmental/water management systems.</li> </ol>	
Auditor Training	<ol style="list-style-type: none"> <li>1. Successfully completed and passed Water Efficiency Manager course or an equivalent courses so as to demonstrate understanding and knowledge in the following contents on water efficiency management: <ul style="list-style-type: none"> <li>• regulatory water efficiency requirements</li> <li>• water efficiency measures at various water usage areas</li> <li>• leak detection process</li> <li>• water audit process and methodology</li> <li>• understanding of the requirements of SS 577</li> <li>• water efficiency planning</li> <li>• understanding water balance chart, water efficiency index, business activity indicator, water efficiency baselines, targets, monitoring and performance measurement</li> </ul> </li> <li>2. Successfully completed and passed a recognized Lead Auditor course on Quality Management System.</li> </ol>	
Audit Experience	<p>Performed a minimum of 4 Management System audits as a **qualified Management System auditor within a 2-year period with a minimum of 10 auditor days on site.</p>	<p>Performed a minimum of 4 Management System audits as a **qualified Management System auditor within a 2-year period with a minimum of 10 auditor days on site;</p> <p>and</p> <p>Performed an additional minimum of 3 audits as an audit team leader within a 2-year period.</p>

Maintenance of qualification (once every 3 years)	Performed at least 4 ***WEMS audits at the end of every 3-year cycle with a minimum of 10 auditor days on site.	Performed at least 4 ***WEMS audits at the end of every 3-year cycle with a minimum of 10 auditor days on site;  and  At least 2 of these audits performed shall be in the capacity as the audit team leader.
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*Notes:*

- 1) *\*Technical expert with the relevant sector-experience and technical knowledge shall be used to assist the audit team if the audit team does not have the required or necessary sector-experience and technical knowledge.*
- 2) *\*\*Qualification of WEMS auditor can be done internally by the certification body to perform third-party WEMS audit.*
- 3) *\*\*\*WEMS audits include initial, surveillance or recertification audits. 2<sup>nd</sup> party audits (supplier / vendor audits) performed based on SS 577 can be considered as audit experience stated in this document. All audits have to include the critical processes.*