MINUTES OF THE RULES CHANGE PANEL
13th PANEL MEETING
HELD ON TUESDAY, 11 MAY 2004 AT 10.10AM
AT ENERGY MARKET CO. PTE LTD
9 RAFFLES PLACE #22-01
REPUBLIC PLAZA, SINGAPORE 048619

Present: Allan Dawson (Chairman) Eu Pui Sun
          Yip Pak Ling Ben Lau
          T P Manohar Dr. Daniel Cheng
          Kok Shook Kwong Lee Sin Chong
          Robin Langdale Francis J. Gomez

Absent with Tan Boon Leng

In Attendance: Paul Poh, EMC  Teo Wee Guan, EMC
               Shashank Swan, EMC  Poa Tiong Siaw, EMC

Action By

1.0 Notice of Meeting

The Chairman called the meeting to order at 10.05am. The Notice and Agenda of the meeting were taken as read.

2.0 Confirmation of Minutes of the 12th Rules Change Panel Meeting

The Minutes of the 12th Rules Change Panel Meeting held on Tuesday, 6 January 2004 was tabled and having previously been circulated was taken as read.

There being no amendments to the Minutes, the Rules Change Panel unanimously accepted and approved the Minutes

3.0 Matters Arising from the 12th Rules Change Panel Meeting

Item 1.0 Publishing Outage Reports Submitted to the MSCP
(Paper No EMC/RCP/12/2004/076)

EMC had conducted and presented a further study into the two issues raised by the Panel:

(a) Practice in other jurisdictions
(b) the potential threat to national security

EMC provided the Panel with a cross-jurisdictional comparison of the various market operators.
The Panel was informed that EMC had made a study of the US FERC’s (Federal Energy Regulatory Commission) rules on Critical Energy Infrastructure Information (CEII) which are as follows:

- necessitated by the terrorist acts committed on September 11, 2001 and the ongoing terrorism threat
- adopts a definition of critical infrastructure that explicitly covers proposed facilities
- details which location information is excluded from the definition of CEII and which is included
- keeps sensitive infrastructure information out of the public domain, decreasing the likelihood that such information could be used to plan or execute terrorist attacks

CEII is information about proposed or existing critical infrastructure that:

(i) is exempt from disclosure under the Freedom of Information Act
(ii) relates to the production, generation, transportation, transmission or distribution of energy
(iii) could be useful to a person planning an attack on the infrastructure
(iv) does not simply give the location of the critical infrastructure

A comparison was made between jurisdictions in the US and it was found that with this ruling, some jurisdictions keep outage information out of the public eye while others continue to publish them. On an international basis, the current practice in NEMS was near the conservative end of the spectrum where disclosure of outage information is concerned.

Mr. Robin Langdale felt that the RCP is not the right body to determine whether information compromises national security and this needs to be determined by professional security agencies within the government.

The Panel requested EMC to note the Panel’s preference to be conservative on security matters. The Panel felt that a specialist assessment on this issue is required. EMC was requested to seek a referral from the EMA’s to the appropriate body that can perform that assessment.

**Item 10.0 EMC’s PIMS for Financial year 2004** (Paper No. EMC/RCP/12/2004/01)

The Panel had earlier requested EMC to improve on the proposed performance targets. EMC informed the Panel that the revised targets on Pricing, Information and Settlement functions have been submitted in a revised paper to the EMA. EMC will circulate a copy of this to the Panel.
Item 11.0 Report of the RCP on PSO’s Proposed Budget for FY04/05

The Panel had requested EMA to revert on the Panel’s query on the treatment of over/under recovery of PSO fees. EMA advised in its letter dated 23 April 2004, that as EMA operates on the basis of a balanced budget, there is no adjustment to PSO’s fees if PSO revenue exceeds its actual expenditure. The Panel felt that as PSO budget was part of EMA’s budget and thus part of the government’s budgeting it was beyond the Panel’s scope and thus the issue be treated as closed.

4.0 Paper No. EMC/RCP/13/2004/231 – Wholesale Settlement Re-Run

The proposed rules change recommends adopting a system to perform wholesale settlement re-runs due to metering errors. In its report to the EMA, the Settlement Task Force tasked EMC to recommend a solution to the RCP. EMC’s proposed solution is software enhancement to the current wholesale settlement system to achieve “Automated Partial Re-Run with Nominated Days”.

It is able to achieve the following:

(a) Minimal impact on invoices
(b) No re-computation of charges/rates
(c) Systematic re-run with audit trails
(d) Closure of wholesale settlement after 1 year gives finality
(e) Minimal fluctuation to HEUC

The Chairman of the Panel then invited Ms. Jennise Ting of EMC to the meeting.

Ms. Ting made a presentation to the Panel on Settlement Re-runs.

The Panel was informed that the present settlement system was designed on the assumption that there will be no metering error. However metering errors are inevitable in any electricity market and these errors necessitate settlement re-runs.

Since market start in 2003, the frequency of metering error resulting in settlement re-runs by settlement date totaled 278.

Currently, the settlement re-run is an offline and manual process. The setting up of an offline settlement re-run environment would also compete with other operations such as IT testing and P&I investigation for the usage of the server.

The Panel was also informed that settlement re-run reports cannot be accessed from the trading website and re-run results are not stored in the production system. Any financial adjustment amount is computed manually and is not available on the trading website for verification. The manual process also entail a high risk of errors.
Most important of all because of the manual full off-line re-run only 6 manual re-runs could be perform a week on Tuesday, Wednesday and Thursday. Given the recent experience of metering errors discovered that span from Jul to Dec 03, it is no longer feasible to continue with such a manual re-run especially when it is always possible that other errors spanning long periods are discovered.

The proposed partial settlement re-run module would Incurs a one-time capital expense of $400,000 (approx.) being development cost to enhance the settlement system. This capital expense has been budgeted for in EMC’s 2004/2005 budget and has been approved by the EMC Board and EMA. There will be no additional cost imposed on market participants as a result of this development.

By implementing this option, all the risks/problems associated with offline full settlement re-run would be eliminated. Also, ample information would be made available to market participants for verification.

In summary, Ms Ting reiterated that settlement re-run is inevitable because there will always be correction to meter readings, contrary to some beliefs. A robust system is necessary to ensure an effective and efficient settlement re-run. It is possible and feasible to enhance EMC’s existing systems to perform automated partial re-run with nominated days without additional cost to market participants.

The Panel thanked Ms. Ting for her presentation.

Mr. Langdale wanted to know how metering errors occur and he was advised that in most cases, the errors do not involve faulty meters or incorrect readings. There were data input and human errors. Mr. Manohar cited an example where there were two non-contestable customers who were ready for contestability. The customers were offered high tension tariffs but were metered at low tension. When the customers became contestable, the meters were changed and it was discovered some months later that the customers were billed at 6.6KV voltage when they should have been billed at 22KV. As the energy consumption to be billed at 22KV differs from that at 6.6KV because of different transmission loss factors being applied, it resulted in a need for an amendment to the settlement files.

Mr Langdale suggested that many errors are likely to be significant for the MP or consumer, but insignificant in relation to the settlement amount of the whole market. Hence, the need to perform re-runs could be greatly reduced if only significant amounts (compared to market settlement) are adjusted for the affected MPs. Insignificant amounts can be “written off”.

The Panel was then informed that for the first 5 months of 2003, settlement re-runs resulted in a total net adjustment amount of $1.99 million to retailers and $2.04 million to generators, indicating that errors are not insignificant.
[Post Meeting Note:

Mr. Paul Poh reiterated that while applying a “materiality” threshold for metering errors makes economic sense ie ideally, we should not adjust for metering errors whose values are insignificant relative to the cost of adjustment. However, implementing a threshold poses many operational difficulties described in Section 3.3.2 of the Rule Change Proposal. The method of full offline re-run is not a viable option to deal with large number of re-runs and causes disruptions to customers and retailers not related to the errors. Hence, if any re-run is to be performed at all, a new system will still be needed. The proposed system of partial re-run with nominated days is the most efficient. Once we have built this automated re-run system, there is no need to distinguish between significant and insignificant amounts because the cost of handling them is similar.]

The Chairman of the Panel then invited Mrs Koh Sok Chwee; Mr Kelvin Chan; Ms Jasmine Ng and Ms Maria Lu from SP Services to the meeting.

Ms. Maria Lu made a presentation on the functionality changes to the MSSL IT Systems for the proposed rule change of the wholesale settlement re-run.

The Panel was informed that EMC had requested MSSL to study the possibility of providing corrected metering data for the purpose of the proposed settlement re-run regime. A feasibility study was carried out by the MSSL respective business owners and the ISD team.

MSSL estimated a one-time implementation costs to the changes to the MSSL System as follows:

<table>
<thead>
<tr>
<th>Task</th>
<th>Cost Estimations (SGD$)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Modifications to DMS, PV2, BRM, PNS &amp; EBT</td>
<td>$1,295,000.00</td>
</tr>
<tr>
<td>Server upgrade and storage expansion (incl. PROD &amp; DR)</td>
<td>$2,100,800.00</td>
</tr>
<tr>
<td>Integration Test, Stress Test, Retail &amp; Market Trial and Dry Run</td>
<td>$967,500.00</td>
</tr>
<tr>
<td>Grand Total</td>
<td>$4,363,300.00</td>
</tr>
</tbody>
</table>

The Panel thanked Ms. Maria Lu for her presentation.

After much deliberation, the Panel agreed to support EMC’s recommendation to the proposed solution of software enhancement to the current wholesale settlement system to achieve “Automated Partial ReRun with Nominated Days”, at an estimated one-time capital cost of $400,000. The Panel did not agree, at this point in time, with the proposed changes and estimated costs of the MSSL’s systems. However EMC would modify its proposed enhancement to be able to accept the current way MSSL submits its meter errors file for it to be able to perform the proposed partial re-run so MSSL need not modify its systems.
13th Rules Change Panel Meeting – 11 May 2004

Mr. Lee Sin Chong suggested that EMC look at commercial risks taken for settlement re-runs if no re-runs were perform after the issue of the final settlement statement

EMC was requested to submit a comparison of the two following options:

1. Letting market participants bear the risks of metering errors discovered after the final settlement statement has been calculated (T+9 business days), i.e. there will be no settlement re-run.
2. Modified Option A to exclude any change to MSSL’s systems

5.0 Paper No. EMC/RCP/13/2004/232 – Alternate Default Bus

EMC’s proposed rule change requires the PSO to designate an alternative default bus, which is in the same switch-house or substation as the main default bus, for a generation facility. The MCE will use this alternate default bus in its run when a generator and its main default bus are both disconnected from the grid. Currently, the MCE cannot establish the correct MEP for a disconnected generator if the main default bus of that generator happens to be also disconnected.

In this case, the MCE will set an artificial price of -$4500 as the MEP of that disconnected generator. Such MEP is meaningless and should not be used to settle for energy or to calculate the vesting contract reference price. Otherwise, we will end up paying the genco for consuming station load and calculating an erroneous VCRP. In order to establish the correct MEP, EMC will need to perform a re-run by replacing the disconnected main default bus for the disconnected generator with an alternate default bus supplied by the PSO. Such re-run mirrors what actually happened in practice, i.e. the PSO assigns an alternate default bus to a disconnected generator whose designated main default bus is also disconnected.

EMC’s proposal to include the set of alternate default buses in the MCE system will remove the need for a MCE re-run to establish the correct MEP. The alternate default bus will be used by the MCE in its run when MCE detects (via the NWSTAT file) that a generator and its main default bus are both disconnected from the grid. This way, the correct MEP for the disconnected generator can be established automatically by the MCE without the need for a re-run. This will lower transaction cost by providing time-saving and price certainty for the market. The cost of implementing this proposal is minimal and the work of updating the alternated default buses into the MCE system can be done in-house by EMC.

This proposal was also reviewed by the Technical Working Group (TWG) and the TWG has supported EMC’s proposal.

The Panel supported EMC’s recommendation and to make the necessary recommendation to the EMC Board for adoption.

6.0 Paper No. EMC/RCP/13/2004/233 – Gate Closure Reduction

At the 11th meeting, the RCP tasked EMC to review if the gate closure period could be shortened. The reason was that with the short-term schedules (STS), the extension of gate closure from 2- to 4-hour, which was used as an interim measure to remove the ‘blind spot’ in the pre-dispatch schedules (PDS) is no longer required.
In its review, EMC considered several key issues and reached an overall conclusion. Specifically, EMC noted the following:

(a) a reasonable gate closure period is necessary to ensure some degree of certainty for the gencos (for unit commitment) and the PSO (for system security);

(b) from the economics point of view, the shorter the gate closure period, the better because more responsive bidding (offering) by MPs is enabled. The result is greater market response to changing conditions (e.g. load forecasts, grid configurations, security constraints, etc.) and hence, greater market efficiency;

(c) the shortest possible gate closure period is 1 hour --- a half-hour gate closure period is not appropriate as it gives rise to a ‘blind spot’ in the STS;

(d) EMC needs to consider the issues on unit commitment since gencos will require some lead time to prepare for generation, and this will depend on the generation type (i.e. combined-cycle or steam generation);

(e) the uncertainty of dispatch for gencos increases substantially if the gate closure period is too short (i.e. gencos risk being displaced by cheaper offers elsewhere last minute when they have already start-up their units to prepare for real-time dispatch. In this case, they have to bear the start-up/shut down costs since NEMS do not pay them such costs). When such uncertainty is factored into gencos’ offers, it may lead to higher electricity prices;

(f) the need to consider the mix of generation types among gencos to ensure any proposed gate closure changes will not unjustly favour or discriminate against a particular MP (or class of MP); and

(g) the need to consider system security requirements as the PSO will need time to carry out security assessment of the various schedules given that the process of security assessment in Singapore is not fully-automated. Also, the risk of gencos failing to comply with cleared real-time schedule (RTS) would be high if the gate closure period is too short.

After considering all the above issues, EMC felt that a 2-hour gate closure period would be appropriate at this point in time.

Since EMC’s proposal would have an industry-wide impact, EMC had also conducted a survey with MPs to find out their views (and concerns) on gate closure period reduction. All respondents supported a 2-hour gate closure period but were against any further reduction. MPs cautioned that any further reduction might have adverse impact on unit-commitment and system security.

In its overall conclusion, EMC proposed that a 2-hour gate closure period for a start and recommended that a further review on whether this period could be further shortened after this proposal has been implemented for 9 months.

The Panel supported EMC’s recommendation and to make the necessary recommendation to the EMC Board for adoption.
13th Rules Change Panel Meeting – 11 May 2004


This is a proposed modification to the market manual (application form) regarding registration of commissioning generation facility. Currently, such a registration is contingent on the PSO’s assessment that the facility’s initial test schedule/plan does not threaten the security of power system. In addition, the System Operation Manual requires PSO to assess the reliability or security of power system before the actual test can be performed. Since the assessment performed using actual plant data and prior to actual commissioning test is more reliable, the proposal is to remove the requirement for PSO’s assessment of the initial test schedule/plan done at the time of application for registration as it has little value.

In addition, it is proposed to include (in the application form) that a facility’s initial standing capability data has to be approved by the PSO before the facility can be registered as a commissioning generation facility. This requirement is already in the rules. Including this in the application form is useful to the applicant as all important information regarding application can be found in one place.

The Panel noted the contents of the paper.

The Panel supported EMC’s recommendation and to make the necessary recommendation to the EMC Board for adoption.

8.0 Date of Next Meeting

The next Panel meeting is scheduled to be held on Tuesday, 6th July 2004 at 10.00am at the EMC Board Room.

There being no other matters, the meeting ended at 12.35pm with a vote of thanks to the Chair.

ALLAN H. DAWSON
Chairman

Minutes taken by:
Eunice Koh
Market Panel Administrator