



Market Surveillance Committee 2022 Annual Report

January to December 2022

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This Report is prepared by the
Philippine Electricity Market Corporation –
Market Assessment Group for the
Market Surveillance Committee

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I. INTRODUCTION

The Market Surveillance Committee (MSC) submits this 2022 Annual Report which outlines the accomplishments of the Committee and the activities it has undertaken for the period of January to December 2022. The Annex A of the Report provides the MSC's planned activities for the year 2023.

Pursuant to its mandate under Section 1.6.2 of the WESM Rules and Section 3.1 of the Market Surveillance Manual, the MSC carried out its functions and responsibilities throughout the year amidst the threats brought about by the continued effect of the Corona Virus Pandemic in the country which started since March 2020.

Accordingly, the MSC, with the PEMC – Market Assessment Group (MAG) as its primary support unit, accomplished during the year its monitoring and analysis of trading participants' activities and market outcomes. To perform said functions, the MSC conducted a total of fourteen (14) meetings¹ for the year 2022, thirteen of which were conducted via online platforms following the National Government's implementation of restrictions due to COVID-19 Pandemic, while the remaining one meeting was held physically at the PEMC office. The MSC has likewise communicated through email and other online platforms, to deliberate on various market issues and topics.

In summary, the MSC accomplished the following activities through the assistance of MAG:

	Activities
Monitor activities conducted by WESM Participants through submission of special / ad hoc reports and market studies	<ul style="list-style-type: none"> ○ Generator Outage Modelling Study ○ Financial Transmission Rights Study ○ Study on the Frequent Imposition of Secondary Price Cap
Preparation of periodic reports	<ul style="list-style-type: none"> ○ Market Assessment Reports (monthly and annual) ○ Over-riding Constraints Reports (monthly and annual) ○ Retail Market Assessment Reports (quarterly and annual) ○ Market Intervention / Suspension Reports
Analysis of Unusual Market Outcomes	<ul style="list-style-type: none"> ○ Interesting Pricing Events Reports ○ Notable Market Outcome Reports ○ Investigation activities related to Generator Behavior
Review/Propose amendments to the WESM Rules / Manuals	<ul style="list-style-type: none"> ○ Review of Proposed Amendments to WESM Penalty Manual and Registration, Suspension and De-Registration Criteria and Procedures for the Inclusion of Proposed Penalty and Sanctions for the Violation / Breach during the Expired Testing and Commissioning Status of Plants ○ Review of Proposed Amendments to WESM Dispatch Protocol Manual on Maximum Available Capacity ○ Review of Proposed Amendments to the WESM Rules and related Market Manuals on the Market Intervention/Suspension Procedures
Coordination meetings with other Agencies & Entities	<ul style="list-style-type: none"> ○ National Grid Corporation of the Philippines (NGCP) and Independent Electricity Market Operator of the Philippines (IEMOP) on Market Intervention Events

¹ The MSC completed a total of twelve (12) Regular Meetings and two (2) Special Meetings during the year 2022.

	Activities
	<ul style="list-style-type: none"> ○ IEMOP, Technical Committee (TC), and PEMC-Information Systems and Technology Department (PEMC-ISTD) on Software-related failures encountered by the MMS ○ IEMOP, NGCP, and Department of Energy (DOE) on Power Situation Outlook for 2022 ○ NGCP on Plans for the Restoration / Repair of Bohol Transmission Lines & NGCP Yellow and Red Alert Notices in June and September 2022 ○ IEMOP on Implementation of Green Energy Option Program (GEOP) in the WESM & Overview of WESM Mindanao's Operations and Implementation ○ PEMC-Corporate Planning and Communications (PEMC-CPC) on Orientation on Renewable Energy Market (REM) ○ Generator Company on Forced Outages last June and July 2022
Other Activities	<ul style="list-style-type: none"> ○ Participation to Annual General Membership Meeting ○ Participation to Participants' Townhall Meeting ○ Discussion on Various Department Circulars and ERC Resolutions ○ Participation in MSC Strategic Planning Workshop for 2023-2025 Activities

II. ACTIVITIES ON MARKET MONITORING AND ASSESSMENT

2.1. Assessment of Market Outcomes in the Wholesale Electricity Spot Market

2.1.1. Review of Market Assessment Reports

Market Assessment Reports (MARs) are prepared pursuant to the Committee's mandate of monitoring and assessing the efficiency and competitiveness of the WESM under different timescales and market conditions. The MARs provide an assessment of market behavior and the analysis of market monitoring indices, which are based on the monitoring data regularly collected and validated primarily from the Market Operator (MO) and the System Operator (SO).

In accordance with Section 3.1 of Market Surveillance Manual, the MSC submitted the following MARs:

- a) Ten (10) Monthly Monitoring Reports, comprised of the MSC's Monthly Accomplishment Report, and the Monthly Market Assessment Report (MMAR), covering the billing months of July 2021 to April 2022²; and
- b) Annual Market Assessment Report covering the period 26 November 2021 to 25 November 2022.

Highlights of the Monthly MARs were regularly presented by the MSC during the monthly PEM Board Meetings covering December 2021 to November 2022 billing periods. MARs are likewise regularly furnished to the Department of Energy (DOE) and Energy Regulatory Commission (ERC) for information and reference, and accordingly published in the PEMC website³. The highlights of notable events in 2022 were as follows:

Billing Month	Highlights
December 2021	<ul style="list-style-type: none"> Damaged Transmission Lines in Visayas region due to typhoon Odette Significant increase in the frequency of imposition of Secondary Price Cap (SPC) Significant increase of Administered Price Impositions in the Visayas region as a result of Market Suspension
January 2022	<ul style="list-style-type: none"> ERC lifts WESM suspension in the Visayas Grid, excluding Bohol, on 17 Jan 2022 Power plant outages contributed in WESM price increase in January 2022
February 2022	<ul style="list-style-type: none"> ERC lifts spot market suspension for Bohol on 10 Feb 2022
March 2022	<ul style="list-style-type: none"> Luzon and Visayas hit power peak demand at 13,749MW for 23 Mar 2022 Luzon Grid placed under yellow alert due to forced outages

² MARs are prepared upon availability of the processed and revalidated data which are still affected by the data and procedural concerns encountered by PEMC and IEMOP with the commencement of EWDO.

³ Link: <https://www.wesm.ph/market-outcomes/market-assessment-reports>

Billing Month	Highlights
	<ul style="list-style-type: none"> Average price increased with the observance of dry season
April 2022	<ul style="list-style-type: none"> Isolation of Bohol from Visayas Grid due to Typhoon Agaton <ul style="list-style-type: none"> Bohol reconnected to grid after partial restoration of Ormoc-Maasin line. Increased Outage Capacity attributable to dry season and damaged transmission lines
May 2022	<ul style="list-style-type: none"> Luzon and Visayas combined peak demand in May at 14,380MW <ul style="list-style-type: none"> Surpassing the all-time power peak demand of 13,749MW recorded on 23 March 2022 Significantly higher by 5.27% from last year's 13,660MW Supply levels increased with the resumption in operation of Coal and Geothermal power plants <ul style="list-style-type: none"> Energy task force election played significant role in the resulting ample level of supply
June 2022	<ul style="list-style-type: none"> Imposition of Red and Yellow alert level due to depleted supply margin Significant increase in the imposition of SPC because of narrow supply margin brought about by high outage capacity due to tripping of Hermosa-BCCPP 230KV line. System Demand level increased further despite the observance of Rainy Season
July 2022	<ul style="list-style-type: none"> Massive power brownouts hits Negros-Panay Sub Grid due to damaged submarine cables Level of imposition of secondary price cap remains high because of narrow supply margin brought about by high outage capacity. Power plants operated normally despite the 7.0 magnitude earthquake incident
August 2022	<ul style="list-style-type: none"> System Demand declined with the observance of the Rainy season. Outage capacities decreased by an average of 9 percent. Generally normal pricing condition was observed in August 2022.
September 2022	<ul style="list-style-type: none"> Luzon Grid was placed under Red and Yellow alert level due to outages of transmission lines and power plants. <ul style="list-style-type: none"> Affected by Bolo-Nagsaag 500KV transmission line outages are (647 MW Sual plant's Unit 1 and 2, 344 MW Masinloc power plant Unit 2, and the 335 MW Masinloc 3) Forced outages not affected by transmission outages are (668- (MW) GNPowr Dinginin coal-fired power plant, 300-MW Calaca coal-fired power plant unit 2, and the 460 MW Quezon power plant. Unusual pricing condition persisted. Luzon Transmission Lines were down after the onslaught of typhoon Karding.
October 2022	<ul style="list-style-type: none"> NGCP restored the damaged 138KV Amlan-Samboan submarine line in Visayas.

Billing Month	Highlights
	<ul style="list-style-type: none"> 7 Ilocos Norte towns experienced black out due to the onslaught of typhoon Neneng.
November 2022	<ul style="list-style-type: none"> Spot market prices decreased driven by relatively lower demand. During the onslaught of typhoon Paeng, various transmission lines went on outage and subsequently affected several power plants

With the commencement of the Enhanced WESM Design and Operations (EWDO) last 26 June 2021, the Committee has experienced various data and procedural concerns which lasted until October 2022 and further affected 2022 reports. To address the identified concerns and additional issues reported, MAG conducted a series of coordination meetings with the MO, the SO, and other concerned entities. The series of meetings led to reprocessing and revalidation procedure which resulted in a more efficient and faster availability of data for utilization in the reports.

2.1.2. Review of Over-riding Constraints

2.1.2.1. Review of Monthly Monitoring Report on Over-riding Constraints

In accordance with Section 5.5 of the Market Surveillance Manual, the MSC monitored the over-riding constraints imposed by the National Grid Corporation of the Philippines – SO (NGCP-SO) on generators⁴.

For the year in review, the MSC deliberated upon Monthly Monitoring Reports on Over-riding Constraints covering the billing months 26 November 2021 to 25 November 2022.

In summary, majority of the imposition of over-riding events were categorized as non-security limit events. Similar with the 1-hour market, the impositions noted for the year were mainly due to the conduct of testing and commissioning (T&C). The month-on-month comparison of the number of over-riding events imposed per generator resource type is shown below:

	Dec 2021	Jan 2022	Feb 2022	Mar 2022	Apr 2022	May 2022	Jun 2022	Jul 2022	Aug 2022	Sep 2022	Oct 2022	Nov 2022
No. of Over-riding Constraints	19,961	24,511	45,668	33,706	30,055	25,234	32,948	24,395	46,164	20,462	24,581	19,787
Battery Energy Storage System	10,247	6,382	21,342	17,786	15,811	4,451	12,359	1,505	1,678	885	3,924	4,470
Biomass	3,592	5,016	11,808	5,563	812	-	-	240	24	24	36	-
Coal	1,638	-	1,017	1,825	2,216	9,030	4,912	2,900	8,382	1,897	2,344	2,620
Geothermal	-	-	-	208	132	-	-	-	-	48	108	-
Hydro	1,207	1,744	3,153	1,674	1,769	1,696	457	2,521	11,297	5,855	6,247	1,493
Natural Gas	191	576	565	83	12	3,614	779	2,160	287	12	12	36
Oil-based	467	864	1,099	2,916	1,017	60	1,902	1,029	7,838	933	920	1,320
Solar	2,619	1,152	6,684	3,651	8,286	6,383	12,539	14,040	16,658	10,808	10,990	9,848
Wind	-	-	-	-	-	-	-	-	-	-	-	-

⁴ The monitoring of the over-riding constraints on generators is done on a per generator trading node per trading interval. A constraint imposed on a generator trading node on a particular trading interval is considered as one (1) **over-riding event**. The monitoring of the over-riding constraints is based on the data and information provided by MO (i.e., real time market results and MMS-input files on security limits) and SO (i.e., SO Data for Market Monitoring).

Table 1 | Summary of Over-riding Events – December 2021 to November 2022**2.1.2.2. Review of Annual Monitoring Report on Over-riding Constraints**

In 2022, the MSC reviewed the result of the highlights of the Annual Report in the Monitoring of Over-Riding Constraints for the billing year 2021. The annual report was divided into two sections: pre-EWDO (1 hour market) and during the implementation of the EWDO (5-minute market) regime, in compliance with the WESM Rules and Market Manuals.

Similar with the previous years, T&C was observed to be the main reason for the imposition of over-riding constraints across the billing months of 2021. The promulgation of DOE DC2021-06-0013 is focused in alleviating the occurrence of prolonged T&C or those which exceeds the two (2) month-allowable period to undertake T&C as prescribed under the ERC Resolution No. 16, series of 2014.

Pre-Enhanced WESM Design Operation (Pre-EWDO)

- An increase of 10.42% was noted during the pre-EWDO compared to the similar covered period for the previous year, with a slight decrease in over-riding constraint impositions noted during the second quarter of the year due to the start of commercial operations of plants which were previously under T&C.
- Overall, biomass facilities had the highest impositions of T&C during the pre-EWDO, accounting for more than half of the total T&C impositions, followed by solar plants.
- It may be noted that the capacities with OC impositions may have aided in the reduction of actual cost for generation distorting market prices, effectively affecting the market's ability to sustain itself in the long run.

Enhanced WESM Design Operation (EWDO)

- It was observed that the decrease in impositions from September to December may highly be attributed to: 1) the implementation of DOE DC2021-06-0013 in July, which adopts a new general framework governing plants under T&C, and 2) the significant days of market suspension in December 2021 up to January 2022 due to Typhoon Odette.
- In terms of impositions for plants under T&C, biomass and solar plants accounted for 68.41% of the total impositions during the beginning of the EWDO period in 2021. The remaining impositions were shared by battery, coal, hydro, and oil-based facilities.

The Annual Monitoring Report on Over-Riding Constraints was submitted to the PEM Board, DOE, and ERC, for the information.

2.1.3. Review of Market Trigger and Interesting Pricing Events

2.1.3.1. Interesting Pricing Events Reports

Consistent with the MSC-approved seasonality thresholds for supply margin-price indices⁵, the MSC reviewed Interesting Pricing Events (IPEs) that were observed during the year. The thresholds in determining the presence of IPEs were determined based on the level of supply margin and the prevailing prices, considering the seasons used in monitoring the market performance (e.g. Cool-dry, Hot-dry, and Rainy).

The MSC reviewed and deliberated the IPE report for the period of 29 December 2019 to 25 June 2021. Some of the notable observations and recommendations were as follows:

- Frequent IPEs mostly occurred when the supply margin is extremely low.
 - Review of the offer price cap as it may no longer serve its purpose as a signal of unusual market conditions but rather a recurring offer strategy for generators.
- Outages were key factor in the resulting increase in prices due to the depletion in supply, especially when large-capacity plants are involved.
 - Plant type and offer behavior of plants are further reviewed and analyzed as these affect the marginal plants and resulting generation mix from the remaining capacities.
- Changes in offer behavior are permitted but may still require valid explanation especially if done during these intervals which are considered unusual.
- Six (6) units exhibited bid splitting behavior.
- There is a need for an anti-competitive behavior (ACB) monitoring framework to put focus on certain detected behaviors or when thresholds are violated during these periods of possible existence of high market power.

2.1.3.2. Market Trigger Reports or Notable Market Outcome Reports

The MSC was regularly informed on the summary of facts and observations on the market triggers noted for the covered period. The monitoring of market triggers is pursuant to the mandate provided under the Section 3.1 of the Catalogue of Market Triggers. The thresholds used for the monitoring were likewise reviewed and revised by the Committee to update the price references / thresholds using the most recent data⁶. The highlights of the reports are as follows:

⁵ Updated by the MSC in Q1 2022

⁶ MSC Resolution No. 2022-01 dated 17 March 2022. *Approval of the Seasonality Thresholds for the Spot Price Indices on Market Monitoring Triggers and Interesting Pricing Events.*

Billing Period	No. of MTR	Hour Type	No. of Price Spikes	Highlights
March 2022	11	Peak	131	<ul style="list-style-type: none"> • Growing level of demand due to lower quarantine restrictions and increase in temperature • High level of outage • Narrow supply margin • Presence of pivotal suppliers
		Off Peak	45	
July 2022		Peak	194	<ul style="list-style-type: none"> • 22 out of 30 days observation had price spike events • Mostly occurred on Mondays • 1,899 intervals with secondary price cap
		Off Peak	143	
August 2022		Peak	62	<ul style="list-style-type: none"> • 21 out of 31 days observation had price spike events • Mostly occurred on Thursdays • 294 intervals with secondary price cap
		Off Peak	52	
September 2022		Peak	311	<ul style="list-style-type: none"> • 30 days out the 31-day observation had price spike events • Mostly occurred on Sundays • 3,365 intervals imposed with secondary price cap
		Off Peak	240	
October 2022		Peak	360	<ul style="list-style-type: none"> • 24 out of a 30-day observation had price spike events • Mostly occurred on Mondays • 2,577 intervals imposed with secondary price cap
		Off Peak	95	
November 2022		Peak	183	<ul style="list-style-type: none"> • 25 out of a 31-day observation had price spike events • Mostly occurred during Thursdays and Fridays • 1,820 intervals imposed with secondary price cap
		Off Peak	80	

2.1.4. Review of Market Intervention and Suspension Events

Pursuant to its mandate under the WESM Rules, the Market Surveillance Manual, and the PEM Board Resolution No. 2011-62, to review market intervention (MI) and market suspension (MS) events, the MSC undertook review activities for events declared during the covered period and subsequently prepared its Review Reports on the SO and MO-initiated MI events and the MS event for the covered period.

Following its thorough review, the MSC submitted a total of sixteen (16) MSC Review Reports, for review and approval of the PEM Board. The recorded MI events were mainly due to the following reasons:

Classification	Reasons
Force Majeure	<ul style="list-style-type: none"> • Natural Calamities (i.e., Typhoon Odette) • Software Failures <ul style="list-style-type: none"> ○ Failure in publication of market results in the ORACLE Database server used by Market Participants to download Market Prices and Schedules in Real-Time ○ Issue on Network Connectivity ○ Error in Market Participant Interface (MPI) data transfer ○ Database error ○ Non-responsive database ○ Workflow Controller execution error ○ Incomplete generation offers transferred from MPI to RTD ○ Data transfer error for load forecasting • Defective Disk Controller • Infeasible RTD solution • Power Flow Divergence • Unavailability of communication links
Business Continuity Plan Simulation / Disaster Recovery Procedure Simulation	<ul style="list-style-type: none"> • Switched over from Main site to Back-up site • Conduct of Disaster Recovery Procedure (DRP)
Emergency / Threat to System Security	<ul style="list-style-type: none"> • Manual load dropping due to generation deficiency • Partial System Blackout • Multiple generator outages and line tripping • Overloading of Negros-Cebu submarine cable 2 due to generation deficiency in Negros-Panay Sub Grid • High load capacity experienced in Samboan-Amlan 138kV Transmission Line 2

Aside from the aforementioned MI events, the MSC likewise reviewed and discussed the facts and summary of assessment conducted by MAG on the MS events which occurred from 16 December 2021 to 17 January 2022, with the Bohol Island continued to be under suspension until 10 February 2022, based on the respective submissions of the MO and SO. The said event was mainly due to multiple tripping of generators and transmission lines during the onslaught of Typhoon Odette.

In view of the market system-related MI events, the MSC inquired with MO as regards the steps undertaken or to be undertaken to mitigate the occurrence of issues which lead to the occurrence

of the event. The Committee then agreed to invite the representatives from the IEMOP-MO, TC, and the PEMC-ISTD for a meeting in June 2022⁷.

In addition, the MSC agreed that the submission of reports by the MO and SO should be within 5 days from the resumption of the market, which should not be included in the 30-working day timeline allowed by the MSM for the MSC to submit its review report to the PEM Board. Setting the timetable for submission will mitigate the delay in the Committee's review report to the PEM Board. For better monitoring, the MSC further agreed to write a letter to the MO and SO requesting for regular updates on their action plans and recommendations relative to the previous MI events. In general, majority of the action plans and recommendations were completed with some of the issues to be addressed by the completion of projects included in the Transmission Development Plan.

The MSC review reports were submitted to the PEM Board and presented during its regular monthly meetings, for approval.

2.1.5. Discussion on the Request for Study on the Frequent Imposition of Secondary Price Cap

In the 1st half of 2022, the MSC received a directive from the DOE to conduct a study on the frequent imposition of the Secondary Price Cap (SPC) in the WESM in conjunction with the possible effects to the market of shorter trigger period for the SPC imposition from 5 days⁸ to 3 days⁹. The said DOE request is in light of the observations of the frequent SPC imposition in the market upon transition of the WESM from 1-hour to 5-minute dispatch.

Apart from the DOE's request above, the said study likewise reviewed the trading participants' offer pattern in light of the continuing imposition of the SPC recently promulgated by the Energy Regulatory Commission (ERC) and provided recommendations on whether the current SPC needs to be revised in light of its potential impact to the selling market participants and to the decision-making of investors in power generation sector.

Upon deliberation of the body, the Committee identified the prevailing factors which affect the frequent imposition of SPC since the commencement of the EWDO and the implementation of the new SPC parameters. The result of the study was submitted by the MSC to the DOE on 04 March 2022, for consideration, and provided to the ERC on 02 May 2022, for information.

⁷ See Section 3.2 of this 2022 Annual Report for the result of the discussion.

⁸ ERC Resolution No. 04, Series of 2014

⁹ ERC Resolution No. 07, Series of 2021

2.1.6. Discussion on the Ways Forward for the Annual Review of Market Trigger and Supply Margin Price Index Thresholds

As part of its continuing efforts to ensure that the thresholds used in its monitoring are still updated and reliable, the MSC conducted an annual review of the market trigger and supply margin price index as prepared by MAG, in view the latter's responsibility under the PEMC internal business procedures.

In view of this, the Committee deliberated on the simulation using the 1-hour and 5-minute WESM data to derive the proposed thresholds for the price spike, sustained high price, and supply margin price index. The MSC has noted the methodology used in deriving the updated thresholds, as well as provided guidance on some clarificatory matters in the data.

After due deliberation, the MSC approved MAG's recommendation to update the thresholds and for the deliberation to be formally documented through a Resolution signed by the MSC members. The approved thresholds were submitted to the DOE and ERC on 30 March 2023, for information and reference.

2.1.7. Review of Generator Outage Modelling Study

As part of its initiatives for the year 2022, the MSC reviewed and discussed the results of the Generator Outage Modeling Study (GOMS) conducted by the MAG. The said study aims to identify the variables which are possibly correlated with the occurrence of Forced Outages (FOs) in the market.

Over the years, FOs have gathered much monitoring interest as this type of outage drastically affects market outcomes that redounds to WESM participants, and eventually to the paying public. Highlights of the analysis are as follows:

- Specific statistical methodologies were employed to determine the effects, if any, of several variables on the occurrence of an FO, such as the timeliness of prior planned outages and the characteristics of the power plants.
- For the period covered from January 2018 to November 2021, 50 percent of all the registered generators may go into FO within a period of 83 days (about 3 months) after the completion of their respective maintenance or planned outage. This is notably a short period compared to other jurisdictions which has roughly 260 days prior to occurrence of an FO considering the same percentage of generators.
- From among the host of explanatory variables considered, the following relationships yielded the most statistically significant:
 - Contrary to expectation, a timely conduct of maintenance or planned outage posed a higher risk of occurrence of a forced outage afterwards

- Assigning the battery generators as the baseline power plant, it is found that among all resource types, hydro and oil-based plants are the most resilient from the likelihood of an FO event.
 - On the other hand, the model provides for an interesting inverse relationship between how volatile the dispatch of a generator is and the probability of going into FO.
- Possible future improvements in the statistical model employed in the study may be considered.

The MSC then provided its comments and suggestions for consideration in the study prior to finalization. The study was duly submitted to both the DOE and ERC on 27 April 2022 for consideration and possible further discussion.

2.1.8. Review of Financial Transmission Rights Study

For the year 2022, the MSC completed its study on the Viability of Financial Transmission Rights' (FTRs) operations in the WESM, which aimed to discuss the concept of FTR by looking at the current capability of the WESM to accommodate such enhancement, and by undertaking a survey on similar mechanisms in other jurisdictions to determine the viability of its introduction to the Philippines.

In line with this, MAG conducted series of coordination meetings with the representatives from the MO and the SO to seek for their comments and inputs on the initial assessment and observations undertaken by the MSC, as well as to request necessary data to complete the study. With the result of the coordination meetings, the MSC was able to identify additional activities to be conducted in order to complete its assessment and craft its recommendations on whether the FTR is viable in the Philippine setting or not.

After a series of consultation meetings, the MSC reviewed the result of the study and recommended to highlight more on the removal of financial risks to the consumers rather than highlighting that FTR is an avenue for possible revenue of players. It was further suggested to specify that the scheme / mechanism should not allow any passed-on costs to the consumers. Moreover, to avoid any abuse or anti-competitive behavior, it was highlighted that the concentration of the transmission rights must likewise be monitored and considered in the operation of the FTR. This may also be monitored and checked by the Technical Working Group (TWG) which shall be formed by the DOE in compliance with the WESM Rules.

Furthermore, the appetite of the traders in participating to the FTR market should likewise be included in the determination if there really is a market for the same. MAG shared that during the discussion with the MO, generators already have the ability to forecast the prices in the market which may be used in the trading of FTRs.

After due deliberation, the Committee approved the FTR study and transmitted the copy of the report to the DOE and ERC on 17 November 2022.

2.1.9. Discussion on the Request for Extension for the Study on the Impact in Competition of DSO

As a background, the TC underwent a technical evaluation in introducing a new entity in the WESM, which is the Distribution System Operator (DSO), who shall act on behalf of the embedded generators (EG). Part of the proposal was the procedures for coordination among the MO, the SO, the Distribution Utilities (DUs), and EGs regarding the supply to be considered in the WESM which would require the delineation between the SO and the DU (who will serve as DSO) in managing and providing dispatch instructions to EGs within its franchise area. In relation to the said proposal, the TC requested the MSC to conduct an assessment on how the proposed DSO model may affect competition among generators in the WESM.

The MSC noted the status of the said study as well as the next steps to be undertaken for the completion of the assessment. After the discussion, the Committee approved the request of MAG to move the deadline of the study from Q4 2022 to 2023.

2.1.10. Updates on the Revised Schedule on the Submission of Reports in relation to WESM Data Concerns

Following the recent updates / developments on the status of the data used in preparing the Committee assessment reports, the MSC discussed the proposed revisions to the timelines for submission, as initially approved by the Committee through Resolution No. 2021-67.

The Committee noted that the proposed revisions arose from 1) data issues raised during the PEMC-IEMOP coordination meeting last April 2022 which affected the submitted and published reports of the Committee, and 2) other data issues identified initially in May 2022 until October 2022. The revised timeline on the submission of reports heavily relies on the availability of data from the SO and MO.

2.1.11. Discussion on the NGCP Yellow and Red Alert Notices in June and September 2022

In line with the occurrence of red and yellow alert notices last 18, 20, and 21 June 2022 in the WESM arising from, among others, underbuilt transmission and distribution lines, the MSC requested for the affected party's explanation on the event. The MSC noted the coordination meetings held between the concerned electric cooperative (EC) and SO to resolve the issue and to mitigate the occurrence of the similar incidents in the future. After due deliberation, the Committee agreed to write a formal letter to both parties requesting for the effective implementation of the necessary measures to address the identified issues.

Aside from the June alert notices, the Committee was likewise apprised on the details of the red alert notice issued by the SO last 12 September 2022.

The SO issued two yellow alerts and a red alert in the Luzon power grid on Monday, 12 September 2022, after seven (7) power plant units experienced outages which resulted in the combined outage system capacity of 4,509MW. The red alert was imposed for 1300H to 1600H which was lifted at 1700H. The two yellow alerts, on the other hand, occurred at 0900H to 1300H and 1600H to 2100H. The SO, in its latest advisory, stated that the yellow alert will be retained until 2000H on Tuesday, 13 September 2022. In addition, it was explained by the SO that on top of the seven (7) power plants on forced outage, three others ran on derated capacities which aggravated the entire grid situation.

2.2. Development of Monitoring Framework and Parameters of Anti-Competitive Behavior (ACB) in the WESM

Pursuant to WESM Rules Clause 1.6.2 and Sections 3.1.b (iv) and 4.4 of the MSM, the MSC is mandated to report any apparent or suspected incidents of anti-competitive behavior (ACB) or abuse of market power by any WESM Participant/Member. With this, the Committee commenced with its effort to develop the appropriate monitoring framework and parameters of ACB in the WESM, with the assistance of a 3rd party consultant. The Committee has also recommended for MAG to consult with various agencies having oversight functions on ACB matters, as well as IEMOP-MO, throughout the duration of the study.

To avoid possible conflict with regard to the jurisdiction on other industry handled and monitored by the Philippine Competition Commission (PCC), it was agreed to clarify in the scope of the endeavor, that the monitoring framework and parameters to be developed will only be for the electricity industry. In addition, the coverage of the activities for the consultant shall include the provision of recommendation as to whether or not the ACB definitions and related provisions should be incorporated in the Market Rules.

The content of the Terms of Reference (TOR) was duly consulted with the ERC and the comments of the Commission were duly received in April 2022. In general, the MSC agreed with the recommendations and proposed revisions to the TOR. However, the proposed inclusion of software installation in the scope of work was noted to be not included in the current project and shall commence in 2023.

With the approval of the necessary documents, PEMC proceeded with its procurement activities with two (2) interested bidders who submitted their technical and financial proposals. As the principal of this activity, the MSC was informed on the contents of the submitted technical proposals and subsequently submitted its evaluation to the PEMC-Procurement Committee, for consideration. With the successful negotiation and awarding of contract, the engagement

commenced in September 2022 through a kick-off meeting attended by the representative/s from the ERC and PCC.

During the duration of the project, the MSC attended a series of consultation meetings and discussions with the consultant and the industry partners. Recognizing the authority and expertise on competition related matters, representatives from the ERC, the DOE, the PCC, and the Compliance Committee (CC) were duly consulted by the MSC. Their respective comments and inputs shall be considered in the finalization of the framework and the final version of the study. Meanwhile, the revised Inception Report, containing the general contents of the study, was reviewed and duly approved by the MSC on 24 October 2022 and was endorsed to the PEMC President for the execution of the certificate of acceptance.

During the Committee's November and December meetings, the MSC, together with the industry partners, reviewed and deliberated the proposed monitoring framework and parameters presented by the 3rd party consultant. The discussion revolved around the definition of market power and how it is exercised in electricity markets, together with the proposed definitions of ACB, as well as the detailed technical specification of the tools which will be an input to the development of the software for monitoring of possible ACB. Lastly, the study provided a review of ACB monitoring as practiced in other jurisdictions.

2.3. Assessment of the Retail and Open Access (RCOA) Market

2.3.1. RCOA Monitoring Reports

Pursuant to the Catalogue of Retail Market Monitoring Data and Indices (CRMMDI) Section 3.1.2, the MSC monitored and assessed the performance of the Retail Market, as contained in the Retail Market Assessment Report. In accordance with Sections 3.1 (b), 4.3.8 (b), and 4.3.8 (c) of the MSM Manual and Section 3.1 of the Catalogue of Retail Market Monitoring Data and Indices (CRMMDI), the MSC submitted to the PEM Board the following:

- Four (4) quarterly Retail Market Monitoring Reports (RMMR), covering the Fourth Quarter of 2021 to Third Quarter of 2022; and
- Annual Retail Market Monitoring Report (ARMMR), covering the period 26 December 2020 to 25 December 2021.

The Retail Market Monitoring Report contains the Retail Market Assessment Report, which discusses the outcome of monitoring indices and provides indications on how the retail market performed during the period in review and how it fared in comparison with the performance of the previous periods.

During the year, the MSC regularly presented to the PEM Board the highlights of its assessment of the RCOA Market. The reports were also furnished to the DOE and ERC for information and reference and were published in the PEMC website¹⁰.

III. COORDINATION WITH VARIOUS AGENCIES AND ENTITIES

3.1. Meeting with IEMOP-MO and NGCP-SO to Review Market Intervention Events

With the invitation from the MSC, the IEMOP and NGCP participated in the discussions related to the occurrence of the following MI events from July to December 2021.

Duration	Source of MI	Region/s Affected	Reason
28 June 2021, 1340H	MMS Software	Luzon, Visayas, Mindanao	Software-related error. Data population to market applications
21 Aug 2021, 0000H to 0630H	Power System Operations	Visayas	Partial System Blackout
21 Aug 2021, 1250H – 1255H	MMS Software	Luzon, Visayas, Mindanao	Unresponsive database server due to multiple de-committed processes
24 Aug 2021, 2345H 25 Aug 2021, 0040H	MMS Software	Luzon, Visayas, Mindanao	Market run failure due to software defect where there is multiple nomination processed in same dispatch interval
04 Sept 2021, 2345H	MMS Software	Luzon, Visayas, Mindanao	Software-related error. Long duration of MPI transfer
13 Sept 2021, 1515H – 1525	Erroneous real-time data	Visayas	Significantly high number of open breaker status in Visayas after switching to back to updated eDNA ICCP data source
02 October 2021, 0950H – 1100H, 1630H – 1715H	Power System Operations	Visayas	Total Blackout in Bohol
05 October 2021, 0600H – 2050H	Power System Operations	Visayas	Multiple line tripping and plant outages in Negros and Panay Sub grids
16 December 2021, 2215H – 2345H	MMS Power Flow Divergence	Luzon, Mindanao	RTD market run failure

¹⁰ Link: <https://www.wesm.ph/market-outcomes/retail-market-assessment-reports>

3.2. Meeting with IEMOP-MO, Technical Committee (TC) and PEMC-Information Systems and Technology Department (ISTD) on the Software-related failures encountered by the MMS

As part of its review and assessment of the intervention events, the MSC invited the representatives from IEMOP, TC, and PEMC-ISTD to discuss the details of the software-related intervention events including the IEMOP's established policies and processes to avoid the recurrence of such and to mitigate the effects when it does take place. On the ways forward, the MSC was apprised that the upgrades on the MMS were already planned and were likewise in place. In addition, there were action plans already completed while software fixes are still on the way. There were also planned enhancements not directly related to the MI events which may also aid in addressing software issues encountered.

In view of the discussion, the MSC will be reviewing the provisions of the Rules pertaining to MI events for submission of a rules change proposal.

3.3. Discussion with the Market Operator, System Operator, and DOE Representatives on the Power Situation Outlook for 2022

With the invitation from the MSC, the representatives from IEMOP, NGCP, and the DOE participated in the discussion related to the power situation outlook for the summer months of 2022. The said meeting was conducted in line with the growing concern on the possible insufficiency of electricity supply which may occur in summer, especially during the election period in May 2022. The NGCP apprised the MSC on their simulations using the Forced Outage Rates on different time frames. The Committee was likewise informed that in line with the national elections, the DOE has ordered the prohibition of outage schedules one (1) week before and after the elections – prior coordination shall be necessary for rescheduling of outages which shall undertake an approval process. Apart from the DOE's order, a Department Circular was likewise issued prohibiting scheduled outages during summer seasons¹¹, with exemption to hydro power plants which may experience deficit in water reservoir during the period.

In conclusion, the MSC noted that there will be ample supply of electricity during the summer season.

3.4. Meeting/s with NGCP-SO

3.4.1. Meeting with NGCP-SO regarding Plans for the Restoration / Repair of Bohol Transmission Lines

Following the inquiry received by MAG from the ERC in one of its coordination meetings, the MSC agreed to invite the representatives from NGCP-SO to attend the Committee meeting on

¹¹ DOE DC2020-02-0004. *Providing Guidelines on the Planned Outage Schedules of Power Plants and Transmission Facilities and the Public Posting of the Grid Operating and Maintenance Program.*

11 April 2022, to discuss the updates and plans for the permanent repair of the Bohol transmission system which is currently connected to the grid via temporary means (Emergency Restoration System). The restoration of the permanent connection shall trigger the lifting of the market suspension in the area.

After the discussion, the MSC noted the information gathered from the NGCP-SO that the restoration shall be completed by August 2022. The said information shall be reflected in the MS Report to be submitted to the PEM Board.

3.5. Meeting/s with IEMOP-MO

3.5.1. Meeting with IEMOP-MO regarding the Implementation of Green Energy Option Program (GEOP) in the RCOA Market

Pursuant to the MSC's mandate and responsibility to continuously monitor activities in the RCOA Market, and likewise undertake assessments and analyses on matters concerning the market, the Committee invited the representatives from IEMOP to provide a presentation on the overview and updates on the implementation of the Green Energy Option Program (GEOP). The MSC was presented with the fundamentals of GEOP, the corresponding processes involved for program, the eligibility requirements of end-users, the switching timeline, and the current statistics of the GEOP members.

3.5.2. Discussion with Market Operator on the Overview of WESM Mindanao's Operations and Implementation

The MSC invited the representatives from the IEMOP to present and discuss the overview of WESM Mindanao's operations and implementation update, as requested by the Committee through its letter dated 25 November 2022.

The integration of Mindanao in the WESM is expected to commence on 26 December 2022 wherein the dispatch conformance standards and some registration requirements, more specifically on the Prudential Requirements (PR), will be relaxed for three (3) months based on the promulgation of the DOE. After which, full compliance to requirements of Market Rules and Manuals shall be implemented. It was further emphasized that there is a necessity for WESM Mindanao to be on commercial operations, at least two (2) months prior to the energization of Mindanao-Visayas Interconnection (HVDC) in June 2023.

All the necessary requirements with regard to policy development, regulatory requirements, and technical requirements are all completed. Likewise, trainings and trial (parallel) operations were already undertaken as part of the preparatory activities for the WESM Mindanao Implementation. The only remaining task is the completion of market participant registration in Mindanao, which status, as of 17 November 2022, was also presented to the MSC.

3.6. Meeting with PEMC

3.6.1. Meeting with PEMC's Corporate Planning and Communications Department re Orientation on Renewable Energy Market (REM)

As part of the Committee's continuing activities to be apprised on the operation of the Renewable Energy Market (REM), the MSC invited representatives from the PEMC-Corporate Planning and Communications (CPC) Department to discuss on the overview of the Philippine REM, specifically on the information regarding the REM participants, composition of REM governance, processes, and the system used for the market.

The Committee was informed that the registration function of the REM lies solely with the jurisdiction of PEMC and that MSC will have no surveillance functions with respect to the REM as the responsibility lies with the RE Governance Committee (RGC).

3.7. Meeting with One (1) Coal Power Plant re Forced Outages last June and July 2022

The MSC invited the representatives of one (1) coal plant to discuss the details of the monitored forced outages on 06 June, 10 June, 25 July, 27 July, and 31 July 2022.

The MSC was apprised on the following causes as presented: 1) the unit manually tripped due to steam and water quality due to sea water contamination, 2) manually tripped due to condenser tube leak, 3) generator impulse not online, and 4) result of testing and commissioning (T&C) of the plant. The MSC likewise noted the ways forward undertaken and currently being done by the plant in order to address the recurrence of these outages.

IV. PROPOSED AMENDMENTS TO THE WESM RULES AND OTHER MARKET MANUALS

4.1. Discussion of Proposed Amendments to the WESM Penalty Manual and Registration, Suspension and De-registration Criteria and Procedures for the Proposed Penalty and Sanctions for Violation / Breach during the Expired Testing and Commissioning Status of Plants

The MSC discussed the proposed penalty framework and the proposed amendments to the 1) Registration, Suspension and De-Registration Criteria and Procedures Manual and 2) WESM Penalty Manual Issue 1.0, to incorporate the provisions of the DOE DC 2021-06-0013 and DOE DC 2022-05-0015 on the guidelines pertaining to the conduct of T&C of plants. The penalty framework and proposed amendments were mainly to provide a strict enforcement to the participants which should

mitigate any possible non-compliance with the prescribed 2-month T&C period without cause, and non-compliance with the 0MW RTD schedule, as provided in the policy of the DOE.

In view of the previous discussions and agreements, the MSC deliberated the details of the submitted proposed rules change in relation to the T&C Penalty Framework. Upon review, the following manuals will be affected by the said proposed rule change:



The MSC noted that it is within the responsibility of the RCC to deliberate and adopt the proposed revisions to the Registration, Suspension and De-Registration Criteria and Procedures Manual. Meanwhile, the deliberation on the revisions to the Penalty Manual lies solely in the jurisdiction of the MSC.

In the preparation of the said proposal, the MSC duly consulted the comments and insights from the CC who will reinforce and monitor the compliance of the participants. Pursuant to the provisions of the WESM Penalty Manual, the stakeholders were consulted through the RCC. The consolidated comments received for both manuals and the proposed responses were deliberated by the Committee.

In view of the submitted comments, the Committee attended the deliberation of the RCC for the proposed amendments to the Registration Manual, wherein the comments to the Penalty Manual were also tackled.

Furthermore, the Committee deliberated on the additional comments and observations of the CC to the proposed amendments. The CC proposed that there should be no penalties during the three (3) workings days within which the participants are allowed to comply with the required submission of the received Certificate of Compliance (COC); thus, should not be sanctioned during this period to which the MSC agreed to adopt. The Committee likewise requested the Enforcement and Compliance Office (ECO) to conduct a further study on the possible inclusion of a clause to adjust the financial penalty in accordance with several factors.

The MSC further deliberated on the revisions to the proposed amendments to the WESM Penalty Manual in consideration of the following comments received from the PEM Board last 26 October 2022:

- Revise the multiplier of the pre-set penalty amount, i.e., from "generated capacity" to "output capacity" for the breach related to the generation after the expiry of authorized test and commissioning period; and
- Minor revisions to the sample computation.

After due deliberation, the Committee approved the proposed amendments for submission to the DOE.

4.2. Discussion on Proposed Amendments to WESM Dispatch Protocol Manual regarding the Maximum Available Capacity

The MSC was apprised on the draft proposed amendments to the WESM Rules and Dispatch Protocol Manual which, among others, aim to reflect the considerations in submitting maximum available capacities which shall also address concerns of the trading participants with regard to the tagging of possible breaches in the WESM.

In general, the proposed amendments intend to add provisions in consideration of ramp rates and connection status by Trading Participant as part of offer submissions to the market, and to revise the definition of maximum available capacity, including the constraints being considered during the market dispatch optimization.

The MSC approved the recommendation for the proposal to be co-authored with the CC.

4.3. Discussion on the proposed amendments to the WESM Rules and related Market Manuals for the Procedures during MI/MS

The MSC reviewed the highlights of the proposed amendments to the MI / MS Procedures. The said proposal was in line with the MSC's observation on the recurrence of similar events repeatedly categorized under force majeure.

While these events were inevitable in nature, it was noted that its recurrence should have been avoided by appropriate measures considering that commercially available methodologies may already be availed of by the affected operator. In addition, the timeliness of report submissions from the MO and SO is essential for the MSC to commence with its responsibilities under the WESM Rules and related market manuals.

The Committee recommended additional revisions and inclusions to the proposal specifically on the categories for acceptable reasons for declaration of MI events, and the clarification on the wording

that the MO and SO have respective power to initiate and lift MI events, as currently practiced. The proposed amendments were adopted by the Committee, subject to finalization based on the aforementioned revisions.

V. OTHER ACTIVITIES AND ACCOMPLISHMENTS

5.1. Review of Various Department Circulars and Issuances

The MSC regularly reviewed various proposed amendments, DCs, and/or Resolutions pertaining to the Committee's mandates and responsibilities to ensure its compliance with the same. This activity involved the following issuances:

- ERC Resolution No. 04, Series of 2022 – A Resolution Adopting the Rules for the Electric Retail Aggregation Program

The MSC was made aware of the Rules for the Electric Retail Aggregation Program as promulgated by the ERC for implementation on 26 December 2022 which focuses on the following:

- Establishment of standardized rules and procedures governing the aggregation of electricity requirements of End-users in the Competitive Retail Electricity Market (CREM).
 - Clarification on the requirements, conditions, eligibility, qualifications and disqualifications of participants in the program.
 - Expansion of the base of end-users having the ability to choose their suppliers of electricity.
- DC2022-05-0015 – Supplementing Department Circular No. DC2021-06-0013 on the Framework Governing the Test and Commissioning of Generation Facilities for Ensuring Readiness to Deliver Energy to the Grid or Distribution Network

The MSC was apprised of the supplementing provisions which allows power plants to continue to inject energy to the grid after successful completion of test and commissioning process, and be compensated, subject to the applicable provisions of WESM Rules. This is in due consideration of the concerns raised by Generation Companies on the gap between their full compliance to the Grid Compliance Test and the actual issuance by the ERC of the COC.

5.2. Participation in the PEMC Annual General Membership Meeting

The MSC participated in the virtual conduct of the PEMC Annual General Membership Meeting (AGMM) held on 24 June 2022. MSC Chairman Atty. Doroteo B. Aguila served as a resource

person and presented the highlights of the MSC activities and accomplishments for 2021 on market monitoring and assessment, enforcement and compliance, and policy development to the PEMC members.

5.3. Review of Proposed Committee Work Plan for 2022

The MSC reviewed and commented on the proposed activities of the Committee for the year 2022, which includes the timely submission and publication of reports as required by the rules and manuals, development of monitoring framework for ACB, and a series of market studies. The Committee was also apprised of the list of market studies and engagement to be conducted for 2023 to 2024.

With no further edits and comments, the MSC approved the revised work plan for incorporation in the Annual Committee report for 2021 and work plan for 2022 submitted to the PEM Board on 31 March 2022.

5.4. Investigation Activities related to Generator Behavior

In compliance with the mandate under Sections 3.1, 4.1.1, 4.3.4, and 4.4 of the MSM, the MSC has undertaken an assessment and investigation on the notable behaviors of the generator/s as observed by the Committee related to a possible breach of the WESM Rules.

After due deliberations, the Committee approved the recommendations presented by MAG as endorsed by the Office of the Chief Governance Officer.

5.5. Conduct of MSC Strategic Planning Workshop for 2023-2025 Activities

To ensure that the MSC's work plan is aligned with and included in the 2023-2025 PEMC Corporate Strategic Plan to be approved by the PEM Board, the MSC, together with MAG and CPC, conducted a planning workshop during the Committee's Regular Meeting in October 2022. The workshop aims to identify and discuss the areas in the CSP where MSC's contributions would be most relevant.

Following the workshop, the MSC identified the initial list of activities for the year 2023:

- Development of Monitoring Framework and Parameters of Anti-Competitive Behavior (ACB) in the WESM including the development of processes which will be an input to the upcoming software development.
- Proposed Amendments to the WESM Rules and related Manuals regarding Market Intervention and Suspension.
- Generator / Reliability Summit.
- Assessment on possible enhancements to the RCOA Market based on the results of consultation meetings with stakeholders.

- Economic Impact of Market Intervention events.

The agreements shall be reflected in the MSC's 2023 work plan which shall be an appendix to its Annual Report.

5.6. Publication of MSC Quarterly Reports

The MSC regularly publishes its Quarterly Accomplishment Report to apprise stakeholders of its activities and accomplishments for the Quarter. For the year 2022, the MSC has published four (4) Quarterly Accomplishment Reports which may be downloaded in the PEMC website¹².

VI. MEMBERSHIP

The MSC is currently composed of the following experts in the fields of electrical engineering, information technology, and law:

- 1) Atty. Doroteo B. Aguila (Chairperson)
- 2) Engr. Arthur N. Escalante
- 3) Engr. Christian M. Orias
- 4) Engr. Ferdinand P. Villareal
- 5) Engr. Peter L. Wallace

VII. RESPONSIBILITIES

As set out in Section 1.6.2 of the WESM Rules, the responsibilities of the MSC are as follows:

1. Monitor activities conducted by WESM Participants in the spot market;
2. Prepare periodic reports, which outline:
 - a) Activities of WESM Participants in the spot market;
 - b) Apparent or suspected incidents of ACB by any WESM Participant; and
 - c) Matters concerning the operation of the spot market.
3. Propose amendments to the WESM Rules as necessary to:
 - a. improve the efficiency and the effectiveness of the operation of the WESM; and
 - b. enhance the prospects for the achievement of the WESM objectives; and
4. Assist the RCC in relation to its assessment of proposals to amend the WESM Rules under Chapter 8.

¹² <https://www.wesm.ph/market-governance/market-surveillance/msc-reports-and-work-plans>

In addition, the MSC is tasked under Section 3.1 of the Market Surveillance Manual to perform the following responsibilities:

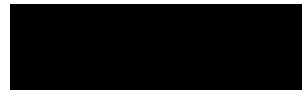
1. Monitor activities conducted by WESM Participants in the spot market;
2. Prepare and submit monthly monitoring reports, quarterly retail market monitoring reports, annual reports to the PEM Board, the DOE and the ERC;
3. Prepare and submit special market reports as may be directed by the PEM Board, DOE, or ERC;
4. Review an event of market intervention or market suspension, as defined under Chapter 6 of the WESM Rules, and prepare the corresponding Market Intervention or Market Suspension Report to be submitted to the PEM Board;
5. Propose amendments to the WESM Rules in accordance with Chapter 8;
6. Upon request, assist the RCC in reviewing proposed amendments to the WESM Rules and Market Manuals, and make recommendations on the expected impact and necessity of the amendment proposal; and
7. Annually review and propose changes, as appropriate, to the WESM Penalty Manual.

VIII. MSC WORK PLAN FOR 2023

Annex A provides for the details of the MSC's program of activities for 2023, consistent with the PEMC Corporate Strategic Plan.

SUBMITTED BY:

Approved by:

THE MARKET SURVEILLANCE COMMITTEE**DOROTEO B. AGUILA**
Chairperson**ARTHUR N. ESCALANTE**
Member**CHRISTIAN M. ORIAS**
Member**FERDINAND P. VILLAREAL**
Member**PETER L. WALLACE**
Member