Philippine Electricity Market Corporation

04 September 2013

MINUTES OF THE 78th MEETING OF THE RULES CHANGE COMMITTEE

Meeting Date & Time:	04 September 2013 – 09:00 AM to 2:48 PM
Meeting Venue:	PEMC Board Room, 18th Floor, 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 Concepcion I. Tanglao --Independent Joselyn D. Carabuena --Generation -- PSALM Jose Ferlino P. Raymundo --Generation -- SMC Global Ciprinilo C. Meneses--MERALCO Gilbert A. Pagobo --Distribution --MECO Jose P. Santos --Distribution --INEC Sulpicio C. Lagarde Jr. --Distribution --CENECO Lorreto H. Rivera --Supply --Team Energy Corporation Isidro E. Cacho -- Market Operator --PEMC Ambrocio R. Rosales --System Operator --NGCP	Theo Cruz Sunico --Generation -- 1590 EC

Rules Change Committee Alternate Members
Ermelindo R. Bugaoisan -- System Operator --NGCP

PEMC – Market Assessment Group (MAG)
Geraldine A. Rodriguez
Romellen C. Salazar

PEMC – Legal
Caryl Miriam Y. Lopez-Mateo
Maria Lourdes Sabundayo San Andres

PEMC – Finance
Marissa P. Gandia

PEMC – TOD
Edward Olmedo

DOE Observer(s)
Ferdinand B. Binondo

Others Present

Dayang Mirafuentes --SNAP
Senen Fenomeno --SNAP
Raycell Baldovino --NGCP
Allan Edgar Azucena --TPEC/RESA

There being a quorum, Chairperson Dr. Rowena Cristina L. Guevara called the meeting to order at around 9:00 AM.

1. Adoption of the Proposed Agenda

The Proposed Agenda for the 78th RCC Meeting was approved, as amended, in consideration of MERALCO's request for inclusion, as an Agenda item, of its Comments relative to the proposed amendments to the WESM Rules and the Billing and Settlement Manual on Prudential Requirement, although the same as noted by the RCC was submitted past the deadline.

2. Review, Correction, and Approval of the Minutes of the 77th RCC Meeting

The Minutes of the 77th RCC Meeting was approved, as amended. Corrections made are as follows:

- On page 2, line 17:

  "The ~~**P**~~**p**roposed Agenda for the 7**76**th RCC Meeting was approved, as presented."

- On page 6, line 3:

  "Fran**cs**isco Castro..."

- On page 9, line 28:

  "...provision for the WESM members ~~**which that**~~ already anticipant..."

- On 24, lines 41-43:

  "XXX ~~**He explained further that in the ex-ante, once a pricing error exists, an average price in the ex-ante is substituted.**~~ XXX" (10:20)

- On page 26, line 1:

  "..6,300**0**MW, in which case,..."

- Mr. Lorreto Hilario-Rivera also requested the correction on the spelling of her name as well as her company name, as follows:

Lorretto -- Team Energy **Corporation ~~Philippines~~**

In the course of the RCC's review of the subject Minutes of meeting, Dr. Guevera emphasized that RCC's agreement as reflected on page 25, lines 16 to 20 of the said minutes, is that after the two simulations requested by Mr. Ambrocio Rosales and Mr. Ciprinilo Meneses have been deliberated upon by the RCC, the members should already refrain from making any further requests for additional simulations and that the RCC should already finalize its proposed amendments relative to Pricing Error Notices (PEN).

Following the RCC's review of the subject Minutes and noting the corrections made on the same, the Minutes of the 77th RCC Meeting held on 07 August 2013 was approved, as amended.

Before proceeding with the discussion of the next items in the agenda, Dr. Guevara acknowledged the presence of representatives from SN Aboitiz Power (SNAP)--Ms. Dayang Mirafuentes and Mr. Senen Fenomeno--who were invited to give clarification on the comments submitted by SNAP relative to the RCC proposal on Prudential Requirements on 14 August 2013. Likewise acknowledged were observers to the meeting, as follows: Mr. Reycell Baldovino from NGCP and Engr. Allan Azucena from the Retail Electricity Suppliers Association (RESA).

3. Business Arising from the Previous Meeting

- **Proposed Amendments to WESM Rules and the Billing and Settlement Manual**

  - **Comments from SN Aboitiz Power**

Following the introduction of the two representatives from SNAP, Dr. Guevara gave the floor to Mr. Fenomeno to clarify SNAP's comments on the proposed amendments to the WESM Rules and the Billing and Settlement Manual on Prudential Requirement. The comments raised by SNAP as explained by Mr. Fenomeno are as follows:

On the proposed 35-day basis of Prudential Requirement

- It is the SNAP Group's position that the 35-day basis of PR should be shelved and the present 63-day basis should be retained because this is the real risk the generators / suppliers have to take in case of non-payment from distribution utilities, bulk users, and end-users.

- SNAP's portfolio is a Hydro Plant and therefore, the water which it uses as fuel is not guaranteed all year round unlike other generator types which can readily purchase fuel to run their plants.

- SNAP's contracting is limited to a very small quantity unlike most coal plants which are fully contracted. SNAP's risk as compared with coal plants is bigger since a big chunk of SNAP's revenue comes from the

spot market. He expressed that the case is common for merchant plants whose only market is derived from the WESM.

On Margin Call

- It is the SNAP Group's position to retain the current arrangement under the WESM Rules, that a Margin Call shall be issued "as soon as practicable" and "should be satisfied by 3:00 pm if the same is issued before 10:00 am of a business day" and that "in all other cases, the MC should be satisfied by 10:00 am of the following day." In support of its comment, SNAP stated that "a trading participant, by the very nature of such participation in the spot market, knows its trading limits and more importantly ought to know if it is exceeding beyond the said limits. This knowledge should be the basis of its readiness to satisfy the MC and not its issuance. However, even (if) the time is reckoned from the issuance of the MC, the minimum five (5) business hour limit is reasonable in this age of electronic fund transfer."

- On the issuance of MC "as soon as practicable," it was requested that the phrase be clarified to differentiate it with "immediate issuance." SNAP further commented that a delay in the sending out of notices and stretching/extending the deadline to comply with the margin call would be an avenue of exposure which would contradict the "zero-risk" market concept of the WESM.

On Physical Disconnection

- The curing period for the suspension or physical disconnection should be revisited, to include the sanctions that would lead to physical disconnection. SNAP commented that currently, even with a Suspension Notice, a WESM member remains connected and continues to draw power from the grid. As such, the risk on the part of the generator and supplier is continuing.

After giving time for SNAP representatives to explain the comments it submitted to the RCC relative to the proposal on PR, the RCC deliberated on the same. Following are the highlights of the discussions that ensued:

- Mr. Lagarde shared about the recent public consultation held in Iloilo among electric cooperatives, which purpose was to discuss the issue on whether or not to allow electric cooperatives to collect a certain amount from its consumers in order to put up funds that would satisfy the prudential security requirement of the WESM. The effect of such would be a new line item below the normal tariff configuration that is already allowed by the Energy Regulatory Commission (ERC). The idea is that a certain amount will be collected every month, most likely one fourth of one centavo, which will be added to the bill of consumers and which amount will be used to help satisfy the Prudential Security amount that WESM Customers are required to post. He explained, however, that such amount will not be part of the asset of the electric cooperative and instead, will be booked as a contingent liability. This means that anytime there is a new law that is issued prohibiting or disallowing

the charging of the prudential deposit, the amount will be returned to the consumers. Mr. Lagarde expressed that the ECs intend to submit the proposal to the ERC, but the amount to be collected has not been determined yet.

- With regards to the level of security deposit, Mr. Lagarde opined that on the part of the ECs, there are more good paying ECs than delinquent ones and therefore, a security deposit equivalent to 35-days is already sufficient to cover the risk of the generators. In response to this statement, Mr. Fenomeno clarified that SNAP's comments are relative to its risk on SNAP's actual exposure in the market.

- Ms. Loretto shared that based on brief discussions with some members of the Philippine Independent Power Producers Association (PIPPA), she was able to confirm that the generators of PIPPA seem to be keen on their position to retain the 63-day prudential security level, although PIPPA as a whole does not have a single, unified position paper at the moment.

- Mr. Lagarde stated the need to clarify on the generator exposure being pointed out by SNAP. He said that purchase of electricity refers to two things, the KWh volume purchased through a bilateral contract and the KWh purchased in the market. For the volume purchased through bilateral contracts, this is already determined after the trading day. As such, by the end of the billing month, they already know how much they need to pay relative to their bilateral contract quantity (BCQ). He opined that, SNAP probably pointed out that its exposure reaches more that 60 days because it is only after the 30th day corresponding to the billing period that the market is able to determine the generator's exposure to the DUs. He stated further that it may be possible that the generator risk is equivalent to 63 days for the volume that was purchased in the WESM. He concluded therefore that the prudential deposit should be viewed only in terms of the volume traded in the WESM.

- On the comment of Mr. Lagarde above, Ms. Rivera stated that perhaps, SNAP's comments are based on its status as a merchant plant, explaining that under the WESM, only spot purchases are being subjected to prudential security requirements. On the other hand, with regard to BCQ, she stated that if a plant is fully contracted, the PR will not have any impact on the TP as it will not have any exposure because its payments are different. In addition, she stated that with the PR in place, generators are supposed to be paid even when a Customer fails to make on-time payment.

- Dr. Guevara stated that the RCC previously informed the PEM Board of its position to retain the 63-day PR cover. However, a more recent PEM Board directive imposed a 35-day PR cover. She stated that the reason for the RCC's discussion of the Prudential Requirement now is to ensure that the WESM Rules and Manuals are compliant and consistent with the PEM Board Directives relative to PR. On this note, Ms. Joselyn Carabuena inquired whether the generators can still make a strong position to enable the sector to change the Directives. In response, Mr. Francisco Castro said that since the issue has already been decided at the Board level, the RCC is there to implement such directives as far as the WESM Rules and Manuals are

concerned. He added that if the position of the generators is to retain the 63-day PR cover, he opined that probably, they can raise their concerns directly with the PEM Board because it is only the PEM Board that can reverse its own Directives. He said that given the PEM Board Directives, the RCC can no longer make any recommendation at their level to revert back to 63 days or raise it to 70 days as recommended by some of the generators, because it is already the PEM Board decision that the RCC is trying to implement. On this note, Dr. Guevara expressed that all the SNAP's comments relative to the 35-day PR were already answered.

- With regard to SNAP's comment on margin call, on its suggestion to clarify the difference between "as soon as practicable" and "immediate" issuance, Atty. Maila de Castro clarified that the "as soon as practicable" is an existing provision and that the RCC did not make any change to the current time table. She referred to Section 3.15.10.3 of the WESM Rules as subject of the SNAP's comment relative to satisfying the margin call, which comment of SNAP is basically to retain the original provision.

- Responding to the comment, Ms. Marissa Gandia stated that under the WESM Rules, the margin call should be satisfied by 3:00 pm if the margin call notice was issued before 10:00 am of that same business day. In all other cases, the margin call should be satisfied by 10:00 am of the following day. However, PEMC's practice has been to issue a margin call 3 days prior to the date of margin call because no Customer can comply with the current arrangement stipulated in the WESM Rules relative to satisfying the margin call. She stated further that what PEMC has been doing is to issue a margin call on the 16th or 17th of the month, prior to the date of margin call which is set on the 20th of the month in order to give sufficient time to Customers to raise the amount within a reasonable time frame.

- On the last statement of Ms. Gandia that no one can comply, Mr. Fenomeno inquired on the reasons why no one can comply with the current arrangement. Ms. Gandia responded that there are so many reasons given by the various Customers and it would perhaps be more appropriate to ask them to respond to the inquiry of SNAP.

- For clarity, Dr. Guevara explained that the bottom line of SNAP's comment is to retain the current arrangement in the WESM Rules relative to the issuance of margin call notice. She proceeded by saying that PEMC's current process is to issue the margin call notice three days prior and ante-date the same in order to give the Customers sufficient time to satisfy the margin call come the 20th.

- Ms. Gandia explained that the daily monitoring of actual exposure is not feasible at the moment, and as such, monitoring of actual exposure is done on a monthly basis, with PEMC issuing the margin call on the 20th of the month.

- Following Ms Gandia's explanation, Mr. Fenomeno inquired on the reasons why PEMC is not able to perform the daily monitoring of the actual exposure, considering that the Metering Service Provider (MSP) provides the metered data on a daily basis. Mr. Cacho responded that although the metered data is

provided daily, there are occurrences of meter trouble as indicated in Meter Trouble Reports (MTR). In the current process, the MSP provides the final set of data by the end of the billing period. He explained further that the final set of metered quantity is critical in the entire settlement process since it impacts for instance on the computation of the Net Settlement Surplus (NSS), among others.

- On this note, Mr. Fenomeno recommended looking into the process described by Mr. Cacho, stating that the MSP is the MO's service provider and it is assumed that there is a certain service level agreement between the two. Mr. Cacho reiterated that while it is true that the Manuals provide for the daily provision of the meter data, there is also a provision for the correction of the meter data which is PEMC's basis for its current process. On this note, Dr. Guevara also clarified that the RCC is driven by the proposals for changes, meaning, if any of the WESM members submits a proposal for rules changes, then it is the only time that the RCC can act on such. She opined however that proposals relating to the operations of the MO is probably not within the RCC's jurisdiction.

- Ms. Mirafuentes of SNAP inquired why they are not able to receive the payment in full for their exposure if the PR is actually in place, which PR in the current Rules, should correspond to cover the 63-day exposure of generators.

- Ms. Gandia explained in response to the above that there are tax related issues awaiting the ruling of the Bureau of Internal Revenues (BIR). She stated that as of the moment, there are no other outstanding collectibles other than those related to withholding taxes.

- On the explanation given by Ms. Gandia, Ms. Mirafuentes stated that as such, generators should be advised by PEMC of what is related to taxes with an expression of intent from PEMC to resolve said issues within a given period. Otherwise, she stated, that as far as SNAP is concerned, such is a case of deficit in collection.

- Proceeding with the discussion, Mr. Isidro Cacho explained that relative to SNAP's comment/inquiry on disconnection, such is covered by the Department of Energy (DOE) policy on disconnection as stipulated in a particular Department Circular. Dr. Guevara requested Mr. Cacho to provide copy of said DOE Circular to SNAP, which Mr. Cacho duly noted.

- Mr. Rosales briefly explained the procedure on disconnection. He stated that once the NGCP receives a disconnection notice from PEMC, the NGCP issues a notice of interruption to the concerned Customer. On the 7th day after the notice of interruption was issued, physical disconnection is implemented. In addition, Mr. Cacho explained that in the current process, the notice of disconnection is issued as soon as the Customer fails to comply with the margin call.

- Mr. Fenomeno commented that the issuance of margin call 3 days prior to the date of margin call only seems to extend compliance of the Customers to the

margin call. He thus inquired on the basis of PEMC for setting the margin call on the 20th.

- Mr. Castro clarified that from his understanding of the explanation given by Ms. Gandia, PEMC follows such a procedure, making an exception that is not necessarily what is written in the Rules, in order to avoid the dire consequences if a margin call is not satisfied.

- Ms. Gandia reiterated that based on the Rules, the margin call should be issued once the actual exposure exceeds the trading limit. But such procedure is hard to strictly implement because of the metering corrections earlier explained by Mr. Cacho. Mr. Cacho added that the MSP complies with its agreement with PEMC as a metering service provider but there are also errors that are unavoidable that should be given consideration. Mr. Castro then noted that while the data is available, the validation process takes some time.

- On the question regarding the basis for issuing a margin call, Ms. Gandia explained that since PEMC cannot compute actual exposure on a daily basis, PEMC fixed the calculation after the issuance of the final statement on the 13th and before the due date, which margin call date was set on the 20th of the month. She stated that such procedure was also discussed with the PEM Board. She explained further that setting the margin call on the 20th and issuing the margin call notice 3 days before margin call date has been the PEMC's practice in order to allow for sufficient time for Customers to raise funds that would satisfy the margin call.

- Mr. Lagarde commented that such practice by PEMC of issuing the margin call after the final bill is acceptable to the ECs as discussed in one of their fora. He explained that trading results are not based purely on the volume that was delivered through the market. He stated that there are also cases of congestion caused by the National Grid Corporation of the Philippines (NGCP) which should be taken into consideration. He explained that for instance, if congestion occurred on the 26th of the month which is also day 1 of the billing cycle and if the actual exposure is computed on a daily basis, this would mean that as early as the second or third day of the billing cycle, the Customer will already exceed its Prudential Security because of the constraint created by the fault in the transmission line. On this note, he stated that the current practice of PEMC, as far as the ECs are concerned, is justified.

- As a clarification to the statements of Mr. Lagarde above, Mr. Rosales stated that the cause of line tripping is a fault in the line which is not necessarily the fault of NGCP. He expressed that there are faults which are beyond the control of the NGCP.

- Mr. Fenomeno commented that they recognize that the 35-day PR is a PEM Board directive. He expressed however, that the issuance of a margin call seven days after the final statement only further increases the exposure of generators. In response, Dr. Guevara reiterated, that as explained by PEMC, there are inaccuracies reported through MTRs that need to be considered

and validated, which cause the "delay" in the issuance of the margin call notice.

- Ms. Gandia expressed that on the part of PEMC, it can comply with the existing Rules. In fact, it can issue a margin call notice prior to the date of margin call. However, she suggested hearing from the side of the Customers who are the subject of the margin call. The reason PEMC is proposing to revise the Rules is in order to allow better compliance among Customers. She expressed that if the Customers can say that they can comply with the existing Rules, then PEMC is willing to retain the existing Rules.

- Ms. Hilario-Rivera inquired on the names of these Customers who cannot comply, expressing that as far as RESA members are concerned, to her knowledge, they are compliant with the margin call. In response, Ms. Gandia stated that she cannot disclose the names at this point, but PEMC is only basing the proposal on past experiences. For instance, if a margin call is received today and even if the Customer issues a check on the same day, clearing will still take about 3 days. On the other hand, in the case of real time settlement like fund transfers, such still takes time as approval from the heads of concerned ECs is needed. These are just some of the reasons that constrain the Customers from satisfying the margin call. Ms. Gandia also noted that non-compliant members are mostly direct members.

- Mr. Gilbert Pagobo commented that most probably, Customers are now able to comply because of PEMC's practice of issuing the margin call 3 days prior to the date of margin call. In addition, Mr. Meneses commented that MERALCO, being a recipient of margin calls every month, stated that it does not matter if the Customer is given 5 hours or 3 days because it is still on the 20th that the Customer must make payment to satisfy the margin call. He commented, however, that on the part of the DUs, 5 hours is impractical to comply with because it is not easy to raise P4 billion, for instance, in a very short span of 5 hours. He opined that the 3-day window is just making it practical in order for them to gather the funds needed to satisfy the margin call.

At this point, Dr. Guevara noted that all the concerns raised by SNAP in its comments were already addressed based on the above discussion. She summarized the response to the issues raised by SNAP, as follows:

- ✓ On the basis of the 35-day PR, this has already been decided upon by the PEM Board;
- ✓ On the margin call, this is issued based on a monthly horizon instead of a daily horizon due to constraints in the system such as the meter trouble reports, and as such, PEMC is able to issue the margin call 3 days prior to the date of margin call;
- ✓ The "as soon as practicable" issuance of margin call is not part of the RCC proposal, thus, if SNAP wants this changed to "immediate" issuance, it has to submit a formal proposal for the RCC to deliberate upon;
- ✓ On the disconnection notice procedure, such is covered by the DOE policy on disconnection as stipulated in a DOE Circular, copy of which shall be provided by PEMC to SNAP.

After which, the body proceeded with the discussion on MERALCO's comments to the subject proposal.

- **Comments of MERALCO**

Mr. Meneses explained that MERALCO has a dedicated Regulatory Office responsible for crafting such comments. However, noting that the comments received were already addressed in the previous RCC discussions on the matter, the RCC agreed to no longer discuss in detail the comments submitted by MERALCO.

Following the above discussion, the RCC agreed to adopt the proposed amendments to the WESM Rules and the Billing and Settlement Manual on Prudential Requirement, as discussed.

At this point, Mr. Cacho raised that the RCC previously discussed the definition of average actual market price and agreed on its insertion in the WESM Rules, which definition was to be verified with PEMC Billing and Settlement Department. Upon verifying, Mr. Cacho stated the definition of the average actual market price, as follows: **the ratio of the total spot market payment of a *WESM member*, which may include spot market energy and reserve transactions and line rental amount for contracted quantities, to the total metered quantities net of bilateral contract quantities for each billing month.**

After which, the RCC agreed to insert the above definition of average actual market price under Section 3.15.4.1 of the Billing and Settlement Manual.

Following the discussion, the RCC passed the Resolution approving the proposed amendments as discussed, and endorsing the same to the PEM Board.

- **Updates on the RCC Actions Plans on the DOE Directives relative to PEN**

  - **Proposed Amendments to the WESM Rules and the PEN Manual**

Mr. Cacho presented to the RCC the result of the simulations previously requested by the RCC from PEMC-TOD, based on the suggestions of Mr. Rosales and Mr. Meneses, and in compliance with the DOE Directives to look into other methodologies, as follows:

- Simulation of nearest nodes based on locational distance
- Simulation of nearest nodes based on translated TLFs

The simulations performed used the sample period 14th August 2013, on the 14:00 trading interval. In this said interval, there was a price of 942,856.50 which was reflective of the contingency CVC. In the actual re-run, the price was P17,476.45. Below are the comparative results of simulations as presented by Mr. Cacho, including the original simulation based on the weighted significance of the 5 nearest nodes.

Summary of Results (5 Nearest Nodes)

Original Price, PhP/MWh	RTD Re-Run w/o Contingency, PhP/MWh
942,856.50	17,476.45

Methodology	Price Substitute	Accuracy, %
Based on Original Proposal	17,470.36	0.03%
Based on Location	17,603.13	0.72%
Based on Translated TLF	17,470.36	0.03%

Wholesale Electricity Spot Market

11

Observations

- Based on Location
  - Less accurate since it does not reflect WESM's pricing methodology
    - In the WESM, losses are not a function of nearness in location, rather it is a function of the contribution of a certain node to the overall system loss
    - TLFs are dynamic, and should not be based on location
  - It is more tedious to determine the nearest nodes based on location, hampering the intention to automate such a functionality
- Based on Translated TLF
  - There is no difference between the initial methodology of using an original TLF since it shall still determine the same set of nearest nodes

Wholesale Electricity Spot Market

12

Following the presentation and noting the results of additional simulations presented by Mr. Cacho, the RCC agreed to retain the original methodology presented by the PEMC-TOD using the weighted significance of the 5 nearest trading nodes based on Transmission Loss Factor (TLF).

The RCC then proceeded with the discussion on the proposed amendments to the WESM Rules and the Manual, and likewise, requested Mr. Castro to discuss the proposal drafted by the PEN Sub-committee. Mr. Castro noted the following based on the RCC discussions on the matter in the previous meeting:

- ✓ The RCC deferred further discussions on the matter as the simulation results would have an effect in the changes in the Manual in case the RCC decides to adopt either of the additional simulations requested with the TOD, specifically on the determination of the nearest nodes;
- ✓ The formula as a result of simulation should be plugged in to relevant sections in the WESM Rules/Manuals; and
- ✓ As commented by Mr. Cacho, the provisions as crafted by the PEN sub-committee were inserted in the ex-post or RTX provisions instead of the ex-ante provisions where it would be more appropriately included.

On this note, Mr. Cacho volunteered to review and re-draft, as necessary, the proposed amendments both on the WESM Rules and the Manual taking off from the draft previously discussed by the RCC. Dr. Guevara requested for the same to be provided to the RCC by Tuesday of the following week. Likewise, it was agreed that the RCC members shall be given 2 days upon receipt of the documents to review the same, after which, the proposal shall be posted in the website to solicit comments from participants and other interested parties.

Ms. Rodriguez clarified that there is already a previously RCC- approved Manual on PEN. She noted that the when the same was approved by the RCC, there were no corresponding changes to the WESM Rules. She then clarified that the WESM Rules changes crafted by the PEN sub-committee is a new proposal, which the RCC noted.

- **Updates on the RCC Actions Plans on the DOE Directives re MRU/MSU**

Chairman of the MRU sub-committee Atty. Maila de Castro endorsed the discussion on the matter to Mr. Rosales for the proposed PGC amendments, and to Mr. Cacho for the proposed amendments to the WESM Rules and the MRU Manual.

- **Proposed amendments to the Philippine Grid Code (PGC)**

Mr. Rosales presented and discussed the proposed amendments to the Philippine Grid Code as discussed and crafted by the MRU Sub-committee. Below are the proposed amendments as presented by Mr. Rosales:

Title/Section	Original or New Provision	RCC Proposed Amendment (MRU Sub-committee)
Chapter 1 Grid Code General Conditions		

	Inclusion of New Definition to PGC of "Must Run Unit (MRU)"	**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 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.** **a. 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.** **b. Real Time MRU – MRU designated by the System Operator within a trading interval.**
	Inclusion of New Definition to PGC for "Must Stop Unit (MSU)"	**Must-Stop Unit (MSU) – a generating unit identified and instructed by the System Operator to reduce the provision of energy due to its non-compliance of the Dispatch Schedule to address or prevent possible threat to the System Security requirements of the Grid.**
	New (lifted from MRU Manual with minor revisions)	**Out of Merit Dispatch – the dispatch of a generating unit outside or not in accordance with the WESM Merit Order Table to address threats in System Security.**
	Inclusion of New Definition to PGC of "Constrain-On" as defined in the WESM rules	**Constrain-on. In respect of a *generating unit*, the output of that *generating unit* is limited above the level to which it would otherwise have been dispatched by the *Market Operator* on the basis of its *energy offer*.**
	Inclusion of New Definition to PGC of "Constrain-Off" as defined in the WESM rules	**Constrain-off. In respect of a generating unit the output of that *generating unit*is limited below the level to which it would otherwise have been dispatched by the *Market Operator* on the basis of its *energy offer*.**
	Inclusion of the definition of "Constraint" as defined in the WESM rules	**Constraint. A limitation on the capability of any combination of *network elements, loads, generating units or Ancillary Service Providers* such that it is, or is deemed by the *System operator* to be, unacceptable to adopt the pattern of transfer, consumption, generation or production of electrical power or other services that would be most desirable if the limitation were removed.**

Chapter 3 Performance Standards for Transmission		
3.2.2 Frequency Variations		
	3.2.2.2 The control of system frequency shall be the responsibility of the System Operator. The System Operator shall maintain the fundamental frequency within the limits of 59.4Hz and 60.6 Hz during normal conditions. However the System Operator shall intervene when the frequency limits of 59.7Hz and 60.3 Hz are breached.	3.2.2.2 The control of system frequency shall be the responsibility of the System Operator. The System Operator shall maintain the fundamental frequency within the limits of 59.4Hz and 60.6Hz during normal conditions. However, the System Operator shall intervene when the frequency limits of 59.7Hz and 60.3Hz are breached. **For this purpose, the System Operator shall constrain-on or constrain-off, or make use of MRU, if all applicable Ancillary Services are already depleted or exhausted.**
Chapter 6 Grid Operations		
6.2.2 Grid Operating Criteria		
	6.2.2.3. The Security and Reliability of the Grid shall be based on the Single Outage Contingency criterion. This criterion specifies that the Grid shall continue to operate in the Normal State following the loss of one Generating Unit, transmission line, or transformer.	6.2.2.3. The Security and Reliability of the Grid shall be based on the Single Outage Contingency criterion. This criterion specifies that the Grid shall continue to operate in the Normal State following the loss of one Generating Unit, transmission line, or transformer. **However, the System Operator shall take the necessary actions whenever there's already a threat or an impending threat in system security as a result of non-compliance to single outage contingency criterion, through the use MRUs, or constrain-on/constrain-off of generating units, to ensure the security and reliability of the grid.**
	6.2.2.4. The Grid Frequency shall be controlled by the Frequency Regulating Reserve during normal conditions and by the timely use of Contingency Reserve and Demand Control during emergency conditions.	6.2.2.4. The Grid Frequency shall be controlled by the Frequency Regulating Reserve during normal conditions, and by the timely use of ~~**Contingency Reserve and Demand Control during emergency conditions**~~ **all applicable Ancillary Services. However, the System Operator shall constrain-on/constrain-off or make use of MRUs whenever the grid frequency breached the 60.3Hz or 59.7Hz as stated in Section 3.2.2.2. During emergency conditions, the System Operator shall implement demand control as a last resort in order to ensure the reliability and security of the grid.**

	6.2.2.9 New Operating Criteria	**6.2.2.9 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 augment the exhausted or depleted reserves and ensure the reliability and security of the grid. The following operating criteria for MRUs shall be observed:** **1. System Voltage Requirement – 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.** **2. Thermal Limits of Transmission Line and Power Equipment – this refers to the dispatch limitations of generators affected by the actual condition of the transmission lines and/or power equipment.** **3. Real-power Balancing and Frequency Control – this refers to the energy requirement to maintain supply-demand balance.**
6.3.1 Operational Responsibilities of the System Operator		
	6.3.1.3. The System Operator is responsible for ensuring that Load-generation balance is maintained during emergency conditions and for directing Grid recovery efforts following these emergency conditions.	6.3.1.3. The System Operator is responsible for ensuring that Load-generation balance is maintained during **normal and emergency conditions in accordance with Sections 3.2.2.2 and 6.2.2.4, respectively and following an emergency condition, the System Operator is also responsible for directing Grid recovery efforts.**
	6.3.1.4. The System Operator is responsible for controlling Grid Voltage Variations during emergency conditions through a combination of direct control and timely instructions to Generators and other Grid Users.	6.3.1.4. The System Operator is responsible for ~~**controlling Grid Voltage Variations during emergency conditions through a combination of direct control and timely instructions to Generators and other Grid Users.**~~ **ensuring the Grid Voltage is maintained within the normal limits at all times and shall take the necessary actions to the best judgement of his judgement whenever the grid voltage of +/- 5% of the nominal voltage are breached and even during emergency conditions through a combination of direct control and timely use of MRUs as required by the System Operator.**
6.3.3 Operational Responsibilities of Generators		

	6.3.3.4. The Generators is responsible for executing the instructions of the System Operator during emergency conditions.	6.3.3.4. The Generators is responsible for immediately executing the **dispatch** instructions of the System Operator **at all times during normal and most importantly** during emergency conditions **or whenever required to run as MRUs to address the power quality, reliability and security of the grid.**
Chapter 7 Scheduling and Dispatch		
7.2.2 Responsibilities of the System Operator		
	7.2.2.1. The System Operator shall be responsible for the issuance of Dispatch Instructions for all the Scheduled Generating Units and for all the Generating Units providing Ancillary Services, following the Dispatch Schedule prepared by the Market Operator.	7.2.2.1. The System Operator shall be responsible for the issuance of Dispatch Instructions for all the Scheduled Generating Units and for all the Generating Units providing Ancillary Services, following the Dispatch Schedule prepared by the Market Operator. **However, the System Operator may schedule or issue dispatch instructions to generators to constrain-on, constrain-off, or may make use of MRUs/MSUs with due consideration to reliability and security of the grid.**
7.2.4 Responsibilities of the Generators		
	7.2.4.3. The Generator with a Scheduled Generating Unit shall be responsible for ensuring that all Dispatch Instructions from the System Operator are implemented within the Dispatch Tolerances.	7.2.4.3. The Generator with a Scheduled Generating Unit shall be responsible for ensuring that all Dispatch Instructions from the System Operator are implemented **~~within the~~ in accordance with** the Dispatch **Schedule ~~Tolerances~~ issued by the Market Operator. However, the Generator shall follow the dispatch instructions issued by the System Operator without delay whenever required to constrain-on/constrain-off or to function as MRUs/MSUs to ensure the reliability and security of the grid.**
7.3.2 Dispatch and Scheduling		
	7.3.2.4. New provision	**7.3.2.4. In the event that the Dispatch Schedule issued by the Market Operator is not feasible to implement after being subjected to the final security screening by the System Operator, the System Operator shall declare Market Intervention in coordination with the Market Operator.**
7.3.3 Dispatch Implementation		

	7.3.3.3. The following information shall be provided by the System Operator to the Market Operator in the implementation of the dispatch: (a) Status of the Generating Units, transmission lines and substation facilities (b) Planned and forced outages (c) Reserve requirements and allocations (d) Security constraints and contingency (e) System emergencies	7.3.3.3. The System Operator shall ensure that the following information shall be provided to the Market Operator to come up with a security constrained economic dispatch schedule prior to the implementation of the dispatch schedules: a. **~~Status of the Real Time Snapshots to~~ determine the status of the Generating Units,** transmission lines and substation facilities b. Planned and forced outages **of Generating units/Lines/Equipment** c. **Ancillary Services based on** Reserve requirements and **its** allocations d. **Imposition of** security constraints **~~and contingency~~** e. **List of contingencies for single outage contingency**
	7.3.3.5. The System Operator shall continuously monitor the Grid to ensure compliance with Dispatch Instructions by industry participants. All noncompliance to Dispatch Instructions shall be reported by the System Operator to the Market Operator and the Grid Management Committee.	7.3.3.5. The System Operator shall continuously monitor the Grid to ensure compliance with Dispatch Instructions by **~~industry participants~~ the Generators**. All non-compliance to Dispatch Instructions shall be reported by the System Operator **~~to~~, in coordination with** the Market Operator, to the Market Surveillance Committee (MSC) and to the Grid Management Committee (GMC). **The Generators who failed to comply with the dispatch instruction with the System Operator may be penalized in accordance with the WESM Rules and Manuals.**

Following are the discussions relative to the presentation of proposed amendments to the PGC:

- On the definition of Security Limit, as mentioned under the item on the Scheduled MRUs, Dr. Guevara commented that it seems strange mentioning that the definition is "as referred to in the Dispatch Protocol Manual" in the Philippine Grid Code considering that in the hierarchy of rules, the PGC is the higher of the two. She then recommended the inclusion of the definition of Security Limit in the PGC based on the definition indicated in the WESM Rules or the Dispatch Protocol Manual, which suggestion Mr. Rosales agreed with.

- On Chapter 3, Mr. Rosales emphasized that the control of the system frequency shall be the responsibility of the System Operator. He stated that a grid frequency of 60Hz is an indicator that the system is balanced relative to supply and demand. As stated in the PGC, the grid frequency is still considered in the normal range between 59.4Hz and 60.6Hz. He explained that any deviation from this frequency range would mean a significant imbalance between the system supply and demand. He also emphasized that in order to achieve power quality, the SO may intervene when the grid frequency breached 59.7Hz and 60.3Hz. The SO shall constrain-on or constrain-off generators in the Merit-Order Table (MOT) to guide the SO in the dispatch implementation or make use of MRUs provided all applicable

ancillary services are already depleted or exhausted, in order to maintain the power quality of the Grid.

Mr. Rosales explained that calling a generator not in accordance with the MOT or an out-of merit dispatch shall be categorized as MRU provided the ancillary services are depleted. Upward changes in the system requirement allows the System Operator to constrain-on according to their ranking, generators in the merit order table with offers not dispatched to increase their output. In the same manner, when system demand is low, the System Operator is unable to implement the real time dispatch schedule, thus, generators according to their ranking in the merit order table, are called to constrain-off their output. The System Operator makes use of out of merit dispatch when the ramp rate of generators being called to constrain-on ~~and constrain-off~~ is slow, and when the grid frequency starts to deteriorate. When the Grid frequency drops below the 59.4Hz limit and the system leads to an abnormal condition, the last resort for the SO is to implement manual load dropping which effectively prevents the occurrence of automatic load dropping. In the same manner when the 60.6Hz frequency is breached, the SO applies the excess generation procedure as specified in the Dispatch Protocol Manual. Mr. Rosales stated that all these procedures by the SO are now aligned with the proposed amendments to the Grid Code.

Having noted the explanations given on the use of the Merit Order Table in the SO's procedure, Dr. Guevara inquired whether the same will be used as the rationale for the proposal under Section 3.2.2. Atty. De Castro responded that the constrain-on and constrain-off as discussed by the Sub-committee, would be indicative of the merit order table or the energy offers, although there is no specific mention of the term under the definition of constrain-on and constrain-off. Dr. Guevara then commented that a proposal should be understandable, and noting that there is no mention of the MOT in the constrain-on and constrain-off definition, the proposal makes it all unclear to the reader.

Dr. Guevara inquired whether the sub-committee is proposing to use depleted or exhausted. She recalled the DOE directive using the term exhausted, specifically, *"MRU shall be used only after the SO has exhausted all available AS."* Dr. Guevara also commented that even the term applicable and available are also different. She thus suggested removing the term applicable to make the proposed amendment clearer. She stated that the wordings should be exact, and the use of the term applicable seems strange. Mr. Castro stated that when you use the term applicable, you have to define the conditions where it is applicable.

- Atty. De Castro stated that for the record, the SO, MO, and the DOE all agreed on the particular provision being discussed by the RCC, which Dr. Guevara duly noted. Dr. Guevara stated however that her only concern is being precise and exact with the use of language in the RCC proposals for the appreciation and better understanding of the readers. She stated that the use of applicable is not very clear. As for the use of the term exhausted or depleted, she said that the bottom line of a Must Run Unit is increased cost on the part of the Customer. The objective of the RCC, and probably of the

DOE for using the term exhausted is to tap the cheapest in terms of price of energy.

- In response to the first comment on the use of depleted or exhausted, Mr. Rosales stated that from the System Operator's point of view, depleted pertains only to the energy available in real time. On the other hand, exhausted pertains to energy provided by generators which are either on-line or on shut down. Mr. Rosales explained that the SO's interpretation of the term exhausted is that the System Operator shall wait for the ancillary services providers that are on shutdown to be exhausted before the SO is allowed to call an MRU.

  Mr. Rosales stated that a dispatchable reserve, once nominated by the generator, is available every hour at anytime the System Operator calls it to run. However, it takes a maximum of 15 minutes before it can come online. For this reason, both exhausted and depleted were included in the proposed provision to make it more flexible to include both conditions.

  On the second comment of Dr. Guevara, Mr. Ferdinand Binondo explained that the sub-committee during discussion on the matter, agreed on the term applicable because they have identified some types of reserves such as reactive support, which are not used to address frequency variations. He stated further that it would depend what is the applicable reserve type or category at the time that an event of frequency variation occurs.

  As an additional information, Mr. Cacho stated that there are over-lapping provisions under the Grid Code relative to the use of reserves which gives the interpretation that it allows doing what is necessary on the part of the System Operator.

- Ms. Concepcion Tanglao inquired whether it is possible to just indicate in the subject proposal what is included under "applicable" for the MRU. Dr. Guevara explained that the bottom line of the discussion is that the dispatcher cannot ensure the consumer of the cheapest result of the electric bill because the primary objective of the System Operator is maintaining the required frequency for the security and reliability of the grid, otherwise, load dropping would occur leading to brownouts. Dr. Guevara however noted that the SO is only doing its job as the dispatcher.

- Mr. Rosales reiterated that there are five types of ancillary services, as follows: Regulating Reserve, Contingency Reserve, Dispatchable Reserve, Reactive Power Support, and Black Start Capability. He explained that in terms of frequency variation, if the term applicable is to be used, voltage support or reactive support and black start are not applicable. He emphasized that the only applicable reserves in this case would be the Regulating, Contingency, and Dispatchable Reserves.

  After a lengthy deliberation on Section 3.2.2, the RCC agreed on the following revised proposal:

  "The control of system frequency shall be the responsibility of the System Operator. The System Operator shall maintain the fundamental frequency

within the limits of 59.4Hz and 60.6Hz during normal conditions. However, the System Operator shall intervene when the frequency limits of 59.7Hz and 60.3Hz are breached. **For this purpose, the System Operator shall constrain-on or constrain-off, or make use of MRU, if all immediately ~~applicable~~ available Regulating Reserves, Contingency Reserves, and/or Dispatchable Reserves have been exhausted in order to normalize the frequency of the grid."**

For clarity, Dr. Guevara explained that the proposal means that, where t=time, at t=0, RR and CR are immediately available. By t=15, if DR was asked to run at t=0, then it should be able to run upon instruction by the System Operator. Mr. Rosales added that if DR fails to run in 15 minutes upon giving instructions at t=0, then the SO can already call an MRU.

- On 6.2.2.3, Mr. Rosales discussed that the proposal is about the single outage contingency criterion to address congestion.

- Dr. Guevara inquired from MO when the voluntary shedding of load takes place. Mr. Cacho responded that this procedure is already embedded in the participant demand bidding window in the market. He stated that in order to participate in the demand bidding, WESM Customers are required to register as demand bidding participant. Mr. Jose Santos noted the information, but inquired whether the ECs can be educated about this because the demand bidding that they know is more on the BCQ spot and is different from what is being explained by Mr. Cacho.

- Mr. Binondo clarified relative to the discussion that currently, the Grid Code does not specify any ancillary service type that supports the use of constrain-on and constrain-off and MRU for the contingency requirment of the Grid. He therefore opined that given the case, the proposal as presented by Mr. Rosales on the constrain-on and constrain-off of plants, and the use of MRU seem appropriate.

- Mr. Lagarde commented, from a Customer point of view, that the probability is high that the MRU plant is a diesel plant which is expensive. He therefore suggested that it would be cheaper to optimize first the coal plants, for instance, which have not yet reached their Pmax. Mr. Rosales acknowledged the comments and responded that in fact, these plants are still included in the plants that are being constrain-on, provided that these plants are also able to help solve the N-1 contingency problem. He explained that the usual problem is the low ramp rate of certain plants being constrained on to address the grid frequency and in cases that the grid frequency already goes down beyond the normal limits, the System Operator call an MRU plant to address the grid frequency requirement of the System. He cited that the System Operator is required under the WESM Rules to intervene when the grid security is already at risk.

- Noting the discussions and the explanation provided by Mr. Rosales, Mr. Pagobo suggested as follows for Section 6.2.2.3:

"The Security and Reliability of the Grid shall be based on the Single Outage Contingency criterion. This criterion specifies that the Grid shall continue to

operate in the Normal State following the loss of one Generating Unit, transmission line, or transformer. **However, the System Operator shall take the necessary actions whenever there's already a threat or an impending threat in system security as a result of non-compliance to single outage contingency criterion, through constrain-on/constrain-off of generating units or the use of MRUs if Contingency Reserves and/or Dispatchable Reserves are not applicable, to ensure the security and reliability of the grid."**

The RCC then agreed on the proposal as proposed by Mr. Pagobo.

- On Section 6.2.2.4, the RCC agreed to revise the proposal noting the changes to relevant sections in the earlier discussion. The revised RCC proposal would then read, as follows:

  "The Grid Frequency shall be controlled by the Frequency Regulating Reserve during normal conditions, and by the timely use of **Contingency Reserve as stipulated in Section 3.2.2.2. During emergency conditions, the System Operator shall implement demand control as a last resort in order to ensure the reliability and security of the grid.**"

- On Section 6.2.2.9, the RCC agreed to delete the term depleted noting that the RCC already previously agreed on the use of the term exhausted.

- On Section 6.3.1.3, the RCC agreed to retain the proposal as crafted by the MRU sub-committee.

- On Section 6.3.1.4, the RCC agreed on the following revised proposal as suggested by Dr. Guevara:

  The System Operator is responsible for ~~**controlling Grid Voltage Variations during emergency conditions through a combination of direct control and timely instructions to Generators and other Grid Users. ensuring**~~ **that the Grid Voltage is maintained within the normal limits at all times and shall take the necessary actions whenever the grid voltage of +/- 5% of the nominal voltage are breached and even during emergency conditions through a combination of direct control and timely use of MRUs as required by the System Operator.**

- On Section 6.3.3.4, the RCC agreed on the following revised proposal:

  The Generators **are** ~~is~~ responsible for immediately executing the **dispatch** instructions of the System Operator ~~**at all times during normal and**~~emergency ~~conditions~~ ~~**or whenever required to run as MRUs to address the power quality, reliability and security of the grid.**~~

- On Section 7.2.2.1, Mr. Raymundo commented that the MSU should be deleted in this Section, because based on the definition of the MSU earlier presented, the generator is already tagged as non-complying to the dispatch instruction of the System Operator. Mr. Rosales responded that the MSU is still based on the dispatch instruction. Mr. Castro clarified that it seems that

from the explanation of Mr. Rosales the plant that does not follow the normal dispatch instruction will then be called an MSU.

Mr. Raymundo explained that per DOE letter directives, the MSU pertains to "a non-complying generator to the dispatch instruction," and noted that a certain generator is being called to shut down due to the non-compliance of another generator. He stated that when the matter was discussed by the sub-committe, they agreed to change the definition and refer to the MSU as the non-complying generator.

Dr. Guevara commented that the definition of must-stop was already agreed upon by the RCC previously. She commented further that the new definition being proposed by the sub-committee deviates from the definition of must-stop as stated in the DOE letter directives. Dr. Guevara then inquired if the complying generator that was called to constrain-off will still be paid. Mr. Binondo responded that such plant will no longer be paid for the energy that was not delivered.

Ms. Carabuena reacted on the statement of Mr. Binondo, stating that in her recall based on the agreements during the sub-committee meeting, the causer's pay will still be applied in this case, where the non-complying generator will compensate the generator that was constrained off.

Mr. Cacho then stated that this will be defined in the Market Manual.

Dr. Guevara noted the explanations given. Following the discussion, the RCC agreed to revise the proposal to read as follows:

The System Operator shall be responsible for the issuance of Dispatch Instructions for all the Scheduled Generating Units and for all the Generating Units providing Ancillary Services, following the Dispatch Schedule prepared by the Market Operator. **However, the System Operator may schedule or issue dispatch instructions to generators to constrain-on, constrain-off, or may make use of MRUs with due consideration to reliability and security of the grid.**

- On Section 7.2.4.3, the RCC noted the same comments as in the previous Section and agreed on the revised proposal with the deletion of the MSU as the same will no longer be applicable. The revised proposal shall read as follows:

The Generator with a Scheduled Generating Unit shall be responsible for ensuring that all Dispatch Instructions from the System Operator are implemented **~~within the~~ in accordance with** the Dispatch **~~Schedule Tolerances~~ issued by the Market Operator. However, the Generator shall follow the dispatch instructions issued by the System Operator without delay whenever required to constrain-on/constrain-off or to function as MRUs to ensure the reliability and security of the grid.**

- On Section 7.3.2.4, the RCC agreed on the proposal as presented. Dr. Guevara, however, commented that having mentioned the Market Intervention in the provision, it would ba appropriate to also include in the

proposal the definition of Market Intervention in the PGC. The RCC then agreed to define the market intervention in the PGC as suggested by Dr. Guevara.

- On Section 7.3.3.3, Dr. Guevara noted that real time snapshots is not defined under the PGC, and thus, suggested to write the term in small letters. She also suggested to use the generic term transmission lines instead of sub-transmission lines under item b. The revised proposal then shall read as follows:

  The System Operator shall ensure that the following information shall be provided to the Market Operator to come up with a security constrained economic dispatch schedule prior to the implementation of the dispatch schedules:

  a. **~~Status of the~~ Real time snapshots to determine the status of the Generating Units,** transmission lines and substation facilities
  b. Planned and forced outages **of Generating units, transmission lines, and otherequipment**
  c. **Ancillary Services based on** Reserve requirements and **its** allocations
  d. **Imposition of** security constraints **~~and contingency~~**
  e. **List of contingencies for single outage contingency**

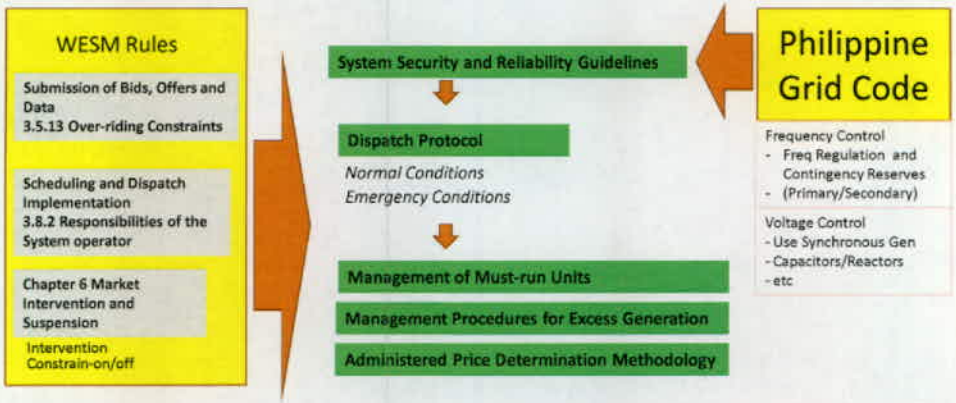
- On Section 7.3.3.5, the RCC agreed to retain the proposal as crafted by the sub-committee.

The RCC thanked the sub-committe and Mr. Rosales for the presentation of the proposed amendments to the PGC. After which, the floor was given to Mr. Cacho for his presentation of the proposed amendments to the WESM Rules and the Manual.

- **Proposed Amdments to the WESM Rules and Manual**

Mr. Cacho presented an overview of the proposed amendments to the WESM Rules and the MRU Manual, following the proposal crafted by the sub-committee on the amendments to the PGC. Below are the highlights of presentation made by Mr. Cacho.

PGC, Rules and Manual Review



4

Guiding Principles

- MRU is to address System Security and Reliability
- MRU to be used after A/S or Reserves are exhausted/depleted
- MRU mechanism is not really for Commissioning/Testing of Plants
- Fuel/energy cost of plant commissioning/testing is part of plant commissioning/testing cost
- MRU is different from MOT Redispatch (Constrained-on/off)
  - MRU from Offline
  - Constrained on/off – synchronized to the grid
- MRU/Constrained-on needs compensation due to additional energy provided
- Constrained-off generator due to another generators not complying with schedule should be compensated by the non-complying generator

5

Proposed Rules Changes

- Over-riding Constraints
- Scheduling and Dispatch Implementation
- Market Intervention and Suspension

See Document Template for Details

15

Proposed Manual Changes

- Dispatch Protocol
- Management of MRU
- Management of Excess Generation
- Administered Price Determination Methodology

See Document Template for Details

16

Following are the discussions that followed the presentation of Mr. Cacho:

- Dr. Guevara emphasized based on the previous discussion that MSU will be the non-complying generator who compensates the generator that was constrained off due to its non-compliance.
- Mr. Lagarde shared that the result of excess generation would be a decrease in price. He expressed that due to the MSU, it seems that the System

Operator is limiting the generation pool. Ms. Lorreto Hilario-Rivera added that the issue is that the generators are compensating each other but there is no one compensating the Customers to a lower rate. Dr. Guevara opined that probably, what can be proposed is for the MSU to compensate the the consumers, in the form of penalty to the MSU.

- On the Regulatory Requirements as consideration to the PGC changes, Dr. Guevara noted that the generators who are increasing their Pmax should be exempted from such, as previously agreed by the RCC that these generators should be paid.
- Mr. Binondo commented that the new proposal effectively removes the local calamities and emergencies, because when such occurs, either the Market Operator or the System Operator can already declare a Market Intervention, which would result in administered price. Dr. Guevara concurred with the statement of Mr. Binondo.

After the presentation made, Dr. Guevara thanked the members of the MRU sub-committee. The RCC agreed to defer the discussion of the details of the proposed amendments to the WESM Rules and relevant Market Manuals relative to the MRU proposal.

Dr. Guevara requested the sub-committee to present the proposal in the RCC prescribed format for proposed amendments, with inclusion of the discussion paper on the same. Atty. De Castro then volunteered to prepare the discussion paper for the MRU proposal. Mr. Cacho likewise expressed that based on the discussion on the matter, there will major changes on the previous RCC proposal on the WESM Rules and the Manual changes. He then volunteered to re-draft the proposals as discussed.

On a final note, Dr. Guevara stated that the focus of the RCC discussion in the next meeting would be the proposed amendments to the WESM Rules and Manuals relative to the MRU.

- **Proposed Amendments to WESM Rules in relation to Implementation of MO of Business Continuity Plan (BCP) and Disaster Recovery**

Chairperson Guevara noted that the proposal was presented by Atty. Caryl Lopez-Mateo in the previous RCC meeting. The Secretariat mentioned that the same was posted on the WESM public website as approved by the RCC, and the deadline for comments is set on September 11. The Secretariat mentioned that no comments have so far been received relative to the proposal.

On this note, the RCC approved the Resolution approving the proposed amendments and endorsing the same to the PEMC Board, subject to any additional comments which may be received by the September 11 deadline.

- **Updates on the RCC Work Plan**

Mr. Cacho reported the updates on the RCC Work Plan based on the revised timelines submitted by PEMC. Mr. Cacho noted that some of the items falling under the same topic were merged.

The RCC noted the updates provided with appreciation.

On the item on demand bidding, assigned to the EC sector, Dr. Guevara requested the said sector to write a formal letter addressed to PEMC President Melinda L. Ocampo, requesting for PEMC to provide/conduct a training for ECs on the matter, if the same is needed for them to better understand demand bidding to be able come up with proposed amendments on the matter.

On this note, Dr. Guevara stated that for the rest of 2013, there are four more items for deliberation of the RCC, as follows: Net Settlement Surplus, Metering Manual, Methodology for Determining Pricing Errors, and the Forecasting Manual.

4. New Business

- **PEM Board Updates**

Atty. De Castro reported that during the BRC and PEMC Board Meetings, she presented only the proposal on reasonable estimate as the other one for Prudential Requirement was withdrawn considering that comments were received from SNAP. She stated that the proposal on reasonable estimate was approved by the Board as presented.

5. Next Meeting

The RCC members were reminded of the dates of succeeding meetings, as follows:

- 02 October 2013, 9AM
- 06 November 2013, 9AM
- 04 December 2013, 9AM

6. Adjournment

There being no other matter to be discussed, the meeting was adjourned at around 2:48 PM.

Prepared By:	Reviewed By:	Noted By:
Romellen C. Salazar	**Geraldine A. Rodriguez**	**Elaine D. Gonzales**
Analyst *– Market Governance Administration Unit* ***Market Assessment Group***	***Assistant Manager*** *– Market Governance Administration Unit* ***Market Assessment Group***	***Manager*** *– Market Data and Analysis Division* ***Market Assessment Group***

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	**Lorteto H. Rivera** Supply Sector Team 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)	

Attachments:

i. **Result of Additional Simulations on PEN**

Wholesale Electricity Spot Market

Price Substitution Methodologies for Local PEN

September 2013

Local PEN Price Substitution Methodology

- The initial proposal for the Local PEN Price Substitution was based on the weighted significance of five (5) nearest nodes
- The five nearest nodes, and its corresponding significance, shall be based on the Transmission Loss Factors

Rationale for the basis of using TLF

- The criteria for determining the nearest nodes is based on the inverse of the TLF given the formulation of the Locational Marginal Price (LMP)
- Barring the cost of congestion, prices differ from each other based on the cost of losses

$$LMP_i = \lambda + \lambda \cdot \left(\frac{1}{TLF_i} - 1 \right) + \sum \left(\mu_{i,j} \cdot a_{i,j} \right)$$

$$LMP_i = \frac{\lambda}{TLF_i} + \left(\mu_{i,j} \cdot a_{i,j} \right) \quad \text{Upon simplification}$$

$$LMP_i = \frac{\lambda}{TLF_i} \quad \text{Ignoring the cost of congestion}$$

Wholesale Electricity Spot Market

3

Why select only "5" for the nearest nodes?

- This was arbitrarily set by the RCC
- However, selecting less (4 or less) or more (6 or more) nodes is not largely significant since the price substitution would have to depend on the weighted significance of the LMP
- The percentage weight shall be based on the concept that a node with the closest proximity to the affected node, based on TLF, shall have a greater significance to that affected node

$$\%Weight_i = \frac{\dfrac{1}{ABS\left(\dfrac{1}{TLF_i} - \dfrac{1}{TLF_A} \right)}}{\sum_{i=1}^{5} \left[\dfrac{1}{ABS\left(\dfrac{1}{TLF_i} - \dfrac{1}{TLF_A} \right)} \right]} \qquad \%Weight_i = \frac{\dfrac{1}{Diff_{i,A}}}{\sum_{i=1}^{5} \left[\dfrac{1}{Diff_{i,A}} \right]}$$

Wholesale Electricity Spot Market

4

Weighted Significance Sample

Nearest Nodes

10 Nearest Nodes			
RESOURCE_ID	TLF	Weighted Significance	Nodal Price
3MAKBA_T3L1	0.9660	23.1%	30,861.76
1SNJOS_T1L1	0.9661	17.3%	30,858.86
3MKBNB_SS	0.9662	13.8%	30,854.64
3MKBNC_SS	0.9663	11.5%	30,852.69
1MALOL_T1L1	0.9664	9.9%	30,848.19
3BINAN_T1L1	0.9665	8.7%	30,847.36
3STROS_T1L1	0.9668	6.3%	30,835.14
1BNTAY_T1L1	0.9673	4.3%	30,820.61
1T_ASI_T3L1	0.9680	3.0%	30,797.49
1EHVSJ_SS	0.9690	2.1%	30,767.61
		Price Substituted	30,849.27

5 Nearest Nodes			
RESOURCE_ID	TLF	Weighted Significance	Nodal Price
3MAKBA_T3L1	0.9660	30.5%	30,861.76
1SNJOS_T1L1	0.9661	22.9%	30,858.86
3MKBNB_SS	0.9662	18.3%	30,854.64
3MKBNC_SS	0.9663	15.3%	30,852.69
1MALOL_T1L1	0.9664	13.1%	30,848.19
		Price Substituted	30,856.64

Zapote Computed Price	Based on 10 Nodes	Based on 5 Nodes
30,871.76	30,849.27	30,856.64

Wholesale Electricity Spot Market

5

Other Methodologies

- The RCC requested that other methodologies be explored
  - Nearest nodes based on locational distance
  - Nearest nodes based on translated TLFs
- Such methodologies shall be tested for its accuracy in comparison with the Price Substitution using the Nearest nodes based on Original TLF
- Only the "5" nearest nodes will be selected for each methodology

Wholesale Electricity Spot Market

6

Sample Period with Local PEN

- Last 14 August 2013, a Contingency CVC manifested at 1400H at the Zapote substation

Original Price, PhP/MWh	RTD Re-Run w/o Contingency, PhP/MWh
942,856.50	17,476.45

Wholesale Electricity Spot Market

7

Nearest Nodes

Original Proposal

Zapote TLF
0.9672

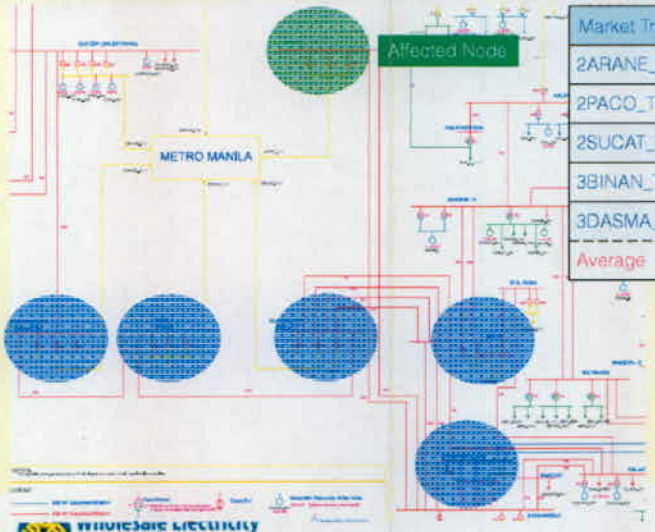
Market Trading Node	Price	TLF	Weighted Significance	D = C x A
	A	B	C	
3MAKBA_T3L1	17,473.02	0.9674	0.350530	6124.81
1ANGAT_SS	17,471.17	0.9675	0.233711	4083.20
3MKBNB_SS	17,469.28	0.9676	0.175301	3062.38
3MKBNC_SS	17,468.21	0.9677	0.140255	2450.01
3MKBND_SS	17,464.08	0.9679	0.100203	1749.95
		Sum	1.000000	17,470.36

Wholesale Electricity Spot Market

8

Nearest Nodes

Locational Distance (Physically near Zapote)



Market Trading Node	Price, PhP/MWh
2ARANE_T1L1	17,809.87
2PACO_T1L1	17,815.87
2SUCAT_T1L1	17,557.68
3BINAN_T1L1	17,458.76
3DASMA_T1L1	17,373.47
Average	17,603.13

Wholesale Electricity Spot Market

9

Nearest Nodes

Translated TLF (Reference Bus at Affected Node – Zapote)

Zapote TLF
0.9672

Market Trading Node	Price	Original TLF	Translated TLF	Weighted Significance	D = C x A
	A	B	B / (Zapote TLF)	C	
3MAKBA_T3L1	17,473.02	0.9674	1.000207	0.350530	6,124.81
1ANGAT_SS	17,471.17	0.9675	1.000310	0.233711	4,083.20
3MKBNB_SS	17,469.28	0.9676	1.000414	0.175301	3,062.38
3MKBNC_SS	17,468.21	0.9677	1.000517	0.140255	2,450.01
3MKBND_SS	17,464.08	0.9679	1.000724	0.100203	1,749.96
			Sum	1.000000	17,470.36

Wholesale Electricity Spot Market

10

Summary of Results (5 Nearest Nodes)

Original Price, PhP/MWh	RTD Re-Run w/o Contingency, PhP/MWh
942,856.50	17,476.45

Methodology	Price Substitute	Accuracy, %
Based on Original Proposal	17,470.36	0.03%
Based on Location	17,603.13	0.72%
Based on Translated TLF	17,470.36	0.03%

Wholesale Electricity Spot Market

11

Observations

- Based on Location
  - Less accurate since it does not reflect WESM's pricing methodology
    - In the WESM, losses are not a function of nearness in location, rather it is a function of the contribution of a certain node to the overall system loss
    - TLFs are dynamic, and should not be based on location
  - It is more tedious to determine the nearest nodes based on location, hampering the intention to automate such a functionality
- Based on Translated TLF
  - There is no difference between the initial methodology of using an original TLF since it shall still determine the same set of nearest nodes

Wholesale Electricity Spot Market

12

End of Presentation