

**MINUTES OF THE 86th MEETING OF THE RULES CHANGE COMMITTEE**

Meeting Date & Time:	02 April 2014 – 09:00 AM to 2:00 PM		
Meeting Venue:	PEMC, 9 <sup>th</sup> Floor Training Rooms 2 and 3, Robinsons Equitable Tower, Ortigas Center, Pasig City		
Attendance List			
In-Attendance		Not In-Attendance	
Rules Change Committee Members			
Rowena Cristina L. Guevara --Chairperson/ Independent --UP Francisco L. R. Castro, Jr. --Independent--Tensaiken Consulting Maila Lourdes G. De Castro --Independent Ambrocio R. Rosales --System Operator --NGCP Jose Ferlino P. Raymundo --Generation -- SMC Global Jose P. Santos --Distribution --INEC Isidro E. Cacho, Jr. -- Market Operator --PEMC Lorreto H. Rivera --Supply --TPEC Sulpicio C. Lagarde, Jr. --Distribution --CENECO		Concepcion I. Tanglao -- Independent Gilbert A. Pagobo -- Distribution --MECO Ciprinilo C. Meneses -- Distribution, MERALCO Theo Cruz Sunico -- Generation -- 1590 EC Joselyn D. Carabuena -- Generation -- PSALM	
Rules Change Committee Alternate Members			
-			
PEMC – Market Assessment Group (MAG) Geraldine A. Rodriguez Romellen C. Salazar Divine Gayle C. Cruz			
PEMC – Legal - Maria Lourdes S. Sabundayao			
ERC Observer(s)			

**DOE Observer(s)**  
Ferdinand B. Binondo

**Others Present**  
-

There being a quorum, Chairperson Dr. Rowena Cristina L. Guevara called the meeting to order at around 9:29 AM.

**1. Adoption of the Proposed Agenda**

The Proposed Agenda for the 86th RCC Meeting was approved as amended with the inclusion of the Proposed Amendments relative to the Management of Must-Run Units (MRU) as Business Arising from previous RCC meetings.

**2. Reading of the Minutes of Meeting**

**o Minutes of the 84th RCC Meeting**

The RCC reviewed the 84th RCC Minutes and made the following corrections on the said minutes.

Ms. Romellen C. Salazar informed the Committee that the minutes as printed and disseminated to the RCC have not reflected some of the comments belatedly received by the Secretariat and she pointed to the Minutes flashed on screen which already reflected the correction of the RCC members, Mr. Ambrocio R. Rosales and Mr. Isidro Cacho as follows:

- on page 4, lines 29 to 35 - The SO can do a one-time submission of the required level of reserve to MO, for instance, the 4% for the required level of Regulating reserve. This figure would not be changed unless the ASPP will be revised as approved by ERC. However, the determination of the MW level requirement for each trading interval would be the MO's responsibility, in which the amount in MW will be based on the MO's forecasted demand.
- on page 4, lines 37 to 39 - Mr. Rosales stated that the reason for using as reference the latest DAP run of every 4 hours is that it is the most realistic and doable forecasted demand that can be provided by MO in identifying the required reserve level.

- On page 4, lines 41 to 42 - Mr. Rosales clarified that DAP is based on the dispatch loading rather than that of the capacity of the generator.
- On page 18, lines 84 to 99 - He therefore expressed disagreement with the PEMC's proposal to allow the generator to submit offers for all types and likewise be scheduled for all types of reserves for a single unit, because in the end, the actual provision of reserve service will only be for a single type of reserve. He added that if multiple type of reserves was scheduled for a single unit, the customers would have to pay all types of reserves even if in reality, there is no actual provision of the reserve. He added that the SO is not capable of monitoring the REF of each type of reserve scheduled at the same time for a single unit. It would be very difficult to identify and monitor on which type of reserves was being provided actually. Likewise, this does not also include the monitoring of the reserve effectiveness factors for multiple types of reserves for a single unit.
- On page 18, line 104 - . Based on the previous DAP schedule, the MO will determine the MW equivalent of the 4% reserve level requirement for RR, while for Contingency Reserve and Dispatchable Reserve requirement, the MO shall use the latest DAP run, to identify the highest and 2<sup>nd</sup> to the highest dispatch loading of the generators for every trading interval.
- On page 18, line 116 to 119 -. He noted however that based on the MO's proposal, the closest and most realistic schedule that the MO could provide to be able to determine the Contingency Reserve and Dispatchable Reserve requirement is the latest 4-hour DAP run.

During the review of the minutes, Dr. Guevara inquired on the basis for the  $\pm 2\%$  operating bandwidth for Regulating Reserve. She said that there should be a definite basis for the use of the same. It was clarified that the 4% required level by SO which was the basis for the  $\pm 2\%$  for Regulating Reserve is actually not yet in the ASSP but is in the Maximum Allowable Revenue (MAR) of NGCP as filed by the NGCP with the ERC. Nevertheless, Dr. Guevara emphasized on the need to provide solid rationale for splitting the bandwidth halfway and the basis for arriving at the 4%.

Ms. Geraldine Rodriguez informed the RCC that approved amendments on the Reserve will be effective for a period of 6 months and the RCC would have the chance to review the approved amendments in case further amendments need to be made on the document.

Following the above discussion and noting the comments made on some items of the meetings, the RCC on motion made and seconded, approved the Minutes of the 81st RCC meeting as amended.

### o **Minutes of the 85th RCC Meeting**

On page 5, on the matter of the Proposed Amendments on the Disconnection Procedure, Dr. Guevara inquired if disconnection is physically done, by someone assigned to physically disconnect the facility or there is a simply switch turned on to disconnect customer. Mr. Rosales responded that disconnection may be done in three ways: physically, through the control through the substation, or by remote control

Related to the Proposed Amendments on the Disconnection Procedure, Dr. Guevara inquired whether MERALCO already has submitted its comments to the proposal. The Secretariat replied that MERALCO has not submitted its comments.

On a query posed by Dr. Guevara, why the Proposed Amendment has not been posted yet, the Secretariat explained that the same has not been posted yet as the RCC was still waiting for MERALCO's comments before the same is posted. The Secretariat recalled that initially, the proposal was presented by the generator sector's Mr. Theo Sunico, but the RCC, finding some of the provisions unimplementable remanded the same and suggested that inputs be solicited from the SO, MO and MERALCO. A subcommittee composed of the generators, SO, MO and MERALCO was thus organized and which thereafter met to polish the proposal. So far, it was only MO and SO which have submitted comments on the proposal.

Dr. Guevara instructed that the RCC already proceed with the finalization of the proposal on disconnection for the RCC's deliberation in its next meeting notwithstanding the absence of comments from MERALCO. The Secretariat duly noted the instruction.

There being no correction on the 85th RCC minutes, on motion and seconded, approved the Minutes of the 85th RCC meeting as presented.

### **3. Business Arising from the Previous Meeting**

#### o **Amendments to the Manual on CVC Relative to Reserve Market: Result of Simulation on CVC Priority**

Mr. Edward Olmedo made a presentation on the Result of Simulations on the Revised CVC Priority Table. As a backgrounder, he informed the RCC, that the revisions on the CVC Priority Table emanated from the need to re-order operational priorities prior to the integration of the Reserve Market into the Commercial Operations of the WESM. He explained that during the last RCC discussions on 21 February 2014, during which the urgent proposal on the amendment of the Manual

on CVCs was discussed, the RCC members felt the need to further revise the CVC Priority Order Table in view of other operational priorities. As such, simulations were performed to determine its impact on the market results. The simulations assumed the latest revised Priority Table as of 25 February 2014.

Mr. Olmedo explained that Constraint Violation Coefficients, or CVCs, are incorporated in the MDOM so as to:

- Ensure that the market dispatch model will always find a solution which satisfies all constraints, if such a solution exists;
- Ensure that binding constraints are prioritized, such that constraints resulting in the lowest reduction in the capability of the network, load or generating units will occur first;
- Ensure that the prices produced by the market optimization algorithm will be appropriate in all the circumstances, taking into consideration the processes defined in WESM Rules Section 3.10 to adjust or override those prices for settlement purposes. He presented several CVC sample scenarios.

He explained that the objective function of the MDOM is to maximize gain from trade:

- ☐ Benefits of dispatched load based on dispatch bids,
- ☐ Minus the costs of dispatched generation based on dispatched offers,
- ☐ Minus the costs of dispatched reserves based on reserve offers,
- ☐ **Minus the penalty costs of constraint violations.**

captured in the following formula:

$$\text{ECONOMIC GAIN} = \text{Maximize } \left\{ \sum_i (\text{DB})(\text{CDB}) - \sum_i (\text{G})(\text{CG}) - \sum_i (\text{R})(\text{CR}) - \sum_i (\text{VP})_m \right\}$$

Or in the absence of demand side bidding,

$$\text{TOTAL GEN COST} = \text{Minimize } \left\{ \sum_i (\text{G})(\text{CG}) + \sum_i (\text{R})(\text{CR}) + \sum_i (\text{VP})_m \right\}$$

From the standpoint of policy, Mr. Ferdinand B. Binondo commented that in one of the sample scenarios given, the correct signal was not reflected, i.e instead of under-generation, the correct signal should be base case because there was no true under-generation in the first place. The RCC agreed with the observation that since the solution chosen was the least cost, the base case scenario (thermal limit) being in the higher priorities in the CVC Table with a higher CVC value was not chosen.

Mr. Binondo further commented that while the final solution for the scenario being discussed is under-generation (which has a corresponding CVC price), since the MDOM finds that under-generation is the least costly solution, the reason for said "under-generation" is what is conveyed to the Participants. Mr. Rosales seconded that what is being signaled is there was "under-generation" when in fact no problem in supply capacity exists. Mr. Jose Ferlino P. Raymundo agreed that in effect what is being conveyed to Participants is there was "under-generation", when in fact, transmission constraints is the problem which should be addressed. Mr. Olmedo said that once the MO hits a line with a binding constraint, the same is also reflected in the set of results that MO reports.

The RCC agreed that when issuing Pricing Error Notices (PENs), the reason for the PEN must be appropriately relayed to the Participants. Further, Mr. Rosales stated that the reason for issuing PENs should not be based on the final solution, but rather, on why such a solution came about.

Mr. Olmedo explained that the information on congestion component, (like congested lines and equipment) in the scenario shown, is being broadcasted by the MO to the participants through a system advisory and is likewise captured in the Daily Market Updates (DMUs).

Dr. Guevara clarified that the RCC has no question with regard to the prioritization of CVCs. The issue, however, emanates from the information and the incorrect signals given by the CVC values.

The RCC's comments on the simulations shown by Mr. Olmedo were summarized as follows: 1) There should be no switching in the prioritization based on the CVC Priority table when the MDOM tries to find a solution, thus, the MO should consider revising the CVC values in the table; and 2) The information being conveyed to the Participants should provide correct signals to the Participants.

Dr. Guevara commented that perhaps before the co-optimization of reserve and energy is undertaken, these values should already be corrected and validated through further simulation of the values by MO.

The MO was requested to present in the next meeting a simulation that would show the correct values of the CVCs.

o **Proposed Amendments relative to the Management of Must-Run Units (MRU)**

Changes were further adopted by the RCC relative to the proposals, specifically the Dispatch Protocol Manual and the MRU Manual. (Please refer to Annexes A and B for the matrices of changes to these manuals.)

Dr. Guevara instructed that the proposed changes to the WESM Rules and corresponding manuals be posted in the Website for comments of all concerned.

o **Updates on the 2014 RCC Work Plan**

The RCC presented the updated 2014 Work Plan based on inputs from respective parties, particularly on the adjustment in the timelines. The information was duly noted by the RCC.

**4. New Business**

o **Proposed Amendments to Various Market WESM and Retail Manuals in Relation to the Dispute Resolution Management**

Atty. Morillos presented to the RCC, for approval, the proposed amendments to the following WESM and Retail Market Manuals:

- ✓ WESM Manual on Metering Standards and Procedures
- ✓ WESM Manual on Registration, Suspension, and De-registration Criteria and Procedures
- ✓ Retail Manual on Metering Standards and Procedures
- ✓ Retail Manual on Registration Criteria and Procedures
- ✓ Retail Manual on Market transaction Procedures

According to the DRA, the proposal aims to:

- ✓ Delete Section 1.3.4 of the WESM Manual on Metering Standards and Procedures
- ✓ Add the WESM Dispute Resolution Market Manual as reference in the WESM Manual on Registration, Suspension, and De-registration Criteria and Procedures
- ✓ Delete section 1.4.1 (e) from the Retail Manual on Metering Standards and Procedures
- ✓ Add the WESM Dispute Resolution Manual as reference in the Retail Manual on Registration Criteria and Procedures and
- ✓ Add the WESM Dispute Resolution Manual as reference in the Retail Manual on Market transactions Procedures

The DRA said that the focus of the proposed amendment is on Section 1.3.4 on the WESM Manual on Metering Standards and Procedures and 1.4.1 (e) of the Retail Manual on Metering Standards and Procedures which basically carried the same provision deemed to be inconsistent with the recently - approved provisions of the Dispute Resolution Market Manual. These provisions are as follows:

*1.3.4. The **Dispute Resolution Administrator** shall be responsible for the **investigations** on any infractions of the Trading Participants/Metering Services*

*Provider or in cases where disputes which may arise involving meter data or tampering of any metering facilities that is detrimental to the integrity of the meter data;*

1.4.1 (e) The **Dispute Resolution Administrator** shall be responsible for the **investigation** of any infraction by a Retail Metering Services Provider of a Contestable Customer, cases where disputes involved metering data, and tampering of any metering installation that is detrimental to the integrity of the metering data;

The DRA recommended the deletion of these provisions in the Metering Manuals in the WESM and Retail since the function of the DRA from the quoted provisions is inconsistent, if not in conflict, with his duties specified in the WESM Dispute Resolution Market Manual (DRMM). Moreover, he stated that the DRA is not involved in the resolution of disputes, except to administer the appointment of those who are, i.e., the WESM Arbitrators.

He explained that that "Infraction" and "tampering", which are to be *investigated* under the quoted provisions, **do not** make an *inter-partes* ('between the parties') dispute for resolution and that only the civil/commercial/business "damages" arising from the incorrect *metering data* should be a matter of consideration in the dispute resolution under the WESM Dispute Resolution Market Manual (DRMM).

The DRA instead proposed that the Dispute Resolution Market Manual be mentioned by way of reference documents to the following Manuals: WESM Manual on Registration, Suspension, and De-registration Criteria and Procedures; Retail Manual on Registration Criteria and Procedures; and the Retail Manual on Market Transactions Procedures.

Dr. Guevara acknowledged that that a dispute may still fall under the lap of the DRA, but queried the DRA on who will make the investigation, in case of alleged infractions or tampering, since the DRA already proposed the deletion of this provision. DRA Morillos responded that investigation may be done by the Market Surveillance Committee (MSC), the Enforcement and Compliance Office (ECO) or by the parties themselves, as triggered by the metering data that impacted on their costs which data may then thereafter be admitted by the Arbitrators as a passive person.

Dr. Guevara asked if it would be possible then for the ECO and the MSC to replace the DRA in the said questioned provisions. The DRA responded that this is already addressed through the Manuals that pertain to MSC/ECO as their function to investigate is already indicated in their own manuals.

Ms. Lorreto H. Rivera asked where they may inquire on meter concerns now that the provision has been deleted. Additionally, she inquired where disputes may be lodged in case of meter concerns. The DRA said that the inquiry may be made with the PEMC executives or the Metering Service Provider. On the other hand, disputes will be handled by the Dispute Resolution Administrator.

The RCC after reviewing the proposal thereafter approved the posting of the proposal in the WESM website, as presented, to solicit comments of Participants.

#### 5. Work Plan

The RCC presented the updated 2014 Work Plan based on inputs from respective parties, particularly on the adjustment in the timelines. Dr. Guevara reminded everyone to commit themselves to the work plan having noted the moving timelines and the uneven distribution of the deliverables in the last two quarters. She requested the RCC to submit earlier than scheduled timelines if possible.

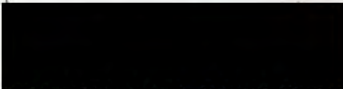
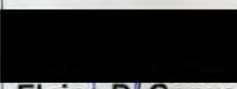
The information was noted by the RCC.

#### 6. Next Meeting

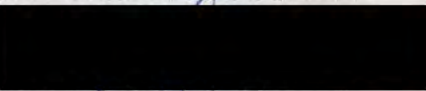
The RCC agreed to hold its next meeting on 07 May 2014.

#### 7. Adjournment

There being no other matter to be discussed, the meeting was adjourned at around 2:30 PM.

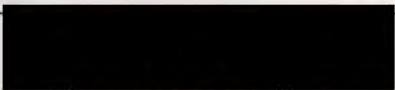
Prepared By:	Noted By:
 Geraldine A. Rodriguez	 Elaine D. Gonzales
<i>Assistant Manager – Market Governance Administration Unit Market Assessment Group</i>	<i>Manager – Market Data and Analysis Division Market Assessment Group</i>

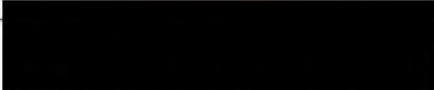
Approved by:  
RULES CHANGE COMMITTEE

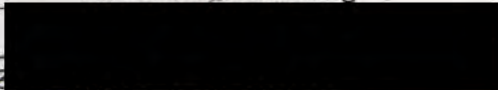
  
**Rowena Cristina L. Guevara**  
Chairperson  
Independent  
University of the Philippines  
(UP)

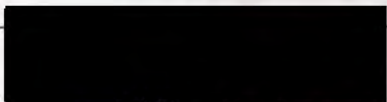
Members:

**Concepcion I. Tanglao**  
Independent


  
**Francisco L.R. Castro, Jr.**  
Independent  
Tensaiken Consulting

  
**Maila Lourdes G. de Castro**  
Independent


  
**Lorreto H. Rivera**  
Supply Sector  
Team (Philippines) Energy Corporation

  
**Jose P. Santos**  
Distribution Sector (EC)  
Ilocos Norte Electric Cooperative, Inc.  
(INEC)

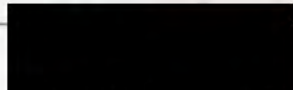
**Ciprinilo C. Meneses**  
Distribution Sector (PDU)  
Manila Electric Company  
(MERALCO)

  
**Sulpicio C. Lagarde Jr.**  
Distribution Sector (EC)  
Central Negros Electric Cooperative, Inc.  
(CENECO)

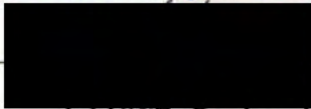
**Gilbert A. Pagobo**  
Distribution Sector  
Mactan Electric Company  
(MECO)

  
**Jose Ferlino P. Raymundo**  
Generation Sector  
SMC Global

**Joselyn D. Carabuena**  
Generation Sector  
Power Sector Assets and Liabilities Management  
Corporation (PSALM)

  
**Ambrocio R. Rosales**  
Transmission Sector  
National Grid Corporation of the Philippines  
(NGCP)

**Theo C. Sunico**  
Generation Sector  
1590 Energy Corporation



**Isidro E. Cacho, Jr.**  
Market Operator  
Philippine Electricity Market Corporation  
(PEMC)

## Revisions made to the Proposed Amendments to the DPM

## Annex A

Original Provision	Proposed Amendment	Rationale	RCC Changes 02 April 2014	Reason for Change
APPENDIX A.3 OUTAGE SCHEDULING				
<p><b>3. RESPONSIBILITIES</b></p> <p><b>3.1. Trading Participant</b></p> <p>The Trading Participant shall comply with the timely submission of outage schedule requests to the System Operator in accordance with the WESM Timetable.</p> <p>The Trading Participant shall submit to the System Operator a three year/long-term outage plan and annual maintenance outage plan of their Generating Units as required in the Grid Operation and Maintenance Program of the Grid Code.</p>	<p><b>3. RESPONSIBILITIES</b></p> <p><b>3.1. Trading Participant</b></p> <p><u>The Trading Participant shall submit to the System Operator a three year/long-term outage plan and annual maintenance outage plan of their Generating Units as required in the Grid Operation and Maintenance Program of the Grid Code.</u></p> <p>The Trading Participant shall comply with the timely submission of outage schedule requests to the System Operator in accordance with the WESM Timetable <u>and PGC 6.4.1.3. The outage schedule must be forwarded to the System Operator at least seven (7) days prior to the actual Shutdown or maintenance.</u></p> <p><u>The Trading Participant shall submit to the System Operator a three year/long-term outage plan and annual maintenance outage plan of their Generating Units as required in the Grid Operation and Maintenance Program of the Grid Code.</u></p>	<p>Change in the order of the paragraphs for clarity.</p> <p>Cited the relevant provisions of the PGC. Indicated the lead time for SO to be informed prior to actual shutdown or maintenance.</p>	<p><b>3.1. Trading Participant</b></p> <p><u>The Trading Participant shall submit to the System Operator a three year/long-term outage plan and annual maintenance outage plan of their Generating Units as required in the Grid Operation and Maintenance Program of the Grid Code.</u></p> <p>xx</p>	<p>The RCC agreed to remove this provision in their proposed amendment citing that it may not be appropriate to reflect it in the Dispatch Protocol Manual since the DPM talks about a time frame of a week ahead or at most seven (7 ) days.</p>
APPENDIX A.4			APPENDIX A.4	
<p><b>4.3 Assessment of Contingency for the Real Time Dispatch</b></p> <p>The System Operator shall perform contingency planning for the morning and afternoon for the Day Ahead Market and the evening peak of the current day. Hereunder is the timetable in the preparation of a contingency plan for the</p>			<p><b>4.3 Assessment of Contingency for the Real Time Dispatch</b></p> <p><u>The System Operator shall perform contingency planning for the morning and afternoon for the Day Ahead Market and the evening peak of the current day. Hereunder is the timetable in the preparation of a contingency plan for the</u></p>	<p>Agreed to have it deleted as the same is no longer being done by SO.</p> <p>The preparation of a contingency list is anyway already under 3.1 of Appendix A.4.</p>

aforementioned periods:		aforementioned periods:																									
<table><tr><th>Target Period</th><th>Of</th><th>Result</th></tr><tr><td>Morning Peak</td><td>Day + 1</td><td>Result</td></tr><tr><td>Afternoon Peak</td><td>Day + 1</td><td>Result</td></tr><tr><td>Evening Peak</td><td>Current Day</td><td>Result</td></tr></table>	Target Period	Of	Result	Morning Peak	Day + 1	Result	Afternoon Peak	Day + 1	Result	Evening Peak	Current Day	Result		<table><tr><th>Target Period</th><th>Of</th><th>Bas</th></tr><tr><td>Morning Peak</td><td>Day + 1</td><td>Results of DA</td></tr><tr><td>Afternoon Peak</td><td>Day + 1</td><td>Results of DA</td></tr><tr><td>Evening Peak</td><td>Current Day</td><td>Results of DA</td></tr></table>	Target Period	Of	Bas	Morning Peak	Day + 1	Results of DA	Afternoon Peak	Day + 1	Results of DA	Evening Peak	Current Day	Results of DA	
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APPENDIX A.5 PRE-DISPATCH MARKET PROJECTION																											
<p><b>4.2.8. Security Limits</b> Security Limits are often used to reflect system stability limits and they vary under different system conditions. Security Limits as described in this document covers generator operating limits and transmission branch group limits:</p> <ul style="list-style-type: none"><li>Generator operating limits (Pmin, Pmax) may vary based on different plant and system conditions. Some generators are required to produce no less than certain amount of output for system reliability reasons. Some generators are required to restrain their output due to stability considerations. Generating units nominated by the System Operator as a "Must Run Unit" falls in this category. Refer to WESM Criteria for Must Run Units for more details.</li></ul> <p>xxxx</p>	<p><b>4.2.8. Security Limits</b> Security Limits are often used to reflect system stability limits and they vary under different system conditions. Security Limits as described in this document covers generator operating limits and transmission branch group limits:</p> <ul style="list-style-type: none"><li>Generator operating limits (Pmin, Pmax) may vary based on different plant and system conditions. Some generators are required to produce no less than certain amount of output for <u>Ssystem Security and Rreliability</u> reasons. Some generators are required to restrain their output due to stability considerations. Generating units nominated by the System Operator as a "Must Run Unit" falls in this category. Refer to the WESM <u>Criteria for Manual on the Management of</u> Must-Run Units for more details.</li></ul> <p>xxx</p>	<p>Revised to reflect the correct title of the WESM Manual being referred to</p>	<p>The RCC agreed to retain the name of the Manual on the Management of Must-Run Units</p>																								
APPENDIX A.6 REAL TIME DISPATCH SCHEDULE																											
4. PROCEDURE	4. PROCEDURE																										

## Revisions made to the Proposed Amendments to the DPM

## Annex A

<p><b>4.1. Market Dispatch Optimization Model (MDOM)</b></p> <p>The MDOM determines the optimal dispatch schedule for each of the trading interval based on market bids/ offers received by the Market Operator subject to the different constraints imposed in line with the physical limitations of the assets of the Network Service Providers and generation assets.</p> <p>The Real Time Dispatch utilizes the MDOM to calculate the following:</p> <ul style="list-style-type: none"> <li>• The dispatch schedules and nodal prices (Ex-ante) of all facilities connected to the Grid in the next trading interval (RTD)</li> <li>• The resulting nodal prices (Ex-post) based on the actual dispatch of facilities for a particular trading interval (RTX)</li> </ul> <p>For the RTD, the dispatch schedule is the target loading level in MW for each scheduled generating unit or scheduled load and for each reserve facility for the end of a trading interval.</p> <p>Refer to WESM Price Determination Methodology (PDM) for the other details of the MDOM.</p>	<p><b>4.1. Market Dispatch Optimization Model (MDOM)</b></p> <p>The MDOM determines the optimal dispatch schedule for each of the trading interval based on market bids/ offers received by the Market Operator subject to the different constraints imposed in line with the physical limitations of the assets of the Network Service Providers and generation assets.</p> <p>The Real Time Dispatch utilizes the MDOM to calculate the following:</p> <ul style="list-style-type: none"> <li>• The dispatch schedules and nodal prices (Ex-ante) of all facilities connected to the Grid in the next trading interval (RTD)</li> <li>• The resulting nodal prices (Ex-post) based on the actual dispatch of facilities for a particular trading interval (RTX)</li> </ul> <p>For the RTD, the dispatch schedule is the target loading level in MW for each scheduled generating unit or scheduled load and for each reserve facility <u>for the from the start until the end of a trading interval. The Generators shall ramp-up or ramp-down to their target loading level in accordance with their declared ramping capability. Deviations from these target loading levels will be measured in terms of MWhr subject to the compliance with the dispatch tolerance standards.</u></p> <p>Refer to WESM Price Determination Methodology (PDM) for the other details of the MDOM.</p>		<p>xxx</p> <p>xxx</p> <p>xxx</p> <p>xxx</p> <p>For the RTD, the dispatch schedule is the target loading level in MW for each scheduled generating unit or scheduled load and for each reserve facility <u>for the from the start until the end of a trading interval. The Generators shall ramp-up or ramp-down linearly to their target loading level in accordance with their declared ramping capability. Deviations from these target loading levels will be measured in terms of MWhr subject to the compliance with the dispatch tolerance standards.</u></p>	<p>RCC agreed to delete the phrase " in accordance with their declared ramping capability" as it might be inconsistent with the requirement for the requirement on linear ramping and linearly as a qualification on the manner of ramping up and down. The use of MWhr was retained since it was agreed that the same is implementable.</p>
<p><b>4.2.5 System Reserve Requirements</b></p> <p>System reserve requirements are system demands for regulation reserve, contingency reserve and other relevant types of reserves. They are</p>	<p><b>4.2.5. System Reserve Requirements</b></p> <p>System reserve requirements are <u>the level of reserve requirements in accordance with the Ancillary</u></p>	<p>The RCC agreed to refer to the ASPP and the PGC, and to likewise delete the details since these details may be changed in the future.</p>	<p><b>4.2.5. System Reserve Requirements</b></p> <p>System reserve requirements are <u>the level of reserve requirements in accordance</u></p>	<p>Agreed to include the word latest for clarification.</p>

determined based on system loading, maximum generator tripping and other considerations.	<u>Services Procurement Plan and the Philippine Grid Code. system demands for regulation reserve, contingency reserve and other relevant types of reserves. They are determined based on system loading, maximum generator tripping and other considerations.</u>		with the <u>latest Ancillary Services Procurement Plan and the Philippine Grid Code. system demands for regulation reserve, contingency reserve and other relevant types of reserves. They are determined based on system loading, maximum generator tripping and other considerations.</u>	
<p><b>4.4 Over-Riding Constraints</b></p> <p>The MMS provides a functionality that allows the Market Operator to make adjustments in the Operating Constraints of the MDOM for a particular Trading Interval. Such adjustments or overriding constraints in the MDOM is imposed by the Market Operator upon the recommendation of the System Operator through a System Advisory.</p> <p>Imposition of Overriding Constraints in the MDOM include among others the following:</p> <ul style="list-style-type: none"> <li>• Nomination of Must-Run Units (MRU)</li> <li>• Emergency de-rating/outage of specific transmission lines</li> <li>• Additional reserve requirements</li> <li>• Generating unit limitations</li> <li>• Other types as may be recommended by the System Operator</li> </ul>	<p><b>4.4 Over-Riding Constraints</b></p> <p>The MMS provides a functionality that allows the Market Operator to make adjustments in the Operating Constraints of the MDOM for a particular Trading Interval. Such adjustments or overriding constraints in the MDOM is imposed by the Market Operator upon the recommendation of the System Operator through <u>a database interchange program between the Market Operator and System Operator System Advisory.</u></p> <p>Imposition of Overriding Constraints in the MDOM include <u>among others</u> the following:</p> <ul style="list-style-type: none"> <li>• <u>Security Limits; and Nomination of Must-Run Units (MRU)</u></li> <li>• <u>Regulatory and Commercial Testing</u></li> <li>• <u>Emergency de-rating/ outage of specific transmission lines</u></li> <li>• <u>Additional reserve requirements</u></li> <li>• <u>Generating unit limitations</u></li> <li>• <u>Other types as may be recommended by the System Operator</u></li> </ul>		<p>Imposition of Overriding Constraints in the MDOM include <u>among others</u> the following:</p> <ul style="list-style-type: none"> <li>• <u>Security Limits; and Nomination of Must-Run Units (MRU)</u> <ul style="list-style-type: none"> <li>• <u>Must Run Units</u></li> <li>• <u>Emergency de-rating/ outage of specific transmission lines</u></li> </ul> </li> <li>• <u>Non Security Limits</u> <ul style="list-style-type: none"> <li>• <u>Regulatory and Commercial Testing</u></li> <li>• <u>Emergency de-rating/ outage of specific transmission lines</u></li> <li>• <u>Additional reserve requirements</u></li> <li>• <u>Generating unit limitations</u></li> </ul> </li> </ul>	<p>Reconsidered the list for classification of Over-riding constraints into Security limits and Non-security Limits and made reclassifications as indicated.</p>

			<ul style="list-style-type: none"> <li>Other types as may be recommended by the System Operator</li> </ul>	
APPENDIX A.7 DISPATCH IMPLEMENTATION				
2. SCOPE	2. SCOPE			
<p>This procedure shall cover all activities to be undertaken by the System Operator in implementing the real time dispatch (RTD) schedule to trading participants during real time for Grids covered by the WESM.</p> <ul style="list-style-type: none"> <li></li> </ul>	<p>This procedure shall cover all activities to be undertaken by the System Operator in implementing the <del>rReal tTime dDispatch</del> (RTD) schedule to <del>Ttrading Pparticipants</del> during real time for Grids covered by the WESM.</p>			
<p>4.1.1. Determination of Dispatch Schedule</p> <p>The Market Operator determines the RTD Schedule using the MDOM and using the most recent information provided by the System Operator (refer to Real Time Dispatch Procedure). The Dispatch Schedule contains the Target MW Loading of all Trading Participants at the end of the Trading Interval.</p>	<p>4.1.1. <u>Target Loading Level Determination of Dispatch Schedule</u></p> <p><u>The Market Operator determines the RTD Schedule using the MDOM and using the most recent information provided by the System Operator (refer to Real Time Dispatch Procedure). The Dispatch Schedule contains the Target MW Loading of all Trading Participants at the end of the Trading Interval.</u></p> <p><u>The Dispatch Schedule shall contain the target loading levels to be achieved in MW &amp; MWhr considered at the end of that trading interval.</u></p> <p><u>Generators who are dispatched shall comply with a linear ramp rate over the Trading Interval. This is to ensure that the target loading for each Trading Participant shall be within the dispatch tolerance standards from the start until the end of that Trading Interval.</u></p>		<p><u>The Dispatch Schedule shall contain the target loading levels to be achieved in MW &amp; MWhr considered at the end of that trading interval.</u></p> <p><u>Generators who are dispatched shall comply with a linear ramp rate over the Trading Interval. The Generator shall be monitored for compliance with the Dispatch Tolerance standards and the required linear ramp rate. This is to ensure that the target loading for each Trading Participant shall be within the dispatch tolerance standards in MW and the linear ramping in MWh from the start until the end of that Trading</u></p>	<p>Should be in MW only when reference is made to dispatch schedule</p>

			Interval.	
<p><b>4.1.5 Re-Dispatch Process</b></p> <p>The following Re-dispatch process shall be followed by the SO and Market Operator:</p> <ol style="list-style-type: none"> <li>1. In cases of system emergencies, a threat to system security, or an event of <i>force majeure</i>, the SO shall issue a Market Intervention as stated in WESM Rules Chapter 6 and take control of the Re-dispatch of generating units. SO shall notify MO of the actions.</li> <li>2. In cases of CVC market results, the MO shall still provide SO with the RTD schedule and MOT. SO shall use all reasonable endeavors to dispatch generating units according to RTD and MOT. However, SO shall make necessary re-dispatch instructions to address the relevant CVCs.</li> <li>3. In cases of normal market conditions and there is an increase or decrease in system demand or there are forecast errors within the trading interval, SO shall follow Section 4.2 of Appendix A.7 of this Manual.</li> <li>4.</li> </ol>	<p><b>4.1.5 Re-Dispatch Process</b></p> <p>The following Re-dispatch process shall be followed by the SO and Market Operator:</p> <ol style="list-style-type: none"> <li>1. In cases of system emergencies, a threat to system security, or an event of <i>force majeure</i>, the SO shall issue a Market Intervention as stated in WESM Rules Chapter 6 and take control of the Re-dispatch of generating units. SO shall notify MO of the actions.</li> <li>2. In cases of CVC market results, the MO shall still provide SO with the RTD schedule and MOT. SO shall use all reasonable endeavors to dispatch generating units according to RTD and MOT. However, SO shall make necessary re-dispatch instructions to address the relevant CVCs.</li> <li>3. <u>In cases of normal market conditions and there is an increase or decrease in system demand or there are forecast errors within the trading interval, SO shall follow Section 4.2 of Appendix A.7 of this Manual.</u> <u>In cases where the Market Operator shall issue Market Intervention for the next interval in the absence of RTD Schedule, the System Operator shall have authority to come-up with a re-dispatch schedule for the next trading interval. The System Operator may opt to use the previous RTD or the latest Day Ahead Projection schedule (DAP), or may come up with their own dispatch schedule to be able to determine the dispatch targets of Trading Participants for that</u></li> </ol>		<ol style="list-style-type: none"> <li>3. <u>In cases of normal market conditions and there is an increase or decrease in system demand or there are forecast errors within the trading interval, SO shall follow Section 4.2 of Appendix A.7 of this Manual. In cases where the Market Operator shall initiate an advisory to the System Operator for Market Intervention for the next interval in the absence of RTD Schedule, the System Operator shall have authority to come-up with a re-dispatch schedule for the next trading interval. The System Operator may opt to use the previous RTD or the latest Day Ahead Projection schedule (DAP), or may come up with their own dispatch schedule to be able to</u></li> </ol>	<p>Clarification that only SO issues a Market Intervention</p>

	trading interval. SO shall submit Intervention report to the Market Operator indicating the actual dispatch of each Trading Participants for every Trading Intervals.		determine the dispatch targets of Trading Participants for that trading interval. SO shall submit Intervention report to the Market Operator indicating the actual dispatch of each Trading Participants for every Trading Intervals.	
<p>4.3 Compliance With Dispatch Instructions</p> <p>Xxx</p> <ul style="list-style-type: none"> <li>Trading Participants shall see to it that their facilities operate within the Dispatch Tolerance limits and standards prescribed by the System Operator.</li> <li>xxx</li> <li>If failure by a registered facility, to comply with a dispatch instruction and endangers electricity system reliability, the System Operator shall declare the registered facility to be non-conforming and shall take any actions allowed by the Philippine Grid and Distribution Codes and the WESM Rules.</li> <li>xxx</li> </ul>	<p>4.3 Compliance With Dispatch Instructions</p> <p>Xxx</p> <ul style="list-style-type: none"> <li>Trading Participants shall see to it that their facilities operate within the Dispatch Tolerance limits <u>from the start until the end of the Trading Interval</u> and standards prescribed by the System Operator.</li> <li>xxx</li> <li>If failure by a registered facility, to comply with a dispatch instruction <u>from the System Operator and threatens endangers the security electricity system and</u> reliability <u>of the grid</u>, the System Operator shall declare the registered facility to be non-conforming and <u>shall may take any the necessary</u> actions <u>such as isolation of that facility from the grid as</u> allowed by the Philippine Grid and Distribution Codes and the WESM Rules. <u>Moreover, if the Generators failed to comply with the dispatch instruction from the System Operator, that Generator shall be tagged as Must Stop Unit (MSU) and shall be reported immediately by the System Operator to the Market Operator and the Market Surveillance Committee (MSC) for possible violations of the WESM rules.</u></li> <li>xxx</li> </ul>		<p>Moreover, if the Generators failed to comply with the dispatch instruction from the System Operator, that Generator <u>shall be tagged as Must Stop Unit (MSU) and shall be reported immediately by the System Operator to the Market Operator and the Market Surveillance Committee (MSC) for possible violations of the WESM rules.</u></p>	

## Management of Must Run and Must Stop Units

Original Provision	RCC Discussion / Proposal	Rationale	RCC Discussion ( 02/04/2014)	Reason for Change
<b>1.0 Introduction</b>  In Section 6.6.1 of the WESM Rules, the System Operator was mandated to develop and periodically update the system security and reliability guidelines in consultation with WESM participants and Market Operator. Part of this guideline is the introduction of Must-Run Units (MRUs). Nomination of MRUs by System Operator shall be pre-qualified for dispatch to address the system security aspect of the grid. This document discusses the criteria and additional considerations used in designating MRUs, and their treatment during scheduling and dispatch. It also discusses the manner of settlement or compensation of MRUs.	In Section 6.6.1 of the WESM Rules, the System Operator was mandated to develop and periodically update the system security and reliability guidelines in consultation with WESM participants and Market Operator. Part of this guideline is the introduction of Must-Run Units (MRUs). Nomination of MRUs by System Operator <u>whether scheduled or on real-time basis shall be pre-qualified for dispatch</u> to address the system security aspect of the grid. <u>Likewise, the use of Must Stop Units (MSU) was also introduced to tag a certain generator/s for the non-conformity to dispatch instructions as issued by the System Operator to address system security and reliability of the grid.</u> This document discusses the criteria <u>and additional considerations</u> used in designating MRUs, <u>and their treatment</u> during scheduling and dispatch. It also discusses the manner of settlement or compensation of MRUs.		In Section 6.6.1 of the WESM Rules, the System Operator was mandated to develop and periodically update the system security and reliability guidelines in consultation with WESM participants and Market Operator. Part of this guideline is the introduction of Must-Run Units (MRUs), and nomination of MRUs by System Operator <u>whether scheduled or on real-time basis shall be pre-qualified for dispatch</u> to address the system security aspect of the grid. <u>Likewise, to address system security and reliability of the grid, the use of Must Stop Units (MSU) was also introduced to tag a certain generator/s for the non-conformity to dispatch instructions as issued by the System Operator.</u> This document discusses the criteria <u>and additional considerations</u> used in designating MRUs, <u>and their treatment</u> during scheduling and dispatch. It also discusses the manner of settlement or compensation of MRUs.	Changed for clarity
WESM Rules clause 3.5.13.1, as amended, permits the System Operator to direct the Market Operator to impose constraints on the power flow, demand, energy generation of a specific facility in the Grid to address, among other things,	WESM Rules clause 3.5.13.1, as amended, permits the System Operator <u>to direct in coordination with</u> the Market Operator to impose constraints on the power flow, <u>demand</u> , energy generation of a specific facility in the Grid to address <u>system security and reliability</u>		WESM Rules clause 3.5.13.1, as amended, permits the System Operator <u>to direct in coordination with</u> the Market Operator to impose constraints on the power flow,	For clarity

Original Provision	RCC Discussion / Proposal	Rationale	RCC Discussion ( 02/04/2014)	Reason for Change
<p>the need to dispatch generating units to comply with systems, regulatory and commercial test requirements. Relaxation of constraints on power flows, demand, energy generation and reserves may also be implemented if the Market Operator is unable to generate a feasible dispatch schedule. For this purpose, the System Operator, in consultation with the Market Operator, is directed to develop the criteria and procedures for dispatch of generating units that are required to run as a result of the imposition or relaxation of constraints.</p>	<p><del>of the grid., among other things, the need to dispatch generating units to comply with systems, regulatory and commercial test requirements. On the other hand,</del> Relaxation of constraints on power flows, demand, energy generation and reserves may also be implemented <u>if by</u> the Market Operator <del>is if</del> unable to generate a feasible dispatch schedule. For this purpose, the <u>System Operator, in consultation with</u> the Market Operator, is directed to develop the criteria and procedures for dispatch of generating units that are required to run as a result of the imposition or relaxation of constraints.</p>		<p><del>demand,</del> energy generation of a specific facility in the Grid to address <u>system security and reliability of the grid. , among other things, the need to dispatch generating units to comply with systems, regulatory and commercial test requirements.</u> <u>On the other hand,</u> Relaxation of constraints on power flows, , energy generation and reserves may also be implemented <u>if by</u> the Market Operator <del>is if it is</del> unable to generate a feasible dispatch schedule. For this purpose, <u>the System Operator, in consultation with</u> the Market Operator, is directed to develop the criteria and procedures for dispatch of generating units that are required to run as a result of the imposition or relaxation of constraints.</p>	
<p><b>2.0 Objective</b></p> <p>This document is intended to -</p> <p>2.1. Establish the criteria for designating Must-Run Units and define the procedures for their treatment during scheduling and dispatch.</p> <p>2.2. Establish the methodology to</p>	<p><b>2.0 Objective</b></p> <p>This document is intended to -</p> <p>2.1. <u>Review /Update Establish</u> the criteria for designating Must-Run Units and define the procedures for their treatment during scheduling and dispatch.</p> <p>2.2. <u>Review /Update Establish</u> the methodology to be used for the</p>	<p>The MRU criteria were already established and needs for review/updat e only.</p>	<p><b>2.0 Objective</b></p> <p>This document is intended to -</p> <p>2.1. <u>Review /Update Establish</u> <u>Provide</u> the criteria for designating Must-Run Units and define the procedures for their treatment during scheduling and dispatch.</p> <p>2.2. <u>Review /Update Establish</u> <u>Provide</u> the methodology to be</p>	<p>Changed/Enhanced for clarity</p>

Original Provision	RCC Discussion / Proposal	Rationale	RCC Discussion ( 02/04/2014)	Reason for Change
be used for the settlement and compensation of Must Run Units.	settlement and compensation of Must Run Units.  <b>2.3 <u>Introduce the concept of Must-Stop Unit and procedures for their treatment and settlement.</u></b>		used for the settlement and compensation of Must Run Units.  <b>2.3 <u>Introduce the concept of Must-Stop Unit and procedures for their treatment and settlement.</u></b>	
<b>4.0 Definition of Terms</b>  <b>4.1 Must-Run Unit</b> –a generating unit identified by the System Operator to be on-line on a particular Trading Interval to address System Security requirements and other considerations as provided in this manual.	<b>4.0 Definition of Terms</b>  <b>4.1 Must-Run Unit (MRU)</b> – a generating unit identified <b><u>and instructed, on real-time or scheduled basis,</u></b> by the System Operator <b><u>to be either (a) come on-line or (b) provide additional energy</u></b> on a particular Trading Interval <b><u>but the dispatch is said to be Out of Merit</u></b> to address System Security requirements and other considerations as provided in this manual.  <b>4.1.1 <u>Scheduled MRU – MRU designated by the System Operator before the trading interval and included in the RTD schedule through the imposition of Security Limit as defined in the WESM Dispatch Protocol Manual.</u></b>  <b>4.1.2 <u>Real Time MRU – MRU designated by the System Operator during the trading interval.</u></b>	As approved by RCC for its new definition	<b><u>Must-Run Unit (MRU) –a generating unit identified and instructed by the System Operator (SO) to come on-line, on real-time or scheduled basis on a particular Trading Interval but the dispatch of which is said to be Out of Merit to augment the Ancillary Services and maintain the System Security requirements of the Grid. For clarity, MRU shall be utilized only after the System Operator has exhausted all available Ancillary Services. MRUs are classified as follows:</u></b>  <b>4.1.1 <u>Scheduled MRU – MRU designated by the System Operator before the trading interval and included in the RTD schedule through the imposition of Security Limit as defined in the WESM Dispatch Protocol Manual.</u></b>  <b>4.1.2 <u>Real Time MRU – MRU designated by the System Operator during the trading interval.</u></b>	Revised to align with the definition adopted in the proposed amendments to the WESM Rules and the PGC.
New provision	<b><u>Constrain-on. In respect of a generating unit, the output of that generating unit is</u></b>			The use of the phrase "limited

Original Provision	RCC Discussion / Proposal	Rationale	RCC Discussion ( 02/04/2014)	Reason for Change
Include the definition of Constrain-on as defined in the WESM rules	<u>limited above the level to which it would otherwise have been dispatched by the Market Operator on the basis of its energy offer.</u>			above" was questioned by Mr. Raymundo noting it does not seem appropriate. The RCC agreed to retain the same as it is the current WESM Rules and just propose the correct provision in the appropriate document.
<p><b>5.0 Responsibilities</b></p> <p><b>5.1</b> The Market Operator shall prepare hour-ahead, day-ahead and week-ahead Dispatch Schedule based on net load forecast, current system condition, accepted plant/unit bid nomination for MRU/s and either/both Ancillary Services and Energy (as applicable), and required spinning and contingency reserve level.</p> <p><b>5.2</b> The System Operator shall dispatch MRU/s based on the submitted hour-ahead generation schedule by the Market Operator.</p>	<p><b>5.0 Responsibilities</b></p> <p><b>5.1</b> The Market Operator shall prepare hour-ahead, day-ahead and week-ahead Dispatch Schedule based on net load forecast, current system condition, accepted plant/unit bid nomination for MRU/s and either/both Ancillary Services and Energy (as applicable), and required <u>spinning and contingency</u>-reserve level.</p> <p><b>5.2</b> <u>The System Operator (SO) shall issue dispatch MRU/s — based on the submitted hour-ahead generation schedule by the Market Operator instructions to Must Run Unit/s (MRUs) to come on-line, on real-time or scheduled basis on a particular Trading Interval whenever all applicable Ancillary Services are</u></p>	Based on the new definition as approved by RCC	<p><b>5.2</b> <u>The System Operator (SO) shall issue dispatch MRU/s — based on the submitted hour-ahead generation schedule by the Market Operator instructions to Must Run Unit/s (MRUs) to come on-line, on real-time or scheduled basis on a particular Trading Interval whenever all applicable Ancillary Services are exhausted in order to maintain</u></p>	For clarity, an article "the" was added

Original Provision	RCC Discussion / Proposal	Rationale	RCC Discussion ( 02/04/2014)	Reason for Change
	<u>exhausted in order to maintain system security requirements of the Grid.</u>		<u>system security requirements of the Grid.</u>	
5.3 Re-dispatch shall be in accordance with the contingency plan prepared by System Operator.	5.3 <u>Issue re-dispatch instructions to generators to constrain-on (i.e. increase the output in excess of RTD or from shutdown to be on-line or) or to constrain-off (i.e. decrease the output to Pmin or from on-line to be shutdown) with due consideration to power quality, reliability and security of the grid. Re-dispatch shall be in accordance with the contingency plan prepared by System Operator.</u>	Align with the actions to be taken by the System Operator prior to the use of MRU as approved by RCC	5.3 <u>The System Operator shall</u> issue re-dispatch instructions <u>to generators to constrain-on (i.e. increase the output in excess of RTD or from shutdown to be on-line or) or to constrain-off (i.e. decrease the output to Pmin or from on-line to be shutdown) with due consideration to power quality, reliability and security of the grid. Re-dispatch shall be in accordance with the contingency plan prepared by System Operator.</u>	For clarity
6.0 Must-Run Unit Criteria  6.1 System Security  The criteria for designating Must-Run Units evolving on the System  Security are as follows:  6.1.1 System Voltage Requirement - this refers to the required voltage control and reactive power which the System Operator may need to	6.0 Must-Run Unit Criteria  6.1 System Security  <u>The criteria for designating Must-Run Units evolving on the System Security are as follows</u> <u>In an event where all Ancillary Services are exhausted to address the threat in system security, the System Operator shall make use of the MRUs to ensure the reliability and security of the grid. The</u>	As approved by the RCC Board	6.0 Must-Run Unit Criteria  6.1 System Security  <u>The criteria for designating Must-Run Units evolving on the System Security are as follows</u> <u>In an event where all available Ancillary Services are have been exhausted to address the threat in system security, the System Operator shall make use</u>	For clarity

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<p>take into account for the reliability of the Grid.</p> <p><b>6.1.2 Thermal Limits of Transmission Line and Power Equipment</b>—this refers to the dispatch limitations of generators affected by the actual condition of the transmission lines and/or power equipment.</p> <p><b>6.1.3 Systems Tests of TransCo Facilities/ Equipment</b> - these are tests undertaken to certain substation equipment that may have impact on the Grid if not addressed by the dispatch of MRUs.</p> <p><b>6.1.4 Insufficient offers from generators</b> to meet the demands for the real-time dispatch of energy.</p> <p><b>6.1.5 Inadequate levels of reserve</b> to meet the security and reliability requirements of the Grid.</p>	<p><u>following operating criteria shall be observed:</u></p> <p><b>6.1.1 System Voltage Requirement</b> – this refers to the required voltage control and reactive power which the System Operator may need to take into account for the reliability of the Grid.</p> <p><b>6.1.2 Thermal Limits of Transmission Line and Power Equipment</b> – this refers to the dispatch limitations of generators affected by the actual condition of the transmission lines and/or power equipment.</p> <p><b>6.1.3 Real-power Balancing and Frequency Control</b> – <u>this refers to the energy requirement to maintain supply-demand balance.</u></p> <p><del>6.1.3 Systems Tests of TransCo Facilities/ Equipment these are tests undertaken to certain substation equipment that may have impact on the Grid if not addressed by the dispatch of MRUs.</del></p> <p><del>6.1.4 Insufficient offers from generators to meet the demands for the real-time dispatch of energy.</del></p> <p><del>6.1.5 Inadequate levels of reserve to meet the security and</del></p>		<p><u>of the MRUs to ensure the reliability and security of the grid. The following operating criteria shall be observed:</u></p> <p>Xxx</p> <p>xxx</p>	

Original Provision	RCC Discussion / Proposal	Rationale	RCC Discussion ( 02/04/2014)	Reason for Change						
	<u>reliability requirements of the Grid.</u>									
<p><b>7. Considerations and Criteria for Selection of Must Run Units</b></p> <p>7.1 The System Operator shall select and designate the generating unit that will run as an MRU for any relevant trading interval, in accordance with the criteria set forth in this Manual. The dispatch of the selected MRU/s shall be based on the hour-ahead generation schedule generated by the Market Operator.</p> <p>7.2 The criteria and considerations for selection of an MRU will depend on the reason for the designation of the MRU, as detailed in the table below.</p> <table><tr><td>Conditions Criteria</td><td>Considerations for Selection/Qualification of Units</td></tr></table>	Conditions Criteria	Considerations for Selection/Qualification of Units	<p>7. Considerations and Criteria for Selection of Must-Run Units/<b>Must-Stop Units</b></p> <p>7.1. The System Operator shall select and designate the generating unit that will run as an MRU <b>and tagged as MSU</b> for any relevant trading interval, in accordance with the criteria set forth in this Manual. <b><u>The dispatch of the selected MRU/s shall be based on the hour-ahead generation schedule generated by the Market Operator.</u></b></p> <p>7.2. The criteria and considerations for selection of an MRU/MSU will depend on the reason for the designation of the MRU/MSU, as detailed in the table below.</p> <table><tr><td>Conditions Criteria <b>for MRU</b></td><td>Considerations for Selection/Qualification of Units</td></tr></table>	Conditions Criteria <b>for MRU</b>	Considerations for Selection/Qualification of Units	<p>Based on the new definition of MRU and MSU</p> <p>To include the use of MRU during islanding operation or isolation of portion or part of the grid where generator/s can be dispatched locally.</p>	<p>7. Considerations and Criteria for Selection of Must-Run Units/<b>Must-Stop Units</b></p> <p>7.1. The System Operator shall select and designate the generating unit that will run as an MRU <b>and/or will be tagged as MSU</b> for any relevant trading interval, in accordance with the criteria set forth in this Manual. <b><u>The dispatch of the selected MRU/s shall be based on the hour-ahead generation schedule generated by the Market Operator.</u></b></p> <p>7.2. The criteria and considerations for selection of an MRU will depend on the reason for the designation of the MRU/<b>MSU</b>, as detailed in the table below.</p> <table><tr><td>Conditions Criteria <b>for MRU</b></td><td>Considerations for Selection/Qualification of Units</td></tr></table>	Conditions Criteria <b>for MRU</b>	Considerations for Selection/Qualification of Units	<p>For clarity ; there are no criteria for MSUs</p> <p>For clarity</p>
Conditions Criteria	Considerations for Selection/Qualification of Units									
Conditions Criteria <b>for MRU</b>	Considerations for Selection/Qualification of Units									
Conditions Criteria <b>for MRU</b>	Considerations for Selection/Qualification of Units									

Original Provision		RCC Discussion / Proposal		Rationale	RCC Discussion ( 02/04/2014)		Reason for Change
<p><b>System Voltage Requirement</b> - refers to the required voltage control and reactive power which the System Operator may need to take into account for the reliability of the Grid</p>	<ul style="list-style-type: none"> <li>Power plants with reactive power generation/absorption capability.</li> <li>Strategically located in the Grid to control under-/over-voltage in the vicinity.</li> </ul>	<p><b>System Voltage Requirement</b> – <u>this</u> refers to the required voltage control and reactive power which the System Operator may need to take into account for the reliability of the Grid.</p>	<ul style="list-style-type: none"> <li><u>Generating unit/s run as MRU shall provide/absorb reactive power support in accordance with its corresponding reactive power capability curve to address under/over voltage problem.</u></li> <li><u>Power plants with reactive power generation/absorption capability.</u></li> <li><u>The use of MRU shall be based on the location where voltage problem exist. Strategically located in the Grid to control under-/over-voltage in the vicinity.</u></li> </ul>		<p><b>System Voltage Requirement</b> – <u>this</u> refers to the required voltage control and reactive power which the System Operator may need to take into account for the reliability of the Grid.</p>	<ul style="list-style-type: none"> <li><u>Generating unit/s run as MRU shall provide/absorb reactive power support in accordance with its corresponding reactive power capability curve to address under/over voltage problem.</u></li> <li><u>Power plants with reactive power generation/absorption capability.</u></li> <li><u>The use of MRU shall be based on the location where voltage problem exist. Strategically located in the Grid to control under-/over-voltage in the vicinity.</u></li> </ul>	For clarity
	<p><b>Thermal Limits of Transmission Line and Power Equipment</b> - refers to the dispatch limitations of generators affected by the actual condition of the transmission lines and/or power equipment</p>				<p><b>Thermal Limits of Transmission Line and Power Equipment</b> - <u>this</u> refers to the dispatch limitations of generators affected by the actual condition of the transmission lines and/or power equipment.</p>	<ul style="list-style-type: none"> <li><u>consider resulting limits of the transmission lines or the requirements of the power equipment</u></li> </ul>	
		<p><b>Thermal Limits of Transmission Line and Power Equipment</b> - <u>this</u> refers to the dispatch limitations of generators affected by the actual condition of the transmission lines and/or power equipment.</p>	<ul style="list-style-type: none"> <li><u>consider resulting limits of the transmission lines or the requirements of the power equipment</u></li> </ul>		<p><b>Systems Tests of TransCo Facilities/Equipment</b> – <u>are tests undertaken to certain substation equipment that may have impact on the Grid if not addressed by the dispatch of MRUs.</u></p>	<ul style="list-style-type: none"> <li><u>Generating unit/s called to run as MRU or on real time basis is in accordance to compliance to the security and reliability of the grid.</u></li> <li><u>consider resulting limits in the requirements of Transco facilities or equipment undergoing tests</u></li> </ul>	

Original Provision		RCC Discussion / Proposal		Rationale	RCC Discussion ( 02/04/2014)		Reason for Change
<b>Systems Tests of TransCo Facilities/Equipment</b> - are tests undertaken to certain substation equipment that may have impact on the Grid if not addressed by the dispatch of MRUs.	<ul style="list-style-type: none"> <li>consider resulting limits in the requirements of Transco facilities or equipment undergoing tests</li> </ul>	<u>Systems Tests of TransCo Facilities/Equipment – are tests undertaken to certain substation equipment that may have impact on the Grid if not addressed by the dispatch of MRUs.</u>	<ul style="list-style-type: none"> <li>consider resulting limits in the requirements of Transco facilities or equipment undergoing tests</li> </ul>		<u>Insufficient offers from generators – to meet the demands for real-time dispatch of energy</u>	<ul style="list-style-type: none"> <li><u>power plants with available energy capable of running during trading intervals with under-generation</u></li> <li><u>power plants with fast start capability</u></li> </ul>	
	<b>Insufficient offers from generators</b> – to meet the demands for real-time dispatch of energy	<ul style="list-style-type: none"> <li>power plants with available energy capable of running during trading intervals with under-generation</li> <li>power plants with fast start capability</li> </ul>	<ul style="list-style-type: none"> <li><u>power plants with available energy capable of running during trading intervals with under-generation</u></li> <li><u>power plants with fast start capability</u></li> </ul>		<u>Inadequate reserve levels – to meet security and reliability requirements of the Grid</u>	<ul style="list-style-type: none"> <li><u>power plants certified as ancillary services providers</u></li> <li><u>power plants to be selected based on balance of required reserve level</u></li> </ul>	
	<b>Inadequate reserve levels</b> – to meet security and reliability requirements of the Grid	<ul style="list-style-type: none"> <li>power plants certified as ancillary services providers</li> <li>power plants to be selected based on balance of required reserve level</li> </ul>	<ul style="list-style-type: none"> <li><u>power plants certified as ancillary services providers</u></li> <li><u>power plants to be selected based on balance of required reserve level</u></li> </ul>		<u>Regulatory Requirements – are unit tests imposed by the government (i.e., boiler tests, emission tests, other environmental tests, etc.)</u>	<ul style="list-style-type: none"> <li><u>power plants required to undergo tests will be run as MRU, provided there are no line constraints</u></li> </ul>	
		<u>Regulatory Requirements – are unit tests imposed by the government (i.e., boiler tests, emission tests, other environmental tests, etc.)</u>	<ul style="list-style-type: none"> <li><u>power plants required to undergo tests will be run as MRU, provided there are no line constraints</u></li> </ul>				

Original Provision		RCC Discussion / Proposal		Rationale	RCC Discussion ( 02/04/2014)		Reason for Change
<b>Regulatory Requirements</b> - are unit tests imposed by the government (i.e., boiler tests, emission tests, other environmental tests, etc.)	<ul style="list-style-type: none"> <li>power plants required to undergo tests will be run as MRU, provided there are no line constraints</li> </ul>	<u>Commercial Operation Requirements – are unit tests imposed by the System Operator or as required in the Philippine Grid Code (i.e., performance, commissioning, fuel stack sampling, Ancillary Service, etc.)</u>	<ul style="list-style-type: none"> <li><u>power plants required to undergo tests will be run as MRU, provided there are no line constraints</u></li> </ul>		<u>Commercial Operation Requirements – are unit tests imposed by the System Operator or as required in the Philippine Grid Code (i.e., performance, commissioning, fuel stack sampling, Ancillary Service, etc.)</u>	<ul style="list-style-type: none"> <li><u>power plants required to undergo tests will be run as MRU, provided there are no line constraints</u></li> </ul>	
	<b>Commercial Operation Requirements</b> - are unit tests imposed by the System Operator or as required in the Philippine Grid Code (i.e., performance, commissioning, fuel stack sampling, Ancillary Service, etc.)	<ul style="list-style-type: none"> <li>power plants required to undergo tests will be run as MRU, provided there are no line constraints</li> </ul>	<u>Local Calamities and Emergencies – are short-term incidents (i.e., flooding, etc.) that would require designation of generators as MRUs to avert or minimize damage to infrastructure and security of people living in affected localities</u>		<u>Local Calamities and Emergencies – are short-term incidents (i.e., flooding, etc.) that would require designation of generators as MRUs to avert or minimize damage to infrastructure and security of people living in affected localities</u>	<ul style="list-style-type: none"> <li><u>consider requested quantities and pre-defined contingency plans</u></li> </ul>	

Original Provision		RCC Discussion / Proposal		Rationale	RCC Discussion ( 02/04/2014)		Reason for Change
<b>Local Calamities and Emergencies</b> - are short-term incidents (i.e., flooding, etc.) that would require designation of generators as MRUs to avert or minimize damage to infrastructure and security of people living in affected localities	<ul style="list-style-type: none"> <li>consider requested quantities and pre-defined contingency plans</li> </ul>	<u>Real-power Balancing and Frequency Control</u> – this refers to the energy requirement to maintain supply-demand balance.	<ul style="list-style-type: none"> <li>The System Operator deviates from the WMOT and issues dispatch instruction to the Generating unit/s with fast ramp rate capability to constrain-on its output to immediately address threat in security and reliability of the grid.</li> <li>During islanding operation or whenever a portion or part of the grid was isolated, the System Operator may require the Generator/s to come on-line to supply the corresponding demand of the localized portion of the isolated part of the grid</li> </ul>		<u>Real-power Balancing and Frequency Control</u> – this refers to the energy requirement to maintain supply-demand balance.	<ul style="list-style-type: none"> <li>The System Operator deviates from the WMOT and issues dispatch instruction to the Generating unit/s with fast ramp rate capability to constrain-on its output to immediately address threat in security and reliability of the grid.</li> <li>During islanding operation or whenever a portion or part of the grid was is isolated, the System Operator may require the Generator/s to come on-line to supply the corresponding demand of the localized portion of the isolated part of the grid</li> </ul>	

<p><b>8. Settlement of Must Run Units</b></p> <p>Generating units which are designated by the System Operator as Must Run Units shall be compensated based on the prevailing Generation Price Index (the "GPI"). GPI represents the blended price of bilateral and spot energy purchases. This approximates the generation charge component paid by the electricity end-consumers.</p> <p><b>8.1. Calculation of Generation Price Index</b></p> <p>a) The Generation Price Index shall be calculated using the formula below –</p> $GPI = \frac{\sum \text{Payment}_{\text{bilateral}} + \sum \text{Payment}_{\text{spot}}}{\sum \text{Quantity}_{\text{metered}}}$ <p>Where:</p> $\text{Payment}_{\text{bilateral}} = \sum \text{Basic Charges} + \sum \text{Other Charges} - \sum \text{Applicable Discounts}$ $\text{Payment}_{\text{spot}} = \sum \text{Trading Amounts}^{\text{ex ante}} + \sum \text{Line Rental} - \sum \text{Settlement Adjustments}$ $\text{Quantity}_{\text{metered}} = \sum \text{Quantity}_{\text{bilateral}} + \sum \text{Quantity}_{\text{spot}}$ <p>b) The resulting GPI shall be the price at which designated MRUs are to be settled for the energy quantities at which they were called to run as</p>	<p><b>9. Settlement of Must Run Units</b></p> <p>Generating units that are designated by the System Operator as Must-Run Units shall be compensated based on the <u>subsequent subsections prevailing Generation Price Index (the "GPI"). GPI represents the blended price of bilateral and spot energy purchases. This approximates the generation charge component paid by the electricity end-consumers.</u></p> <p><b>9.1. <del>MRU Price</del>Calculation of Generation Price Index</b></p> <p>a) <del>The Generation Price Index shall be calculated using the formula below –</del></p> $GPI = \frac{\sum \text{Payment}_{\text{bilateral}} + \sum \text{Payment}_{\text{spot}}}{\sum \text{Quantity}_{\text{metered}}}$ <p><del>Where:</del></p> $\text{Payment}_{\text{bilateral}} = \sum \text{Basic Charges} + \sum \text{Other Charges} - \sum \text{Applicable Discounts}$ $\text{Payment}_{\text{spot}} = \sum \text{Trading Amounts}^{\text{ex ante}} + \sum \text{Line Rental} - \sum \text{Settlement Adjustments}$ $\text{Quantity}_{\text{metered}} = \sum \text{Quantity}_{\text{bilateral}} + \sum \text{Quantity}_{\text{spot}}$ <p>b) <u>The resulting GPI shall be the price at which designated MRUs are to be settled for the energy quantities at which they were called to run as MRUs.</u></p>	<p>- Introduction of new MRU pricing mechanism in lieu of the current GPI scheme, which will already reflect the true cost of generation and will thus no longer necessitate the additional compensation scheme. The new pricing mechanism is proposed in consideration of the expiration of the term of the NPC Transition Supply Contract (TSC) which will render the current formulation of the GPI no longer applicable.</p>	<p><b>9. Settlement of Must Run Units</b></p> <p>Generating units <b>which that</b> are designated by the System Operator as Must Run Units shall be compensated based on the prevailing Generation Price Index (the "GPI"). GPI represents the blended price of bilateral and spot energy purchases. This approximates the generation charge component paid by the electricity end-consumers.</p> <p><b>9.1. Calculation of Generation Price Index</b></p> <p>a) The Generation Price Index shall be calculated using the formula below –</p> $GPI = \frac{\sum \text{Payment}_{\text{bilateral}} + \sum \text{Payment}_{\text{spot}}}{\sum \text{Quantity}_{\text{metered}}}$ <p>Where:</p> $\text{Payment}_{\text{bilateral}} = \sum \text{Basic Charges} + \sum \text{Other Charges} - \sum \text{Applicable Discounts}$ $\text{Payment}_{\text{spot}} = \sum \text{Trading Amounts}^{\text{ex ante}} + \sum \text{Line Rental} - \sum \text{Settlement Adjustments}$ $\text{Quantity}_{\text{metered}} = \sum \text{Quantity}_{\text{bilateral}} + \sum \text{Quantity}_{\text{spot}}$ <p>b) The resulting GPI shall be the price at which designated MRUs are to be settled for the energy quantities at which they were called to run as MRUs.</p> <p>c) The GPI will be calculated for each</p>	<p>To revert to original provision on the payment of MRUS through GPI; delete proposed provisions not consistent with original proposal</p>
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<p>MRUs.</p> <p>c) The GPI will be calculated for each billing month as defined in the WESM Rules or in the WESM Billing and Settlements Manual.</p>	<p><del>c) The GPI will be calculated for each billing month as defined in the WESM Rules or in the WESM Billing and Settlements Manual.</del></p> <p>9.1.1. <u>For System Security</u></p> <p><u>The settlement price shall be based on:</u></p> <p><u>MRUP = MIN (NP, MAX (MCP, AOP))</u></p> <p><u>Wherein:</u></p> <p><u>MRUP = Must-Run Unit Price (P/MWh)</u>  <u>NP = Nominated Price (P/MWh)</u>  <u>MCP = Market Clearing Price (P/MWh)</u>  <u>AOP = Average Offer Price (P/MWh)</u></p> <p><u>If AOP is non-existent, the NP shall be used.</u></p> <p><del>9.1.2. For Trading Participant Initiated MRU/MSU</del></p> <p><del>The MRU/MSU settlement price in this case shall be the resulting ex-ante price for the interval/s for scheduled MRU/MSU.</del></p>	<p>For Deletion since the non-security related MRUs no longer considered.</p>	<p>billing month as defined in the WESM Rules or in the WESM Billing and Settlements Manual.</p>	
<p>New Provision</p>	<p>9.2. <u>Verification of MRU Data</u></p> <p>9.2.1. <u>System Operator shall submit all reports of MRU events to the Market Operator for purposes of MRU settlement.</u></p> <p>9.2.2. <u>Market Operator shall validate all System Operator reports of MRU</u></p>	<p>- Included a process for MRU data validation/verification</p>	<p>9.2. <u>Verification of MRU Data</u></p> <p>9.2.1. <u>The System Operator shall submit all reports of MRU events to the Market Operator for purposes of MRU settlement.</u></p> <p>9.2.2. <u>The Market Operator shall validate all System Operator reports of</u></p>	

	<p><u>events before proceeding to settlements.</u></p> <p>9.2.3. <u>Discrepancies shall be reported to the generator concerned for further validation before the end of the next billing period.</u></p>	<p>Already specified in the section 9.2.2</p>	<p><u>MRU events before proceeding to settlements.</u></p> <p>9.2.3. <u>Discrepancies shall be reported to the generator concerned for further validation before the end of the next billing period.</u></p>	
<p><b>9.2. Calculation of MRU Settlement Amounts</b></p> <p>For every billing period, the Market Operator will calculate the payments to be made to each designated MRU that complied with the dispatch instructions as such by multiplying the applicable GPI with the energy quantities at which that MRU was designated as MRU.</p> <p>The applicable GPI for a given billing period shall be that calculated using data from the immediately preceding billing period. The billing period shall be as defined in the WESM Rules.</p> <p>9.2.1. Additional Compensation</p> <p>A Trading Participant which has complied with dispatch instructions as MRU may be entitled to additional compensation. Additional compensation is allowed in cases where the Trading Participant submits sufficient proof that the MRU settlement amount calculated in accordance with this Manual is not sufficient to cover the following costs</p>	<p><b>9.3. <del>9.2</del> Calculation of MRU Settlement Amounts</b></p> <p><u>Market Operator will process data from System Operator, Metering Service Provider (MSP) and Market Management System (MMS) as basis of settlement for MRU.</u> For every billing period, the Market Operator will calculate the <u>initial</u> payments to be made to each designated MRU. <u>These calculations shall be submitted to MRU plants for reconciliation and later on for settlements. The settlement of MRU will be in accordance with energy settlement billing cycle. Any adjustment in the final statement shall be reflected in the next billing cycle.</u><del>that complied with the dispatch instructions as such by multiplying the applicable GPI with the energy quantities at which that MRU was designated as MRU.</del></p> <p><del>The applicable GPI for a given billing period shall be that calculated using data from the immediately preceding billing period. The billing period shall be as defined in the WESM Rules.</del></p> <p>9.3.1. <u>Calculation of MRU Volume</u></p> <p><u>The MRU quantity is the total metered</u></p>	<p>- Revised to require the validation of MRU quantity using the data from SO, MSO and MMS as well as to clarify that the MRU settlement will be in accordance with the energy settlement billing cycle. This is to ensure timely settlement of MRUs.</p>	<p><b>9.3. Calculation of MRU Settlement Amounts</b></p> <p>For every billing period, the Market Operator will calculate the payments to be made to each designated MRU that complied with the dispatch instructions as such by multiplying the applicable GPI with the energy quantities at which that MRU was designated as MRU.</p> <p>The applicable GPI for a given billing period shall be that calculated using data from the immediately preceding billing period. The billing period shall be as defined in the WESM Rules.</p> <p>9.3.1. Additional Compensation</p> <p>A Trading Participant which has complied with dispatch instructions as MRU may be entitled to additional compensation. Additional compensation is allowed in cases where the Trading Participant submits sufficient proof that the MRU settlement amount calculated in accordance with this Manual is not sufficient to cover the following costs that are incurred in</p>	<p>Revert to original provisions</p>

<p>that are incurred in complying with the MRU call –</p> <p>a) fuel costs b) variable operating and maintenance costs, which may include start-up cost and shut-down costs</p> <p>The additional compensation will not be more than the aggregate of the above costs less the amount of the MRU settlement amount already paid or payable, subject to the determination and approval of the Market Operator.</p> <p>The affected Trading Participant will submit to the Market Operator a claim for additional compensation with supporting documents justifying the requested additional compensation.</p>	<p><u>quantity of that generating unit minus its real-time dispatch (RTD) schedule, if any, and the BCQ declared for that unit.</u></p> <p><u>MRU Volume = MQ – max (BCQ, EAQ), MWh</u></p> <p><u>Additional Considerations in the Determination of MRU Volume</u></p> <p><input type="checkbox"/> <u>With no offer and no security (Overriding Constraint) limit</u> <u>MRU Volume = MQ – BCQ</u></p> <p><input type="checkbox"/> <u>With security Overriding Constraint limit and RTD = Smin</u> <u>MRU Volume = MQ – BCQ</u></p> <p><input type="checkbox"/> <u>With security Overriding Constraint limit and RTD &gt; Smin</u> <u>MRU Volume = 0</u></p> <p><u>Where:</u> <u>RTD = target schedule at ex-ante</u> <u>Smin = minimum loading in the SO-submitted security limit</u></p> <p><u>In cases where the calculated MRU Volume is less than zero, then the MRU Volume is equal to zero.</u></p> <p><u>The imbalance shall be initially paid at ex-post (EPETA). After obtaining the MRU price, the MRU Trading Amount shall then be computed. Adjustments shall be made given the discrepancy between the EPETA and the MRU</u></p>	<p>- Included details for the determination/calculation of MRU volume.</p> <p>Overriding Constraint Limit is more appropriate to use instead of security limit so it could qualify other reasons such as start up/shutdown loading (below Pmin), Generator limit due to problem encountered or due to line limitation, testing of Generating unit, etc.</p>	<p>complying with the MRU call –</p> <p>a) fuel costs b) variable operating and maintenance costs, which may include start-up cost and shut-down costs</p> <p>The additional compensation will not be more than the aggregate of the above costs less the amount of the MRU settlement amount already paid or payable, subject to the determination and approval of the Market Operator.</p> <p>The affected Trading Participant will submit to the Market Operator a claim for additional compensation with supporting documents justifying the requested additional compensation</p> <p>9.3.2. <u>Calculation of MRU Volume</u></p> <p><u>The MRU quantity is the total metered quantity of that generating unit minus its real-time dispatch (RTD) schedule, if any, and the BCQ declared for that unit.</u></p> <p><u>MRU Volume = MQ – max (BCQ, EAQ), MWh</u></p> <p><u>Additional Considerations in the Determination of MRU Volume</u></p> <p><input type="checkbox"/> <u>With no offer and no security (Overriding Constraint) limit</u> <u>MRU Volume = MQ – BCQ</u></p>	
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	<p><u>Trading Amount.</u></p> <p><u>9.2.1 Additional Compensation</u></p> <p><u>A Trading Participant which has complied with dispatch instructions as MRU may be entitled to additional compensation. Additional compensation is allowed in cases where the Trading Participant submits sufficient proof that the MRU settlement amount calculated in accordance with this Manual is not sufficient to cover the following costs that are incurred in complying with the MRU call—</u></p> <p><u>a) fuel costs</u>  <u>b) variable operating and maintenance costs, which may include start-up cost and shut-down costs</u></p> <p><u>The additional compensation will not be more than the aggregate of the above costs less the amount of the MRU settlement amount already paid or payable, subject to the determination and approval of the Market Operator.</u></p> <p><u>The affected Trading Participant will submit to the Market Operator a claim for additional compensation with supporting documents justifying the requested additional compensation.</u></p>		<p><input type="checkbox"/> <u>With Overriding Constraint limit and <math>RTD = S_{min}</math></u>  <u><math>MRU \text{ Volume} = MQ - BCQ</math></u></p> <p><input type="checkbox"/> <u>With Overriding Constraint limit and <math>RTD &gt; S_{min}</math></u>  <u><math>MRU \text{ Volume} = 0</math></u></p> <p><u>Where:</u>  <u><math>RTD</math> = target schedule at ex-ante</u>  <u><math>S_{min}</math> = minimum loading in the SO-submitted security limit</u></p> <p><u>In cases where the calculated MRU Volume is less than zero, then the MRU Volume is equal to zero.</u></p> <p><u>The imbalance shall be initially paid at ex-post (EPETA). After obtaining the MRU price, the MRU Trading Amount shall then be computed. Adjustments shall be made given the discrepancy between the EPETA and the MRU Trading Amount.</u></p>	
<p>9.3. Allocation of MRU Settlement Amounts to Customers</p> <p>The amount to be allocated to each</p>	<p>9.4. <del>9.3</del> Allocation of MRU Settlement Amounts to Customers</p> <p>The amount to be allocated to each Customer will</p>	<p>- Deleted provision for additional compensation in view of the proposed new MRU pricing mechanism.</p> <p>- Revised for consistency with the revisions to the</p>	<p>9.4. Allocation of MRU Settlement Amounts to Customers</p> <p>The amount to be allocated to each</p>	<p>Revert to original proposal</p>

Revisions made on the Proposed Amendments to the Manual on Must Run Unit (MRU)

Annex B

Customer will be the Total Settlement Amounts for all MRUs, including the amount paid as additional compensation, pro-rated to the Customers based on their metered quantities.	be the Total Settlement Amounts for all MRUs, <del>including the amount paid as additional compensation,</del> pro-rated to the Customers based on their metered quantities.	preceding sections on MRU settlement.	Customer will be the Total Settlement Amounts for all MRUs, including the amount paid as additional compensation, pro-rated to the Customers based on their metered quantities.	
<b>9.4. Submission of WESM Customer Information</b>  To compute the compute GPI on a regular basis, all WESM Customers shall submit to the Market Operator the relevant data on their total bilateral and spot energy purchases with their corresponding payments for each billing period.	<b><u>9.4 Submission of WESM Customer Information</u></b>  <del>To compute the compute GPI on a regular basis, all WESM Customers shall submit to the Market Operator the relevant data on their total bilateral and spot energy purchases with their corresponding payments for each billing period.</del>	- Deleted for consistency with the revisions to the preceding sections on MRU settlement.	<b>9.5. Submission of WESM Customer Information</b>  To compute the compute GPI on a regular basis, all WESM Customers shall submit to the Market Operator the relevant data on their total bilateral and spot energy purchases with their corresponding payments for each billing period.	Revert to original proposal
<b>9.5. Publication of the Generation Price Index</b>  The applicable GPI will be published in the Market Information Website.	<b><u>9.5 Publication of the Generation Price Index</u></b>  <del>The applicable GPI will be published in the Market Information Website.</del>	- Deleted for consistency with the revisions to the preceding sections on MRU settlement.	<b>9.6. Publication of the Generation Price Index</b>  The applicable GPI will be published in the Market Information Website.	Revert to original proposal
<b>New Provision</b>	<b>10. Settlement of MSU</b>  <u>Generating plants that do not follow the instructions of System Operator to reduce their target loading for a particular trading interval and continue to generate shall be tagged as MSU and shall pay the displaced Generators, if any during the said interval. A list of displaced plants including the MSU shall be submitted by System Operator to the Market Operator. The MSU will initiate the process of settlement.</u>  <u>-The settlement of MSU will be in accordance with energy settlement billing cycle. Any adjustment in the final statement shall be reflected in the next billing cycle.</u>	- Inclusion of details on <del>Causers Pay Scheme</del> by which MSUs will be compensated. The <del>Causers Pay Scheme</del> is a means to recompense for the opportunity loss by the generators designated as MSUs.  Align with the definition of MSUs	<b>10. Settlement of MSU</b>  <u>Generating plants that do not follow the instructions of the System Operator to reduce their target loading for a particular trading interval and continue to generate shall be tagged as MSUs and shall pay the displaced Generators, if any, during the said interval. A list of displaced plants shall be generated by the Market Operator from the Dispatch Deviation Report provided by the System Operator including the MSUs shall be submitted by the System Operator to the Market Operator. Displaced plants will be identified using the WMOT in the interval where an MSU was tagged by the System Operator. The Market Operator will</u>	

	<p><u>10.1 Calculation of MSU Amount</u></p> <p><u>The difference between the scheduled ex-ante quantity and the actual quantity, multiplied by the ex- post price.</u></p> <p><u><math>MSUA = (EAQ - MQ) * EPP</math></u></p> <p><u>EPP, EAQ and MQ of the designated MSU generator</u></p> <p><u>MSUA is equal to zero when (EAQ-MQ) is less than 3% of EAQ.</u></p> <p><u>9.1. Calculation of the MSU Causer Amount</u></p>		<p><u>initiate the process of settlement by informing the displaced Generators and corresponding MSUs. The MSU and the displaced Generators will settle payment among themselves in accordance with the formula as stated in this Manual.</u></p> <p><u>The settlement of MSU will be in accordance with energy settlement billing cycle. Any adjustment in the final statement shall be reflected in the next billing cycle.</u></p> <p><u>10.1 Calculation of Amounts due to Displaced Generator/s MSU Amount</u></p> <p><u>The difference between the scheduled ex-ante quantity and the actual quantity, multiplied by the ex- post price.</u></p> <p><u>Displaced Generator Amount MSUA</u> <u><math>= (EAQ - MQ) * EPP</math></u></p> <p><u>EPP, EAQ and MQ of the Displaced designated MSU Generator/s</u></p> <p><u>MSUA Displaced Generator Amount is equal to zero when (EAQ-MQ) is less than 3% of EAQ.</u></p> <p><u>9.3. Calculation of the MSU Causer Amount</u></p> <p><u><math>MSUCA = (EAQ_c - MQ_c) * EPP_c</math></u></p> <p><u>EPP<sub>c</sub>, EAQ<sub>c</sub> and MQ<sub>c</sub> of the generator that caused the MSU</u></p>	<p>Note the definitions of the EAQ, MQ, EPP to be</p>
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	<p><math>MSUCA = (EAQ_C - MQ_C) * EPP_C</math></p> <p><math>EPP_C</math>, <math>EAQ_C</math> and <math>MQ_C</math> of the generator that caused the MSU</p> <p>MSUCA is equal to zero when <math>(EAQ_C - MQ_C)</math> is less than 3% of EAQ</p> <p>9.2. <u>Settlement of MSUA</u></p> <p>The violating generator/s (MSUs) will pay the affected Generators, on a pro-rata basis with respect to EAQ-MQ. If MSUCA is greater than MSUA, the violating generator/s (MSUs) will surrender the difference to the Market Operator. Market Operator will then add it to the total NSS.</p> <p>The settlement of MSU will be in accordance with energy settlement billing cycle. Any adjustment in the final statement shall be reflected in the next billing cycle.</p>		<p><del>MSUCA is equal to zero when <math>(EAQ_C - MQ_C)</math> is less than 3% of EAQ</del></p> <p><u>10.2 Settlement of MSUA</u></p> <p><del>The violating generator/s (MSUs) will pay the affected displaced Generators, on a pro-rata basis with respect to EAQ-MQ. If MSUCA is greater than MSUA, the violating generator/s (MSUs) will surrender the difference to the Market Operator. Market Operator will then add it to the total NSS.</del></p>	copied from the Billing and Settlement Manual
New Provision	<p><u>Appendix A. Non-Exhaustive List of Criteria for the Designation of MRU and MSU</u></p> <p><i>Please see Annex A.2</i></p> <p><b>Appendix A. Non-Exhaustive List of Criteria for the Designation of MRU and MSU</b></p> <p>A. <u>Criteria for Security Related MRU</u></p> <p>1. <u>Thermal Limits</u></p>	<p>- Inclusion of appendix to properly define market scenarios which necessitate the designation of MRU and MSU. Such list will help in determining whether the SO's action is entitled to MRU/MSU payment.</p>	<p><u>Appendix A. Non-Exhaustive List of Criteria for the Designation of MRU and MSU</u></p> <p>A. <u>Criteria for Security Related MRU</u></p> <p>1. <u>Thermal Limits</u></p> <p>a. <u>Violation of Single Outage contingency criterion upon receipt of the DAP (e.g. Outage of San Jose</u></p>	

	<ul style="list-style-type: none"> <li>a. <u>Violation of Single Outage contingency criterion upon receipt of the DAP (e.g. Outage of San Jose Transformer)</u></li> <li>b. <u>Overloading of submarine cable/lines/transformers (e.g. Loading of Negros – Panay)</u></li> <li>c. <u>Generator/Transmission Line/Transformer Outage</u></li> <li>d. <u>Line/Transformer Capacity Limitation</u></li> </ul>		<u>Transformer)</u> <ul style="list-style-type: none"> <li>b. <u>Overloading of submarine cable/lines/transformers (e.g. Loading of Negros – Panay)</u></li> <li>c. <u>Generator/Transmission Line/Transformer Outage</u></li> <li>d. <u>Line/Transformer Capacity Limitation</u></li> </ul>	
	<u>2. System Voltage Requirement</u> <ul style="list-style-type: none"> <li>a. <u>Voltage correction</u> <ul style="list-style-type: none"> <li>i. <u>Under-voltage Scenario</u></li> <li>ii. <u>Overvoltage Scenario</u></li> <li>iii. <u>Outage of reactive compensation (Capacitor/Shunt Reactor)</u></li> <li>iv. <u>Insufficient reactive support</u></li> </ul> </li> </ul>		<u>2. System Voltage Requirement</u> <ul style="list-style-type: none"> <li>a. <u>Voltage correction</u> <ul style="list-style-type: none"> <li>i. <u>Under-voltage Scenario</u></li> <li>ii. <u>Overvoltage Scenario</u></li> <li>iii. <u>Outage of reactive compensation (Capacitor/Shunt Reactor)</u></li> <li>iv. <u>Insufficient reactive support</u></li> </ul> </li> </ul>	
	<u>3. Real Power Balancing and Frequency Control</u> <ul style="list-style-type: none"> <li>a. <u>Forecast error</u></li> <li>b. <u>Under-generation/Over-generation</u></li> <li>c. <u>Intra-hour variation of demand</u></li> <li>d. <u>Exhausted operating reserve</u></li> </ul>		<u>3. Real Power Balancing and Frequency Control</u> <ul style="list-style-type: none"> <li>a. <u>Forecast error</u></li> <li>b. <u>Under-generation/Over-</u></li> </ul>	

	<p><u>4. Insufficient supply capacity offer</u></p> <p><u>a. Forecast error</u>  <u>b. Under-generation</u>  <u>c. Intra-hour variation of demand</u>  <u>d. Depleted operating reserve</u></p> <p><u>5. System Tests (Regulatory requirement)</u></p>		<p><u>generation</u>  <u>c. Intra-hour variation of demand</u>  <u>d. Exhausted operating reserve</u></p>	
New Provision	<p><u>Appendix B. List of Information for the Verification and Settlement of MRUs and MSUs</u></p> <p><i>Please see Annex A.3</i></p> <p><b>Appendix B. List of Information for the Verification and Settlement of MRUs and MSUs</b></p> <p><u>The System Operator (SO) shall submit a report to the Market Operator (MO) in relation to the provisions on the MRUs and MSUs set forth in this WESM Manual. The report should, at least, contain the following information.</u></p> <p>a. <u>Trading Date – relevant trading date in which the generating unit was designated as an MRU/MSU</u>  b. <u>Trading Hour – relevant trading hour in which the generating unit was designated as an MRU/MSU</u>  c. <u>Generating Unit – name of generating</u></p>	<p>Inclusion of appendix to specify the various information/data required for the verification and settlement of MRUs and MSUs.</p>	<p><b>Appendix B. List of Information for the Verification and Settlement of MRUs and Displaced Generators</b></p> <p><u>The System Operator (SO) shall submit a report to the Market Operator (MO) in relation to the provisions on the MRUs and MSUs set forth in this WESM Manual. The report should, at least, contain the following information.</u></p> <p>a. <u>Trading Date – relevant trading date in which the generating unit was designated as an MRU or tagged as MSU</u>  b. <u>Trading Hour – relevant trading hour in which the generating unit was designated as an MRU or</u></p>	

	<p><u>unit</u></p> <p>d. <u>Designation Type – either designated by the SO as an MRU or an MSU</u></p> <p>e. <u>Ex-ante schedule – quantity scheduled for the generating unit at ex-ante (MW)</u></p> <p>f. <u>Actual Dispatch – actual power generated by the MRU/MSU at the end of the trading hour</u></p> <p>g. <u>Designation Criteria – reason for the designation of MRU/MSU based on Section 6.0 of this manual</u></p> <p>h. <u>Other Remarks – Additional remarks that the SO may provide to substantiate or further clarify the reason for the designation of MRUs/MSUs</u></p> <p><u>A separate or a combined report shall be provided by the SO covering each of the grids with WESM operations in accordance with the timeline set forth in this WESM manual. Should there be any errors or revisions in any of the reports that has already been submitted by the SO; the SO shall submit a revised report within two days of identifying the errors or necessary revision.</u></p> <p><u>The Metered Quantities (MQs) provided by the MSP at the end of the billing period shall then be used for the settlement of MRUs and MSUs based on the provisions of Items 9.3 and 10.1 of this manual.</u></p> <p><u>The final MRU/MSU Volume shall be determined and certified by the SO upon reconciliation with the Trading Participant.</u></p>		<p><u>tagged as MSU</u></p> <p>c. <u>Generating Unit – name of generating unit</u></p> <p>d. <u>Designation Type – either designated by the SO as an MRU or tagged as an MSU</u></p> <p>e. <u>Ex-ante schedule – quantity scheduled for the generating unit at ex-ante (MW)</u></p> <p>f. <u>Actual Dispatch – actual power generated by the MRU/MSU at the end of the trading hour</u></p> <p>g. <u>Designation Criteria – reason for the designation of MRU and tagging of MSU based on Section 6.0 of this manual</u></p> <p>h. <u>Other Remarks – Additional remarks that the SO may provide to substantiate or further clarify the reason for the designation of MRUs or tagged as MSUs</u></p> <p><u>A <del>separate or combined</del> report shall be provided by the SO covering each of the grids with WESM operations in accordance with the timeline set forth in this WESM manual. Should there be any errors or revisions in any of the reports that has already been submitted by the SO; the SO shall submit a revised report within two days of identifying the errors or necessary revision.</u></p> <p><u>The Metered Quantities (MQs) provided</u></p>	
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			<u>by the MSP at the end of the billing period shall then be used for the settlement of MRUs and <b>Displaced Generators MSUs</b> based on the provisions of Items 9.3 and 10.1 of this manual.</u>	
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