



PUBLIC

WESM Manual

PEM Audit Market Manual

Issue 2.0 | WESM-PEMAUD

This document covers objectives, scope, and procedures of various audits of the Market Operator and the WESM to be conducted by the PEM Auditor.

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**Declaring the Commercial Operations of Enhanced WESM Design and Providing Further Policies*

Reference Document

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1 INTRODUCTION

1.1 Purpose

- 1.1.1 This Market Manual contains a descriptive summary of the WESM Rules in relation to the PEM Auditor and WESM audits. This Manual provides for the objectives, scope and procedures of the audits of the Market Operator and the spot market, or specific audits of WESM Members requested to the PEM Auditor, and in general the functions of the PEM Auditor in auditing compliance with the WESM Rules. It also covers the characteristics of the audit processes and use of expert auditors by the PEM Auditor, and the system for reporting the results and recommendations of such audits.
- 1.1.2 The general objectives of this Manual are the following:
- (a) Establish the requisites and mechanisms to ensure the independence and transparency of the PEM Auditor and WESM audits;
 - (b) Establish the requisites and mechanisms to ensure independent and effective audits of the spot market and of the Market Operator, as well as to ensure compliance and non discrimination in applying the WESM Rules;
 - (c) Establish effective procedures and audit processes when the PEM Auditor is requested to assess compliance or identify problems in the implementation or application of the WESM Rules regarding generation scheduling, dispatch, price setting and settlement;
 - (d) Clarify the different types of audits that may be requested from the PEM Auditor, including special audits of a WESM Member, the System Operator or the Market Operator when requested by the PEM Board or in the assessment or investigation of an alleged breach;
 - (e) Clarify the rights and responsibilities of the PEM Auditor in proposing amendments to the WESM Rules when identifying, through audit processes, problems in the design or implementation or application of the WESM Rules, or in submitting reviews to amendments to the WESM Rules;
 - (f) Establish the role of the PEM Auditor in relation to metering arrangements; and
 - (g) Establish the rights and mechanisms for the PEM Auditor to contract external independent expert auditor support and the mechanisms for field audits.
- 1.1.3 The PEM Auditor may identify non-compliance conducts or conditions during an audit process. In such cases, the PEM Auditor should submit a non-compliance complaint to the Enforcement and Compliance Officer (ECO).
- 1.1.4 For the purpose of this Manual, any act, omission, conduct or behavior and the like contrary to or in non-compliance with the WESM Rules, including its Market Manuals, the WESM Objectives, rules and regulations, regarding the WESM Rules, shall be considered a breach.
- 1.1.5 Upon the request of the Enforcement and Compliance Officer (ECO) or the PEM Board to assist in the assessment or investigation of an alleged breach, the PEM Auditor shall carry out or coordinate and supervise the required audits, inform the audit findings and

give its opinions in relation to the alleged breach. The procedures and processes described in this Manual do not cover the details of assisting or auditing in the assessment or investigation process of an alleged breach, as they are covered in the Compliance and Enforcement Market Manual. However, this Manual covers the interactions between the PEM Auditor, the ECO and the PEM Board in relation to alleged breaches.

1.2 Scope

1.2.1 This Manual covers all related activities and procedures in relation to the PEM Auditor, audits of the spot market and the Market Operator and special audits of WESM Members. This includes the following:

- (a) A description of the functions, reports and responsibilities of the PEM Auditor;
- (b) Requisites and qualifications of the PEM Auditor or any expert auditor used, to ensure independence, adequate expertise and transparency of audits;
- (c) Access rights to the audit reports, proposed recommendations by external auditors and the final recommendations of the PEM Auditor;
- (d) Review of implementation and results of audit recommendations;
- (e) Procedures, general methodology and scope of an audit and the audit results;
- (f) Interaction between the PEM Board and the ECO or the PEM Board when requested an assessment or audit related to an investigation of an alleged breach;
- (g) Procedures and criteria for the PEM Auditor to assess the efficiency, validity and justification of new software or modifications to existing software of the Market Operator;
- (h) A description of interactions between the PEM Auditor and the PEM Board, and the rules change process, in relation to results and recommendations of the audits, amendments proposed to the WESM Rules, or in submitting results of special audits requested by the PEM Board.

1.2.2 This Manual provides for a streamlined process for an annual audit of the spot market, conducted together with the Market Operator audit.

1.3 Review and Updates

1.3.1 The PEM Board, with the assistance of the PEM Auditor, shall maintain this Manual under review, to identify any need for updates and amendments.

1.3.2 Amendment to the provisions of this Manual requires the approval of the PEM Board. After each such approval, the amended Manual shall be published in the Market Information Website. Subject to the Manual of Procedures on Changes to the WESM Rules, the approval of the PEM Board shall specify the date when the amended Manual becomes effective. However, no such amendment and/or change to this Manual shall be retroactively applied.

1.3.3 Amendment proposals to this Manual may arise from

- (a) The PEM Board, upon its own initiative or upon a recommendation by other PEM Committees;
 - (b) A WESM Member, the Market Operator or any party affected by the operations of this Manual; and
 - (c) The PEM Auditor in view of:
 - (i) Audit experiences, problems or other issues that arise in the implementation and application of this Manual; or
 - (ii) Amendments to the WESM Rules or other Applicable Law, Rules and Regulations; or
 - (iii) Conflict of interpretation; or
 - (iv) Provisions or parts of this Manual being annulled or declared invalid.
- 1.3.4 Amendment proposals shall be submitted, reviewed and approved in accordance with the procedures in the Rules Change Manual.
- 1.3.5 The responsibility for drafting the amendments occasioned and approved by the above-described circumstances shall lie with –
- (a) The Rules Change Committee regarding amendments to this Manual that are required or otherwise attributable to amendments to the WESM Rules or other Applicable Law, Rules and Regulations; or
 - (b) The PEM Auditor in all other amendments provided however that the PEM Auditor may request the assistance of the Rules Change Committee.

2 DEFINITIONS, INTERPRETATION AND CONSTRUCTION

2.1 Definitions

Unless otherwise defined in this Manual, terms and acronyms used in this Manual shall have the same definition as that in the WESM Rules.

- Act means the Republic Act No. 9136 also known as the Electric Power Industry Reform Act (EPIRA), as they may be issued or modified by competent authorities from time to time.
- Applicable Law, Rules and Regulations shall include the EPIRA and its Implementing Rules and Regulations, the Philippine Grid Code, the Philippine Distribution Code, the WESM Rules and Market Manuals, the Competition Rules, and such other codes, rules, regulations, issuances related to the WESM, as they may be issued or modified by competent authorities from time to time.
- Audit Committee refers to a group of experts selected by the PEM Auditor to act as auditors and support the audit functions in the WESM.
- Audit Report means the report of the PEM Auditor or the Audit Committee that presents audit results and recommendations.
- DOE refers to the Department of Energy, the government agency created pursuant to Republic Act No. 7638.

- Enforcement and Compliance Officer (ECO) refers to an officer of the PEMC in charge of the compliance and enforcement functions and responsibilities as established in the WESM Rules, and in charge of the corresponding procedures established in the Compliance and Enforcement Market Manual.
- ERC refers to the Energy Regulatory Commission, the independent quasi-judicial regulatory body created by the EPIRA.
- Independent means a person that is considered as independent of the Philippine electric power industry, in accordance with the criteria set forth in WESM Rule 1.4.2.7.
- Investigation means an inquiry conducted by the ECO or conducted by the MSC upon request by the ECO to verify compliance with the WESM Rules, pursuant to the Compliance and Enforcement Market Manual.
- Market Manual means a manual of specific procedures, systems and protocols for the implementation of the WESM Rules and for the PEM Committees and the ECO.
- Market Manual Website means the website that the PEM Board assigns for the publication of the Market Manuals and that can be accessed by WESM members.
- Manual refers to this PEM Audits Market Manual.
- Market Information Website means the website for the publication of information and results of the WESM established in accordance with the WESM Rules.
- Market Surveillance Committee (MSC) refers to the PEM Committee appointed by the PEM Board to monitor and report on activities in the spot market in accordance with the Market Surveillance Market Manual.
- Metering Services Provider refers to a person or entity authorized by the ERC to provide metering services and registered with the Market Operator in that capacity in accordance with clause 2.3.6 of the WESM Rules.
- PEM Auditor refers to the auditor appointed by the PEM Board as defined in the WESM Rules and tasked to undertake the functions and activities set out in this Manual.
- PEM Board refers to the Board of Directors of the PEMC that is responsible for governing the WESM.
- PEM Committee refers to a Committee duly provided for under the WESM Rules and such other committees created by the PEM Board from time to time be, including for purposes of this Manual, the PEM Auditor, the Technical Committee and the MSC.
- PEMC refers to the Philippine Electricity Market Corporation, a non-stock, non-profit public-private partnership that governs the wholesale electricity spot market (WESM).
- PEMC Charter refers to the Articles of Incorporation and By-Laws of the PEMC, as approved by the Securities and Exchange Commission on 18 November 2003, and as they may be amended from time to time.
- Rules denote the WESM Rules.
- Rules Change Committee refers to the committee established by WESM Rule 8.2 to review and propose amendments to the WESM Rules.
- Selection Committee refers to the Committee composed of at least three (3) members of the PEM Board, one of whom should be an Independent PEM Board director, which is tasked to review and evaluate the qualifications of all persons nominated to any PEM Committee requiring appointment by the PEM Board.
- Technical Committee refers to the group of persons appointed by the PEM Board to monitor and review technical matters under and in relation to the WESM Rules, the Grid Code and Distribution Code, in accordance with WESM Rule 1.7;
- Trading Participant is a person or entity registered with the Market Operator in accordance with WESM Rule 2.3.3 as either a customer or a generation company.
- WESM Objectives refers to the objectives of the spot market as defined in WESM Rule 1.2.5.
- WESM Member means a person who is registered with the Market Operator in accordance with WESM Rules 2.3 and 2.4, and that includes Trading Participants, Metering Services

Providers, Network Service Providers, Ancillary Services Providers and the System Operator.

2.2 Interpretation and Construction

- 2.2.1 Any Annex to this Manual shall be considered an integral part hereof.
- 2.2.2 Any reference to "this Market Manual " or "this Manual" is a reference to the whole of this PEM Audits Market Manual, including all its Annexes.
- 2.2.3 The singular includes the plural and vice versa.
- 2.2.4 The words "such as", "include", "including", "for example" and "in particular" shall be construed as being by way of illustration or emphasis only and shall not limit or prejudice the generality of any foregoing words.
- 2.2.5 Headings in this Manual are for convenience only and shall not affect the construction and interpretation of the provisions of this Manual.
- 2.2.6 Any reference to any law, regulation made under any law, rules or codes shall be to that item as amended, modified, revised or replaced from time to time.
- 2.2.7 Unless otherwise stated or contextually inherent, any reference to a numbered rule corresponds to that clause in the WESM Rules.
- 2.2.8 The provisions in this Manual, the WESM Rules and other Market Manuals shall be read, construed and interpreted in such a manner as to harmonize and reconcile each and every provision thereof. In the event of inconsistency, the WESM Rules shall prevail.
- 2.2.9 Should any provision of this Manual be declared invalid or nullified by any court or authority of competent jurisdiction, the other provisions not affected by the declaration of invalidity or nullity shall continue to be in full force and effect.
- 2.2.10 If part of a provision of this Manual be invalidated or nullified by any court or authority of competent jurisdiction, but the rest of such provision would remain valid if part of the wording were deleted, the provision shall apply with such minimum modification as may be:
 - (a) Necessary to make it valid and effective; and
 - (b) Most closely achieves the result of the original wording but without affecting the meaning or validity of any other provision of this Manual.

3 THE PEM AUDITOR

3.1 Responsibilities

- 3.1.1 The main responsibility of the PEM Auditor is to conduct, on his own or through appointment of auditors, and to coordinate and supervise effective and independent audits of the operation of the spot market and of the Market Operator, in order to reinforce Trading Participants' confidence in the transparency and adequacy of the operation of the WESM.

- 3.1.2 To support and facilitate assessments or investigations of an alleged breach to the WESM Rules and when requested by the ECO, the PEM Auditor may conduct specific audits on WESM Members, the System Operator or the Market Operator pursuant to compliance with standards, systems and procedures established in the WESM Rules.
- 3.1.3 In the performance of its responsibilities, the PEM Auditor shall endeavor to conduct audits and make recommendations consistent with -
- (a) The WESM Objectives;
 - (b) The development of the WESM in a manner that is sustainable, competitive, efficient, transparent and reliable;
 - (c) Non discrimination;
 - (d) Consistency and transparency; and
 - (e) Efficient and effective systems, software and working processes.
- 3.1.4 The PEM Auditor shall observe all provisions of the WESM Rules, its Market Manuals and the PEMC Charter that are applicable to its functions and responsibilities, as well as any standard of conduct or conflict of interest guidelines prescribed by the PEM Board by resolution.
- 3.1.5 The PEM Board, through the President of the PEMC, shall exercise administrative supervision over the PEM Auditor. As such, the President shall exercise the following functions:
- (a) Monitor the performance of the PEM Auditor, including the Audit Committee;
 - (b) Provide recommendation on any adjustments of honoraria that may be received by the PEM Auditor, including the Audit Committee;
 - (c) Recommend the termination and removal of the PEM Auditor or member of the Audit Committee.

3.2 Scope of Work and Functions

- 3.2.1 The PEM Auditor has the following scope of work and specific functions:
- (a) Administer and ensure the effective implementation and operation of the audit provisions of this Manual;
 - (b) Review the adequacy and test any new, upgraded or modified software of the Market Operator for the WESM or provided to WESM Members for their own use;
 - (c) Ensure effective and independent audits of the spot market and of the Market Operator, particularly but not limited to:
 - (i) The audit of the generation scheduling and dispatch process, price calculation, market settlement; and

- (ii) The audit of any other procedures, processes, persons, systems or other matters relevant to the WESM and the implementation of the WESM Rules;
 - (d) Review or audit specific procedures, standards, facilities or systems related to generation scheduling, dispatch, prices and settlement at the request of the PEM Board, either to assess adequacy of such matters, procedures or processes, or to audit compliance;
 - (e) During an investigation of an alleged breach, and upon the request of the ECO, assess or audit compliance by a WESM Member, the System Operator or the Market Operator on systems or procedures in relation to generation scheduling, dispatch and settlement, or other systems and procedures established in the WESM Rules;
 - (f) Submit written proposals of changes to the WESM Rules concerning generation scheduling, central dispatch, settlement and other matters covered in its auditing activities, if the PEM Auditor detects deficiencies as a result of an audit or review process, or other test or check performed in the course of its duties;
 - (g) Select and propose, experts or expert teams to be contracted as special external auditors for specific and specialized audits;
 - (h) Prepare audit reports with the main audit findings and the recommendations to be implemented, and see that the reports are published in the Market Information Website;
 - (i) Maintain data, reports and other information related to the development and results of the audit processes; and,
 - (j) Conduct audit of market assessment system to determine if the system is producing outcomes consistent with the WESM Rules and the WESM objectives.
- 3.2.2 In performing its audit work, the PEM Auditor may request to contract, subject to the PEM Board approval, independent persons or teams with adequate expertise to act as auditors in specific and specialized audits.

3.3 Selection and Appointment

- 3.3.1 The PEM Board shall select and appoint a person with the qualifications and requisites established in this Manual to perform the mandate of the PEM Auditor.
- 3.3.2 Selections shall be made at least one month before the expiration of the term of the PEM Auditor or within one month after a vacancy has occurred in the position of PEM Auditor. PEM Board shall publish in a newspaper of general circulation and post in the Market Information Website a notice calling for the submission of qualified nominees. Any person or entity making such nomination must submit a nomination form as prescribed by the PEM Board.
- 3.3.3 The Selection Committee shall review the persons nominated and request from those that it considers compliant with the qualifications and requisites, the submission of an expression of interest with their qualifications and experience.

- 3.3.4 The Selection Committee will review the submissions received and select the person best qualified and complies with the independence requisites. In determining the list of nominees, the Selection Committee shall consider foreign professionals only if such professional is known to be an outstanding expert or specialist in the particular field and that the services of such foreigner is urgently necessary either for lack of local experts or if his or her service will promote the advancement of the WESM.
- 3.3.5 Upon receipt of the list of qualified nominees from the Selection Committee, the PEM Board shall post in the Market Information Website and make available to all WESM Members the list of nominees.
- 3.3.6 The PEM Board shall, by resolution, approve and confirm the PEM Auditor recommended by the Selection Committee from among the list of qualified nominees.

3.4 Qualifications and Disqualifications

- 3.4.1 To be a PEM Auditor, a person must fulfill the following requisites and possess the following qualifications:
- (a) Be a natural person;
 - (b) Be of legal age;
 - (c) Be of sound mind;
 - (d) Be at least a college graduate, provided that this qualification shall not apply to those with at least ten (10) years of relevant experience in their field of expertise;
 - (e) Have an understanding of the processes and types of software involved in generation scheduling and centralized economic security constrained dispatch in power systems;
 - (f) Have an understanding of the electricity industry in Philippines, the WESM Rules, and of the settlement requirements in the WESM, at least possessing the capacity to quickly acquire such an understanding;
 - (g) Be Independent; and
 - (h) Be objective, without any interference or undue influence from the Market Operator, System Operator or any WESM Member.
- 3.4.2 In addition to the qualification requirements in the previous paragraph, the PEM Auditor must not be and not have been:
- (a) Convicted by final judgment of an offense involving moral turpitude or any fraudulent act or transgression;
 - (b) Found with finality by a court of competent jurisdiction or a quasi-judicial body to have willfully violated, or aided, abetted, counseled, induced or procured the violation of any Applicable Law, Rules and Regulations;
 - (c) Judicially declared to be insolvent;

- (d) Found guilty by final judgment by a foreign court or equivalent regulatory authority of acts, violations or misconduct similar to any of the acts, violations or misconduct listed in the foregoing paragraphs;
- (e) Convicted by final judgment of an offense punishable by imprisonment for a period exceeding six (6) years.

3.4.3 Prior to being appointed as PEM Auditor, the person must provide the PEM Board a signed declaration that the person fully complies with the independence requisites established in this Manual and has no conflict with any of the parties covered in this Manual when he assumes the position as a member of the MSC.

3.5 Term of Appointment

3.5.1 The PEM Auditor shall be appointed for a fixed term of five (5) years and shall be eligible for re-appointment for one additional fixed term of up to five (5) years.

3.5.2 The PEM Board may terminate the appointment of the PEM Auditor—prior to the end of its term in the following cases:

- (a) The PEM Auditor ceases to meet the qualifications and requisites established in this Manual.
- (b) The PEM Auditor becomes disqualified in accordance to the disqualification conditions in this Manual.
- (c) The PEM Auditor fails to perform its duties and responsibilities in accordance with this Manual or he acts contrary to the principles and objectives of the WESM.

For purposes of this provision, the PEM Board shall constitute an ad hoc committee of three (3) persons, composed of the President of PEMC, an Independent Director, and one member from other committees not belonging to the Audit Committee or Technical Committee. The ad hoc committee shall determine and evaluate whether there is sufficient ground to terminate the PEM Auditor's appointment. A determination made by the ad hoc group finding insufficient grounds for termination shall be final. However, if the ad hoc group finds that there is sufficient ground to seek the termination of the PEM Auditor, the same shall be confirmed by a majority vote of the PEM Board constituting a quorum.

3.5.3 The PEM Auditor shall cease to hold office if the said person

- (a) Resigns prior to the end of its appointment period, or no longer complying with the required qualifications and other requisites, or other personal reasons; or
- (b) Becomes incapable of performing his duties as stated in this Manual; or
- (c) Dies.

3.5.4 For impending vacancy of the PEM Auditor, the PEM Board, through the Selection Committee, shall select a replacement sufficiently in advance to enable the replacement to be available in time. The replacement must meet the qualifications and

requisites set forth in this Manual. If the replacement has not been appointed in time, the PEM Board may appoint an officer-in-charge to discharge the functions of the PEM Auditor in a transitory capacity until a permanent and qualifying replacement has been appointed.

3.6 Data Management and On-going Review

- 3.6.1 The PEM Auditor shall implement effective data management on audit processes and shall organize, maintain and review audit results, findings and the implementation of audit recommendations.
- 3.6.2 The PEM Auditor shall ensure adequate follow up of each audit recommendation, and shall verify, in relation to problems and issues identified in an audit, whether the recommendations were implemented and, if so, whether they were successful in achieving the desired outcomes and solving the identified problems.
- 3.6.3 The PEM Auditor shall implement a formal mechanism for tracking the development of deficiencies identified by audits, and the ways in which these deficiencies are being corrected.
- 3.6.4 The PEM Auditor shall implement for each audit a post-implementation review to ensure that appropriate emphasis is given to the audit findings and that the relevant parties are implementing the recommendations. In particular, the PEM Auditor shall include the following as part of the scope of work of each audit, viz.:
 - (a) The review of the measures implemented and actions taken in view of the recommendations of the previous similar audit;
 - (b) Comments on the adequacy of the measures implemented and actions taken in view of the findings and recommendations of the previous audit; and
 - (c) Further recommendations, if a problem found in the previous audit continues to be unsolved or if the party was unable to put in place the enhancements recommended in the previous audit.

3.7 Reports

- 3.7.1 The PEM Auditor shall present the results of audits, assessments and reviews in the following reports:
 - (a) At the end of each audit, an Audit Report, including an executive summary summing up the outcomes of the audit, main finding and the recommendations;
 - (b) Rules Review Reports;
 - (c) Software Review Reports;
 - (d) After the annual assessment of metering arrangements, a Metering Arrangements Report; and
 - (e) Compliance Assessment Reports, on the assessment or investigation of alleged breaches.

3.7.2 Within fifteen (15) days after an audit is finalized by the PEM Auditor or by a designated expert or expert team contracted to act as auditor(s), the PEM Auditor shall prepare and submit to the PEM Board an Audit Report, containing –

- (a) An executive summary that provides a concise description of the audit process, its results and recommendations;
- (b) A description of the scope and nature of the audit, and the parties audited;
- (c) If external expert auditors were used, the name of the experts or expert team, the description of its relevant expertise and the report prepared by the expert;
- (d) The description of the audit process and outcomes; and
- (e) The main findings and recommendations.

It is hereby provided that all information or data included in the Audit Report will take into consideration the confidentiality practices established in this Manual and the WESM Rules.

3.7.3 The PEM Board shall review each Audit Report. Not later than fifteen (15) days after the next PEM Board meeting following the receipt of the report, the PEM Board shall inform the PEM Auditor if any recommendation is considered inadequate and should not be implemented.

3.7.4 Within five (5) business days after receiving from the PEM Board its review on the audit recommendations, the PEM Auditor shall prepare a revised Audit Report and publish it in the Market Information Website. The Audit Report shall include:

- (a) A description of the scope and nature of the audit, indicating parties audited and experts contracted, if any;
- (b) A summarized description of the audit process and main findings; and
- (c) The audit results and recommendations to be implemented.

3.7.5 It is hereby provided that no information or data that qualifies as confidential shall be included in the Audit Report.

3.7.6 Any WESM Member, the Market Operator, the DOE or the ERC may request for copies of the complete Audit Report, provided that the version provided as a copy shall not include information that qualifies as confidential in accordance with this Manual, with the exemptions to confidentiality provisions established in the WESM Rules.

3.7.7 After the end of a review of the WESM Rules requested by the PEM Board or the Rules Change Committee, the PEM Auditor shall prepare a Rules Review Report and shall send it to:

- (a) The PEM Board;
- (b) The Rules Change Committee; and
- (c) DOE.

- 3.7.8 After finalizing an assessment or audit requested by the ECO in the course of an assessment or investigation of an alleged breach, the PEM Auditor shall prepare and send to the ECO a Compliance Assessment Report.
- 3.7.9 The PEM Auditor shall prepare and submit to the PEM Board monthly Audit Assessment Reports, which shall contain:
- (a) A list of the audits in process and the stage of each audit still not finalized;
 - (b) A summarized description of the scope, main finding and recommendations of the audits, assessment and reviews finalized during the month;
 - (c) The developments and implementation of the audit recommendations; and
 - (d) Any recommendation that may arise from the experiences in audit procedures established in this Manual or otherwise observed.

4 EXPERT SUPPORT

4.1 Scope

- 4.1.1 To ensure sufficient and adequate expertise, the PEM Auditor may, subject to the PEM Board approval, engage the services of independent persons or teams or companies with special expertise, to act as:
- (a) Experts for field audits of metering equipment or processes;
 - (b) Experts for the audit and/or certification of the Market Operator software; and
 - (c) Expert teams or companies for the audit of the WESM and the processes and systems in relation to generation scheduling, dispatch and settlement of the Market Operator to assess adequacy and verify compliance with the WESM Rules.
- 4.1.2 The PEM Auditor shall endeavor to maximize the use of the Technical Committee as expert auditors, in audits where they have the relevant expertise and subject to compliance with the independence provisions and qualifications established in this Manual.
- 4.1.3 For the purpose of providing indicative references, the PEM Auditor shall prepare before the beginning of each year an estimated budget for external expert auditors describing:
- (a) Specialized audits that may be required during the year and their estimated duration; and
 - (b) Estimated cost of external auditors for the identified specialized audits.

4.2 Pool of Experts and Audit Committee

- 4.2.1 The PEM Auditor shall nominate and organize a pool of independent experts for audits.
- 4.2.2 The pool of experts shall include:

- (a) Persons selected from the Technical Committee with specialized technical expertise; and
- (b) Not less than two (2) and not more than five (5) experts with adequate and proven expertise, to form an Audit Committee.

4.2.3 When the PEM Auditor requires expert auditors, it shall prioritize the use of members of the Technical Committee that have been pre-selected to be part of the approved pool of experts, provided that

- (a) The member of the Technical Committee has the necessary expertise relevant to the specific audit and is independent from the party or parties to be audited; and
- (b) The person can reject being designated as an auditor due to insufficient time or other work obligations within the Technical Committee.

4.2.4 In making appointments to the pool of experts and the Audit Committee, the PEM Auditor and the PEM Board shall endeavor to nominate and appoint persons with different relevant experience and knowledge to beget combined expertise adequate to cover the different types of audits specified in this Manual.

4.3 Technical Committee

4.3.1 The PEM Auditor may request the PEM Board to use persons from the Technical Committee to audit –

- (a) Technical matters relating to the operation of the spot market;
- (b) Information technology;
- (c) Metering technology and data; and
- (d) Any other matter of a technical nature in relation to the WESM and the WESM Rules.

4.3.2 A member of the Technical Committee may be selected and included by the PEM Auditor in the pool of auditors available to be designated by the PEM Auditor as expert auditors, provided that the person shall possess relevant expertise for the audits under the responsibility of the PEM Auditor in accordance to this Manual; Provided further that the PEM Board may reject the inclusion of a member of the Technical Committee in the pool of auditors if in its opinion such person does not have adequate knowledge or sufficient expertise.

4.3.3 Each member of the Technical Committee included in the pool of auditors that form the Audit Committee shall enter into a confidentiality undertaking, the terms of which shall be prescribed by the PEM Board.

4.4 Selection and Appointment of the Audit Committee

4.4.1 To be a member of the Audit Committee, a person must meet the same qualifications and not have or had the disqualifications as the ones established in this Manual for the PEM Auditor.

- 4.4.2 For the selection and appointment of the members of the Audit Committee, the PEM Auditor shall submit to the Selection Committee the names, qualifications and experience of the candidates. Additionally, the Selection Committee may call for qualified persons to submit their expression of interest and their relevant experience.
- 4.4.3 The Selection Committee shall review each expert proposed for the Audit Committee and the PEM Board, by resolution, shall select and appoint the members in accordance with the procedure established in this Manual.
- 4.4.4 Each member shall be appointed for a period of three (3) years, and then eligible for re-appointment. The member shall cease office prior to the end of its appointment period if the person –
- (a) Dies or resigns;
 - (b) Fails to discharge the obligations of his or her office or is removed for cause as determined by an ad hoc committee of three (3) persons, composed of the PEMC President, an Independent Director, and a member of another Committee not belonging to the Audit Committee, in the same manner as established in Section 3.5.2 of this Manual;
 - (c) No longer meets the qualification requirements established in this Manual; or
 - (d) Becomes disqualified under the disqualification conditions established in this Manual.

4.5 Terms of Reference to Contract External Auditors

- 4.5.1 The PEM Auditor may request to contract external experts for a specialized audit if –
- (a) The PEM Auditor is unable to conduct the audit itself; and
 - (b) The expertise available in the Technical Committee is insufficient or inadequate; and
 - (c) The expertise available in the Audit Committee is insufficient or inadequate.
- 4.5.2 In each instance where the PEM Auditor requires external and independent experts for specialized audits, the PEM Auditor shall prepare terms of reference for the audit work, describing the scope of work, timeframe and deliverables. The terms of reference shall also describe the mechanism to evaluate proposals and determine the winner that will be contracted as independent external auditor.
- 4.5.3 The PEM Board shall review the proposed terms of references and may request clarifications or additional information from the PEM Auditor. The PEM Board may propose changes to the proposed terms of reference before approving the same.

4.6 External Expert Short List

- 4.6.1 To contract an external expert or expert team for a specific audit work, the PEM Auditor shall short list a minimum of three (3) experts or expert teams, based on their independence, expertise and experiences in similar audits. In its short-listing, the PEM Auditor shall ensure that the experts are totally independent from the parties to be audited.

4.6.2 If the PEM Auditor has a pool of external auditors approved by the PEM Board, the short list shall be first selected from this pool. If the PEM Auditor does not have an approved pool of experts or if the experts available in the pool are inadequate or insufficient for the required short list, the PEM Auditor may include experts that are not in the pool approved by the PEM Board.

4.7 Proposal to Contract External Auditors

4.7.1 The PEM Auditor shall request the PEM Board approval of the short list and audit work by external experts, submitting a report with –

- (a) The description of the scope of the audit work required, in particular the type of audit and type of special expertise;
- (b) The reason(s) why external expertise is needed and the criteria for evaluation;
- (c) The proposed terms of reference including methodological approach; and
- (d) The short list of experts or expert team or company proposed, including their qualifications, relevant previous experiences and compliance with independence provisions.

4.7.2 The PEM Board shall review the request to contract external auditors, the terms or references and the proposed short list. It may request clarifications or additional information from the PEM Auditor, or conduct a special meeting to review the terms of reference. The PEM Board may reject one or more of the short listed experts if in the PEM Board opinion the proposed expert does not have adequate expertise or does not comply with the required independence. If the PEM Board has any objection to the proposal, not later than fifteen (15) days after the next PEM Board meeting following receipt of the request from the PEM Auditor, the PEM Board shall inform the PEM Auditor –

- (a) If any of the short listed experts has been rejected and the reason(s) for the rejection; and
- (b) Revisions proposed to the terms of reference.

4.7.3 If, within the timeframe specified in Section 4.7.2, the PEM Board does not send to the PEM Auditor any objections to the short list or revisions to the terms of reference, the PEM Auditor shall continue with the contracting process.

4.7.4 If, within the timeframe specified in Section 4.7.3, the PEM Board informs that one or more experts are rejected and the remaining short list is composed of less than three (3) candidates, the PEM Auditor shall submit to the PEM Board other independent experts to ensure that the short list includes at least three alternatives, unless the PEM Board approves that, due to the nature and special characteristics of the audit, it will be difficult to obtain a short list of three and authorizes a shorter list of experts.

4.8 Selection of External Expert Auditors

4.8.1 Once the short list has been approved and the terms of reference revised, as necessary, the PEM Auditor shall send a request for proposals to each expert, expert

team or expert company short listed. Each expert shall submit its technical proposal, which shall contain its methodological approach, and its financial proposal.

- 4.8.2 The PEM Auditor shall review the proposals received and submit a report to the PEM Board recommending the expert to be contracted. The report shall describe:
- (a) The list of experts that submitted proposals;
 - (b) For each expert, its qualifications and experiences presented, summary and review of the methodological approach, and requested costs and remuneration in their financial proposal; and
 - (c) The outcome of the reviews, indicating the external auditor recommended to be contracted in view of the evaluation mechanism included in the terms of reference.
- 4.8.3 The PEM Board shall review the proposed selection and may request clarifications or further information from the PEM Auditor in relation to the proposals or conduct a meeting with the PEM Auditor to review the evaluation. Not later than fifteen (15) days after the next PEM Board following receipt of the review of proposals prepared by the PEM Auditor, the PEM Board shall approve the independent expert to be contracted for the special audit.

5 AUDITS

5.1 Types of Audits

- 5.1.1 The PEM Auditor shall conduct annual audits of the spot market and of the Market Operator in accordance with the process discussed in this Manual.
- 5.1.2 If requested by the ECO in the course of an assessment or investigation of an alleged breach, the PEM Auditor may conduct specific audits of:
- (a) WESM Members' facilities, processes and/or information provided to the Market Operator; or
 - (b) Specific systems and processes in the System Operator; or
 - (c) Specific systems and processes in the Market Operator in relation to generation scheduling, constraints, bids and offers, dispatch, price calculation and settlement.

The ECO will inform the party to be audited via email that the PEM Auditor will be conducting an audit and the specific type of audit, facilities, processes, systems or information to be audited.

- 5.1.3 On technical matters related to the WESM Rules, the PEM Auditor shall use, whenever possible and adequate, members of the Technical Committee as auditors.

5.2 Audit Process

- 5.2.1 The PEM Auditor shall comply with the following steps when commencing and conducting an audit:
- (a) The PEM Auditor will inform the party to be audited at least five (5) business days ahead of the proposed date to initiate the audit. In this notification, the PEM Auditor will describe:
 - (i) The criteria, standard, rules or requirements the PEM Auditor will assess during the audit;
 - (ii) The length of time that the PEM Auditor reasonably believes will be required for the audit;
 - (iii) The information and data required, together with the format and deadlines for providing it to the PEM Auditor.
 - (b) As necessary, the PEM Auditor may designate a field auditor, from the Technical Committee or an external expert auditor(s) in accordance with this Manual. In such case, the PEM Auditor will inform the name of the designated auditor(s) to the party to be audited.

5.3 Audit Results

- 5.3.1 The PEM Auditor or the designated auditor(s), as applicable, shall carry out the tests, collection of data and other information, review of documents, processes and other adequate arrangements to assess and verify the standards, requirements and compliance with the WESM Rules, as applicable.
- 5.3.2 The PEM Auditor or the designated auditor(s), as applicable, shall prepare an Audit Report with the audit results, identifying and describing the following:
- (a) Main findings;
 - (b) Conditions that correspond to non compliance: For each condition in non compliance, it shall differentiate the level of non-compliance as follows:
 - (i) Critical non-compliance: A non-compliance which results in failure to provide services or results in time, or to calculate information in accordance to the WESM Rules, or to provide data in the format and/or to the accuracy required, and which results in a breach.
 - (ii) Major non-compliance: An occurrence, practice or deficiency in a system or process, which has the potential to escalate to a level at which it would become a critical non-compliance.
 - (iii) Incidental non-compliance: A condition or situation that does not qualify as critical or major, and which typically is associated with a lack of attention to detail, or lack of adequate staff training that leads to unnecessary mistakes.
 - (c) Practices or processes or systems that should be enhanced, describing the recommended enhancements; and
 - (d) Other recommendations to solve or address problems or non-compliance, or other issues such as quality control, best practices and staff adequacy.
- 5.3.3 At the end of an audit, any designated auditor shall send its Audit Report to the PEM Auditor. If the audit involves more than one auditor, the PEM Auditor shall prepare a consolidated Audit Report summarizing the combined findings and recommendations of the auditors together with its own views and recommendations, when applicable.

5.3.4 At the end of the audit, the PEM Auditor shall send to the entity that requested the audit the Audit Report with the audit findings, recommendation and proposed actions including the period within which the entity will comply with the Audit Report. The PEM Auditor shall also send copy of the report to the party audited.

5.4 Audit Costs

5.4.1 The Market Operator shall pay the cost of the periodic market audits and software audits of the Market Operator.

5.4.2 The cost of a special audit shall be paid by the party that requested the audit, unless the audit was requested to verify compliance and the audit findings show non-compliance, in which case the party or parties in non-compliance shall pay the cost of the audit.

6 FIELD AUDITS

6.1 Field Auditors

6.1.1 The PEM Auditor may assign staff from the Technical Committee or independent experts, with extensive background on the matters to be audited, for field audits of facilities or systems. In addition to technical tests and verifications, the field audit may include review of working processes and compliance of such processes by the relevant staff.

6.1.2 Each designated field auditor shall prepare and send to the PEM Auditor a formal audit report.

6.1.3 To help facilitate a consistent approach to reporting by different field auditors and between different audit cycles, the PEM Auditor shall prepare a standard format for reporting by field auditors on specific audits.

6.1.4 The PEM Auditor shall prepare a consolidated Field Audit Report and submit it to the PEM Board, with an Executive Summary summarizing the main outcomes and findings of the different field audits, the level and statistics of non-compliance, and the recommendations.

6.2 Field Audit Methodology

6.2.1 The field audit process shall comply with the following steps:

(a) The field auditor shall be advised by the PEM Auditor of the sites and facilities to be audited, the scope of the audit, details of the tests and results to be obtained.

(b) The party to be audited (the one who is responsible for the facilities to be audited) shall be informed of the audit and the name of the field auditor by the PEM Auditor at least five (5) business days prior to the initiation of the audit.

(c) The field auditor shall contact the party to be audited and inform both the party to be audited and the PEM Auditor of the proposed timetable and work plan. The party to be audited may request changes to the timetable for valid reasons, but in no case cause a delay greater than five (5) business days to the audit.

- (d) The field auditor and the party to be audited shall meet in an office to review drawings, data sheets and any security or safety issues.
- (e) The field auditor shall visit the site and perform the planned tests on facilities and/or collect the required data. Staff of the party audited may be present.
- (f) The field auditor may ask for the PEM Auditor to request data and other information from the System Operator and the Market Operator, as applicable, to compare the data obtained in the tests or audits from the data submitted to the System Operator or the Market Operator by the party audited.
- (g) The field auditor shall conduct an end of audit meeting with the party audited, to explain the first preliminary audit findings.
- (h) The field auditor shall submit its report to the PEM Auditor.

7 MARKET AUDIT

7.1 General Characteristics

7.1.1 Audits of the spot market and the Market Operator shall be conducted or supervised and coordinated by the PEM Auditor.

7.1.2 Each spot market and Market Operator audit should include the following:

- (a) Terms of reference with a list of tasks, covering the processes, information and systems to be audited;
- (b) An audit process within a specified timeframe;
- (c) An audit report, describing
 - (i) The audit process;
 - (ii) Main findings, highlighting areas where there are non-compliance with the WESM Rules; and
 - (iii) Conclusions and recommendations.

7.1.3 The following criteria shall be used to assess the spot market and the Market Operator:

- (a) Clear accountability for performance of Market Operator functions and responsibilities;
- (b) Adequacy - in terms of number and training of staff - to perform assigned tasks and systems used;
- (c) Efficiency of processes (e.g. time response);
- (d) Accuracy of tasks (e.g. numbers of errors in settlement statements);
- (e) Compliance with the WESM Rules;
- (f) Degree to which processes are in alignment with the WESM Rules and its Market Manuals; and

- (g) Quality of the service measured in frequency and level of complaints and disputes.

7.1.4 In order to streamline the audit process and avoid unnecessary duplications, where possible –

- (a) The PEM Auditor and the Market Operator shall agree an annual audit of the spot market; and
- (b) The spot market audit and the annual Market Operator audit shall be conducted together under the supervision and responsibility of the PEM Auditor.

7.2 Annual Audit of the Spot Market and the Market Operator

7.2.1 Each year and not later than the end of October, the PEM Auditor shall conduct an audit of the spot market, including settlement of the markets administered by the Market Operator, generation scheduling, dispatch, price calculation, and any procedures and working processes used by the Market Operator in performing those functions in the WESM.

7.2.2 The general objectives of the annual audit of the spot market and the Market Operator are to:

- (a) Assess procedures and working processes in the Market Operator;
- (b) Assess the usefulness and appropriateness of systems settlement system, data management and other procedures and working processes used by the Market Operator to administer the WESM, in order to:
 - (i) Identify appropriate steps and measures to help the Market Operator effectively and efficiently perform its responsibilities in time and form in accordance with the WESM Rules;
 - (ii) Review that the Market Operator practices and work processes ensure the necessary transparency, independence, predictability and non-discrimination, and are in compliance with the WESM Rules and best international practices; and
 - (iii) Assess if the systems, calculations, information flows and data management protect accuracy and quality of the data and results in generation scheduling, dispatch, prices and settlement, as well as if internal controls exist and are sufficient to guarantee security and confidentiality where appropriate, proposing recommendations to improve the procedures to collect and process the information and the controls of quality and security of data in the WESM.
- (c) Assess the usefulness and appropriateness of the interfaces and exchange of information between the System Operator and the Market Operator in relation to generation scheduling, constraints and dispatch; and
- (d) Review compliance by the Market Operator with the WESM Rules.

7.2.3 The PEM Auditor, with the assistance of the Market Operator, shall prepare standard terms of reference for the annual audit of the spot market and the Market Operator covering the general scope described in the previous paragraph. The standard terms of reference shall include the following tasks:

- (a) Verify that each and all software of the Market Operator has valid audit certificates;
- (b) Review the calculations and allocations performed to determine energy for the settlement calculations in each trading point and for each Trading Participant, and the adequacy of the metering systems;
- (c) Review the calculations and allocations performed in the settlement process, and the adequacy and usefulness of the settlement systems;
- (d) Review and assess the billing and settlement system;
- (e) Review and assess the procedures, processes and systems for generation scheduling and dispatch, including management of submission and validation of bids and offers as well as the adequacy and usefulness of the coordination arrangements and systems with the System Operator;
- (f) Review and assess the processes for software management and data protection;
- (g) Review that, in all the above matters, the Market Operator is in compliance with the WESM Rules and propose enhancements in processes to achieve best international practices; and
- (h) Except for the first audit, review the measures and actions taken by the Market Operator in view of the findings and recommendations of the previous audit, and assess the adequacy and effective results of such measures and actions.

7.2.4 The PEM Auditor shall submit to the PEM Board for review the proposed standard terms of reference of the annual audit. Within fifteen (15) days after the next PEM Board meeting, the PEM Board shall send its comments and observations. The PEM Auditor shall take into consideration the comments and observations received and revise the terms of reference accordingly. The standard terms of reference for the annual audit shall be published in the Market Information Website.

7.2.5 In view of the experience of the PEM Auditor in conducting audits and problems or other issues that may require auditing of the Market Operator, the PEM Auditor from time to time may revise the standard terms of reference of the Market Operator annual audit.

7.2.6 When necessary at the discretion and opinion of the PEM Auditor, the PEM Auditor shall request to contract an independent and qualified team to carry out all or part of the audit.

7.2.7 During the audit process, the PEM Auditor will be the coordinator with the contracted expert team and will be entitled to receive a copy of all reports and findings. Once the audit has finished and the experts submitted their final reports and recommendations, the PEM Auditor shall review the report and recommendations, to prepare and send to the Market Operator a preliminary Annual Audit Report, which shall include:

- (a) A summarized description of the audit process conducted by the auditor(s);
- (b) For each task or matter audited, general review and findings by the auditor(s);

- (c) Recommendations of the PEM Auditor in view of assessment and recommendations by the expert audit team, identifying any recommendation by such auditor(s) that the PEM Auditor has rejected and the reason(s) for the rejection; and
- (d) As an Annex, the final report of the expert auditors.

7.2.8 The Market Operator shall review the preliminary report, and may make observations or request clarifications or corrections. The PEM Auditor shall review the comments and observations received from the Market Operator, revise the preliminary report as necessary and prepare the final Annual Audit Report and send it to:

- (a) The Market Operator;
- (b) The PEM Board;
- (c) DOE; and
- (d) The ERC.

7.2.9 The final Annual Audit Report shall be published in the Market Information Website to be made available to WESM Members and the System Operator.

8 AUDIT OF THE MARKET ASSESSMENT SYSTEM

8.1. Each year or at such other regular period as may be determined by the PEM Board, the PEM Auditor shall conduct an audit of the market assessment system administered by the Market Assessment Group, and any procedures and working processes used by the Market Assessment Group in the collection, validation and processing of market monitoring data, and calculation of monitoring indices.

8.1.1 The Market Assessment Group shall provide assistance to the PEM Auditor in the formulation of the standard terms of reference in the selection of expert team to audit the Market Assessment System including the processes and procedures of the Market Assessment Group.

9 REVIEW OF WESM RULES

9.1 Technical Matters

9.1.1 At the same time as the annual audit, the PEM Auditor shall request the Technical Committee a review of technical matters covered in the WESM Rules and their adequacy to achieve the WESM Objectives.

9.1.2 Within fifteen (15) days from the receipt of the request, the Technical Committee shall prepare and submit to the PEM Auditor, with copy furnished to the PEM Board and the Rules Change Committee, a Technical Review Report with its review, observations and recommendations on technical matters in the WESM Rules, and any proposed amendments, if any, are required in view of:

- (a) Unintended effects or distortions in the operation of the WESM caused by the current technical provisions;

- (b) New technologies and improving the efficiency and the effectiveness of the operation of the spot market or metering arrangements; and
- (c) Improving or enhancing the prospects for the achievement of the WESM Objectives.

9.1.3 Any proposal for amendment to the WESM Rules shall be sent to the PEM Board using the standard form and including the content prescribed in the Rules Change Manual.

9.2 Annual Audit of Generation Scheduling and Dispatch Rules

9.2.1 As part of the annual audit, the PEM Auditor shall review –

- (a) The Market Operator's compliance with the scheduling and central dispatch procedures under the WESM Rules, in view of the processes, practices and staff of the Market Operator; and
- (b) The feasibility and adequacy of the scheduling and central dispatch procedures, software and systems prescribed or under the WESM Rules in light of the current conditions in the Philippines electricity industry and new development in technologies, dispatch methodologies and software.

9.2.2 Subject to PEM Board approval in accordance with the procedures established in this Manual, the PEM Auditor may contract a team of qualified experts to review and give their opinion on the adequacy of the procedures and criteria established in the WESM Rules in relation to generation scheduling and central dispatch.

9.2.3 As a result of the annual audit of the spot market and the Market Operator, the PEM Auditor shall indicate in the corresponding Annual Audit Report its opinion (or the opinion of external experts contracted for the audit) on the adequacy of the WESM Rules in relation to generation scheduling and centralized dispatch, and when necessary recommend amendments to the WESM Rules.

9.2.4 At least once every two years or in case of any material problem or disputes in relation to the dispatch and generation scheduling in the WESM, the PEM Auditor shall appoint a team or company of external auditors expert in dispatch and generation scheduling software, rules and procedures in competitive wholesale electricity markets and centralized economic security constrained dispatch, to audit the Market Operator software, procedures and processes and to recommend enhancements both in the processes and systems used by the Market Operator and in the related WESM Rules, as necessary. The results and recommendations of this special audit shall be included in the Annual Audit Report.

9.2.5 Any change recommended or observation to the WESM Rules presented in the Annual Audit Report shall be submitted by the PEM Auditor to

- (a) The PEM Board;
- (b) DOE; and
- (c) The Rules Change Committee.

9.3 Special Review of Generation Scheduling and Dispatch Rules

9.3.1 The PEM Board may, from time to time, request the PEM Auditor to review and assess specific WESM Rules and procedures in relation to generation scheduling, dispatch,

price calculation methodology and settlement, within a specified deadline but never shorter than fifteen (15) days. The PEM Auditor may request an extension if it considers that the assessment requires a longer review period.

- 9.3.2 Within the period specified or the extension approved, as applicable, the PEM Auditor shall submit to the PEM Board a Rules Review Report with its review, opinion and recommendations, including any recommended amendments to the corresponding WESM Rules. Any proposal to amend the WESM Rules shall be sent by the PEM Auditor to the PEM Board using the standard form and including the content prescribed in the Rules Change Manual.
- 9.3.3 If, in the opinion of the PEM Auditor, a more in depth review would be necessary, it may recommend to the PEM Board in its report:
- (a) The contracting external independent experts; or
 - (b) The review by the Technical Committee; or
 - (c) A special audit by the PEM Auditor on the implementation and procedures of the Market Operator in relation to the specific WESM Rules reviewed.

10 SOFTWARE OF THE MARKET OPERATOR

10.1 Objective

- 10.1.1 The Market Operator shall not implement a new software or associated system, or modify an existing software or its associated system for generation scheduling, dispatch or settlement or price calculation relevant to the WESM without –
- (a) Prior notice to all WESM Members and the PEM Board; and
 - (b) Undergoing the ICT Change Management Process.

All new software or modifications to existing software implemented through the ICT Change Management Process shall be subject to post audit and/or certification within one year from deployment. The ICT Change Management process is instituted by the Market Operator to ensure proper and timely review, approval, and monitoring of all activities on all stages of the change management process.

10.2 Software for the WESM

- 10.2.1 If the Market Operator wants to implement a new software for generation scheduling, dispatch, price calculation or settlement, or modify or replace an existing one, the Market Operator shall send a report to the PEM Auditor describing –
- (a) The software to be implemented (a new software) or the software to be modified;
 - (b) If an existing software is going to be modified or replaced, a description of –
 - (i) The reasons that justify the change, including any problem or shortfall identified in the existing software, if any;
 - (ii) Expected improvements, particularly in relation to transparency, efficiency, data processing and response time;

- (iii) The scope of the proposed modification or, if the existing software is going to be replaced, the description of the new software and main differences with the existing one;
- (c) If a new software is going to be implemented, a description of -
 - (i) The reasons that justify the new software, particularly the expected improvements in efficiency, data processing and response time;
 - (ii) The description of the new software;
 - (iii) The description of the tests performed and results that prove that the software has been sufficiently and adequately tested in trial mode, produces accurate results and is ready for implementation;
- (d) Findings and details thereof, proving that the modified or new software will be in full compliance with the WESM Rules.

10.2.2 The PEM Auditor shall review the report of the Market Operator and may request clarifications and further information. In particular, the PEM Auditor may organize a meeting with the relevant staff of the Market Operator to discuss the characteristics, any limitation or potential problem, and other conditions of the software that may impact predictability, transparency or compliance with the WESM Rules.

10.2.3 The review of the PEM Auditor shall encompass testing of the software to verify accuracy of results and compliance with all requirement and procedures established in the WESM Rules. The PEM Auditor shall request a series of test runs of the software to verify that it works properly, even in special conditions. Alternatively, the PEM Auditor may request the contracting of an external expert to test and certify the software.

10.2.4 After finalizing the review and tests, as applicable, and based on the information gathered and, if an external expert was used, the report with the review and recommendations of the expert, the PEM Auditor shall prepare and submit to the Market Operator and the PEM Board a Software Review Report. The outcome of the review and recommendation shall indicate –

- (a) If the software is ready for implementation and in compliance with the WESM Rules and the objectives; or
- (b) Recommendations on measures or changes prior to implementing the software, to ensure full compliance with the WESM Rules and its objectives.

10.3 Settlement Software

10.3.1 Each year during the month of June or prior to implementation of any modification to the existing settlement software, an independent auditor competent to carry out such type of audit, shall audit the settlement software to determine its consistency with the WESM Rules.

10.3.2 In any dispute in relation to settlement calculations, a certificate of such auditor that the settlement software is consistent with the WESM Rules shall be evidence that the charges or payments shown in a settlement statement have been calculated by a method consistent with the WESM Rules.

10.4 Software for WESM Members

- 10.4.1 Prior to implementing a new software to be used by WESM Members, or modifying or replacing an existing one, the Market Operator shall send a report to the PEM Auditor describing –
- (a) The software to be implemented (a new software) or the software to be modified, and the expected usage by WESM Members;
 - (b) Expected improvements for WESM Members, particularly in relation to accuracy, efficiency and consistency;
 - (c) The description of the tests performed and results proving that the software has been sufficiently and adequately tested and is ready to be used by WESM Members; and
 - (d) A description and details showing that the software calculations are accurate and in full compliance with the WESM Rules.
- 10.4.2 The PEM Auditor will review the report of the Market Operator and may request clarifications and further information. The PEM Auditor shall request a series of test runs to verify accuracy of results and that it works properly even in special conditions. With the results of these tests, the Market Operator shall correct the software, if necessary.
- 10.4.3 Once the PEM Auditor considers that the software is accurate and ready for use, the PEM Auditor will prepare and submit to the Market Operator a Software Review Report approving the software, with copy thereof furnished to the PEM Board. The Market Operator shall publish the approval in the Market Information Website and advertise the new software or the change to the existing software when ready for use by WESM Members.

11 METERING REVIEW

11.1 Background

- 11.1.1 In accordance with the Grid Code, the Metering Services Providers have the responsibility to supply, install, connect, own, test, calibrate, place in service, operate, check, and maintain the metering system for settlement, ensuring the accuracy and traceability of calibration and test results. Additionally, each Metering Services Provider shall take all reasonable steps to prevent unauthorized interference with the metering equipment.
- 11.1.2 As established in the Grid Code, a User shall have the right to request an audit of the settlement data related to its account and the right to choose an independent third party qualified to perform the audit. In such cases, the System Operator, Metering Services Providers and Market Operator shall cooperate in the auditing process.

11.2 Scope and Objectives

- 11.2.1 The general objective of the PEM Auditor metering review is to assess the adequacy of the metering standards and security systems and processes in the WESM.

11.2.2 Every year, the PEM Auditor shall review the security arrangements and requirement of metering installations. If considered necessary and convenient, the PEM Auditor may request the PEM Board approval of metering audits as part of the review process.

11.3 Consultation on Metering Arrangements

11.3.1 Each year before the month of November, the PEM Auditor shall organize a consultation process with the Market Operator, Trading Participants, the Technical Committee and all Metering Services Providers in relation to metering arrangements in the WESM. The PEM Auditor shall publish in the Market Information Website a request for the Market Operator, Trading Participants and Metering Services Providers to submit to the PEM Auditor during the next fifteen (15) days their comments and recommendations regarding –

- (a) Standards and requirements of metering installations;
- (b) Adequacy of work procedures of Metering Services Providers; and
- (c) Security arrangements associated to metering systems and processes.

11.4 Audit of Metering Arrangements and Compliance

11.4.1 When the annual metering arrangements review includes audits, as approved by the PEM Board, the PEM Auditor, supported by the Technical Committee, shall conduct an audit regarding,

- (a) Compliance with requirements of metering installations;
- (b) Compliance with security arrangements associated to metering systems and processes; and
- (c) Adequacy of security arrangements by the Market Operator and work procedures by Metering Services Providers.

11.4.2 To audit compliance, the PEM Auditor shall select a sample of metering sites, where at least thirty percent (30%) of which shall correspond to the metering points with largest volume within the WESM, where metering errors or inadequacy can create the biggest impact and volume error in the WESM.

11.4.3 The PEM Auditor shall designate staff of the Technical Committee as field auditors to perform compliance tests on the security processes and metering installations standards.

11.5 Review of Metering Arrangements

11.5.1 The PEM Auditor shall review the adequacy and quality of the security arrangements taking into consideration –

- (a) Best practices in other competitive electricity markets;
- (b) Available technology; and
- (c) Comments and recommendations received during the consultation process.

- 11.5.2 The PEM Auditor shall review the adequacy and compliance with the requirements of metering installations taking into consideration –
- (a) Available metering technology and its costs;
 - (b) Practices in other competitive electricity markets to have adequate metering installations that are not unnecessarily costly; and
 - (c) Comments and recommendations received during the consultation process.
- 11.5.3 If the review process includes audits of metering systems and arrangements, the PEM Auditor shall also take into consideration findings and results of the field auditors.
- 11.5.4 Before the end of November, the PEM Auditor shall prepare a Metering Arrangements Report with its review and recommendations. The report shall include, as Annexes, the following:
- (a) The PEM Auditor recommendations;
 - (b) If the review process included audits of metering systems and arrangements, the main finding and recommendations of the field auditors; and
 - (c) The summary of the comments and recommendations received during the consultation process, identifying the party or parties that sent each type of comment or recommendation and, in case the observation or recommendation was rejected by the PEM Auditor, the reason for the rejection.
- 11.5.5 The PEM Auditor shall send the Metering Arrangements Report to the PEM Board and the Market Operator, for publication in the Market Information Website.

12 COMPLIANCE WITH WESM RULES

- 12.1.1 As established in the Compliance and Enforcement Market Manual, assessment of alleged breaches shall be a responsibility of the ECO, and Investigations of an alleged breach shall be conducted either by the ECO or the MSC. The PEM Auditor shall not be assigned the responsibility of carrying out an Investigation. However, if requested by the ECO, the PEM Auditor may support the Investigation of an alleged breach by providing opinion or conducting audits, including findings and recommendations.
- 12.1.2 In performing the ECO's functions in assessing or investigating an alleged breach pursuant to the Compliance and Enforcement Market Manual, the ECO may request the PEM Auditor to assess or audit a WESM Member, the System Operator or the Market Operator in relation to compliance with specific rules or standards or procedures in relation to generation scheduling, dispatch, bidding, prices and settlement, as established by the WESM Rules. The ECO shall inform the party or parties in alleged breach the matters that have been derived to the PEM Auditor for assessment or audit.
- 12.1.3 When the investigation of an alleged breach has been referred to the MSC, the MSC may recommend an audit by the PEM Auditor. In such case, the ECO shall request and coordinate with the PEM Auditor the required audit, as established in the previous paragraph.

- 12.1.4 Under confidentiality obligation, the ECO shall provide the PEM Auditor all the required information and data to assess the alleged breach or to identify the details to be audited.
- 12.1.5 The party in alleged breach has the obligation to cooperate with the PEM Auditor in the assessment or audit process, providing all the relevant data and other information requested by the PEM Auditor and allowing the necessary tests and audits.
- 12.1.6 In case the party objects to submitting the data or information requested by the PEM Auditor, the PEM Auditor shall request the MSC to request such data and information, and the MSC then shall provide it to the PEM Auditor within the established confidentiality provisions. If the party does not provide the data and information requested to the MSC, it shall be considered a breach to the WESM Rules.
- 12.1.7 In all cases, the party is obliged to allow and facilitate the tests and audits requested by the PEM Auditor, provided that the PEM Auditor shall give an advance notice of not less than five (5) business days for any test or audit required, including a description of the scope and details of the test and audit. Not allowing the test or audits requested by the PEM Auditor shall be considered a breach.

13 DATA AND INFORMATION

13.1 The System Operator

- 13.1.1 The System Operator shall ensure an audit trail of documentation that is fully adequate to substantiate and reconstruct all relevant actions performed. For data and documents related to the WESM Rules and this Manual, such audit trail shall be maintained for a period of at least seven (7) years, unless specified otherwise in the WESM Rules or other Applicable Law, Rules and Regulations.
- 13.1.2 The System Operator shall provide the PEM Auditor or auditors designated by the PEM Auditor, all the information required for auditing purposes, within the timeframe and format as may be required by the PEM Auditor or designated auditors.
- 13.1.3 The System Operator shall retain the information provided by WESM Members and the Market Operator, and the data calculated and reports prepared in the planning and operation of the system, for the period and in accordance to the conditions established in the WESM Rules and the Grid Code. The storing of such information shall be appropriate for reasonable access as may be required for auditing purposes.

13.2 The Market Operator

- 13.2.1 The Market Operator shall ensure an adequate audit trail of documentation to substantiate and reconstruct all relevant actions performed. For data and documents related to the WESM Rules and this Manual, such audit trail shall be maintained for a period of at least seven (7) years, unless specified otherwise in the WESM Rules or other Applicable Law, Rules and Regulations.
- 13.2.2 The Market Operator shall provide the PEM Auditor or auditors designated by the PEM Auditor all the information required for auditing purposes, within the timeframe and format as the PEM Auditor or designated auditors may require.

13.2.3 The Market Operator shall retain information provided by the System Operator, and other WESM Members, and the data calculated and reports prepared in generation scheduling, dispatch and administration of the WESM and its settlement system, in accordance with the WESM Rules. The storing of such information shall be appropriate for reasonable access as may be required for auditing purposes of the WESM and the Market Operator.

13.3 Obligations of a Party Audited

13.3.1 A party audited shall submit in a timely manner the complete data, documents and other information requested by the PEM Auditor or an auditor (field auditor or expert auditor) designated by the PEM Auditor in accordance with this Manual.

13.3.2 When a party is notified that an audit will be conducted, the party shall cooperate with the audit and shall provide the PEMC staff or other experts designated as auditors, access to the facilities, systems and information to be audited.

13.4 The PEM Auditor

13.4.1 The PEM Auditor shall not disclose any information obtained in carrying out its functions and responsibilities, or any finding and recommendations resulting from an audit process, except as provided in this Manual and the WESM Rules.

13.4.2 The PEM Auditor shall not use any information, be it confidential or not, obtained in carrying out its functions and responsibilities for other purposes that those established in this Manual and the WESM Rules.

13.5 Confidentiality

13.5.1 When applicable in accordance to the confidentiality provision in the WESM Rules and this Manual, information submitted to the PEM Auditor will be designated and marked as "Confidential" and will be administered with measures considered by the PEM Auditor as necessary and reasonable to protect the confidentiality.

13.5.2 A party providing any document or other information in the course of an audit may request that the document or information be designated as confidential, if such document or information qualifies as confidential according to the confidentiality provisions in the WESM Rules. The PEM Auditor shall assess the confidentiality claim and, at its own discretion, determine the validity of the request. If the PEM Auditor agrees that the document or information qualifies as confidential, the document or information will be designated and marked as "Confidential".

13.5.3 The PEM Auditor and each member of the Audit Committee, Technical Committee and other external auditors shall enter into a confidentiality agreement with the entity providing the information, the terms of which shall be prescribed by the PEM Board.

14 LIMITATION OF LIABILITY AND INDEMNIFICATION

14.1.1 In performing its audit and review functions and responsibilities as contained in this Manual, the PEM Auditor and any member of the Audit Committee or the Technical Committee shall not be personally liable for any loss or damage suffered or incurred by a WESM Member, the System Operator, the Market Operator or any other person as a consequence of any act or omission of those persons in the performance of their

functions unless the PEM Auditor or the member of the Audit Committee or the Technical Committee, as the case may be, acted with malice, manifest partiality, bad faith, gross incompetence or gross negligence.

14.1.2 Except for liability arising out of conduct involving malice, manifest partiality, bad faith, gross incompetence or gross negligence, if the PEM Auditor or a member of the Audit Committee or the Technical Committee is made liable to pay any amount for loss or damage suffered or incurred by any person or entity as a consequence of any of its acts or omissions in the performance of its duties, the PEMC shall indemnify said persons through an indemnification process to be developed by the PEM Board. Said indemnification shall cover:

- (a) The full amount adjudged; and
- (b) The costs and expenses incurred by the PEM Auditor and the member of the Audit Committee or the Technical Committee, as applicable, in defending itself in the related proceeding(s).