



Market Suspension

RECOMMENDATION PAPER

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1. Executive Summary

The current Market Suspension Rule (ISO Rule 6.9) and related operating policies and procedures (OPP 201) were first established in 1999. Since then OPP 201 has been revised for minor updates. The contents in both are deemed to be outdated and require a thorough review and update to reflect the changes since then in the Alberta electricity market as well as in government policy and regulation.

To date, the energy market has not been suspended. It is the AESO's view that market suspension should only occur under extraordinary circumstances and used as a last resort. The AESO solicited stakeholder feedback on this initiative through the issuing of an Issue Identification Paper in July 2009 and a Discussion Paper in July 2010.

The AESO, after taking into consideration stakeholder comments received, recommends the following:

1. Limited Market Operation may be implemented when there is a temporary outage to the market operation tools (i.e. Dispatch Tool (DT) or Energy Trading System (ETS)). Under Limited Market Operation, the System Controller will use the best available Energy Market Merit Order (EMMO) for energy market dispatch. The Dispatch Down Service (DDS) dispatch and the Ancillary Service (AS) dispatch will also be limited and the Payments to Suppliers on the Margin (PSM) will be suspended. The System Marginal Price (SMP) will be set by the highest block dispatched in the EMMO.
2. Market Suspension may be invoked under these circumstances:
 - a) Extended period of market operation tool outage
 - b) Evacuation of the System Controller from the System Coordination Centre and no access to, or system outage at the Backup Coordination Centre
 - c) The AIES is broken into two or more electrical islands
 - d) The AIES has experienced a blackout
3. A Market Suspension must be authorized by the AESO CEO or his designee, except in the case of an AIES blackout where it will be declared by the System Controller.
4. During a Market Suspension, the System Controller will not necessarily follow the EMMO, but will direct generation as necessary to maintain system reliability. The SMP will be determined as:
 - a) 30 day rolling average on peak price and 30 day rolling average off peak price respectively, prior to the market suspension initiation, or
 - b) \$999.99 when all available MW are dispatched and the System Controller invokes the Supply Shortfall procedures in order to manage supply and demand balance.
5. A payment mechanism, similar to that for Long Lead Time Energy, will be defined to allow a market participant to recover any shortfall between the

energy receipts and their operating costs while generating during a market suspension. The exception to the LLTE incremental generation cost calculation when applied in the case of market suspension is that start up costs will only be included for generating assets that are directed to start by the System Controller during a market suspension, and

- a) directed off by the System Controller during the market suspension, or
- b) dispatched off by the System Controller upon the cancellation of the market suspension and return to normal market operation.

Appendices 1 to 4 contain the flow charts that illustrate the processes of the four Limited Market Operation and Market Suspension scenarios.

2. Purpose

The purpose of this paper is to capture the highlights of the stakeholder comments received on the market suspension discussion paper issued in July 2010, provide further discussion, and outline the AESO recommendations for updates to the market suspension rule. The AESO solicits stakeholder comments on the recommendations in this paper.

3. Background

The market suspension rule, ISO rule 6.9, and associated operating policy and procedures OPP 201 were originally developed in 1999, in preparation for Y2K¹ in order to prescribe the conditions under which the energy market may be suspended and the process to be used by the System Controller to suspend the energy market under specific events or conditions. The rule also provides an energy pricing mechanism during an energy market suspension. This rule has not gone through a thorough review and update since its inception.

It is the AESO's responsibility to ensure that the ISO rules are reviewed and remain relevant. The Alberta electricity market has evolved significantly since this rule was originally written. Changes include a DDS market, an AS market and PSM as well as other changes to the energy market. There are also legislative and policy changes that have occurred, including the Electric Utilities Act, the Alberta Utilities Commission Act and the FEOC Regulation. It is important that the market suspension rule be reviewed and updated as required, to ensure alignment with all current policies.

In July 2009, the AESO issued an Issue Identification Paper² to provide its assessment on the current market suspension rule and solicited stakeholder comments.

¹ Year 2000.

² Market Suspension Issue Identification paper is available on the AESO's website at www.aeso.ca by following the path: Market > Market Policy Implementation > Market Suspension Rule review.

Subsequently, in July 2010 the AESO issued a Discussion Paper³ to discuss the various options for changes to the market suspension rule.

The AESO has considered all stakeholder comments and has now developed more defined recommendations as outlined in this Recommendation Paper. The AESO solicits stakeholder comments on the recommendations as outlined in this Recommendation Paper.

4. Policy Coherence and Principles

4.1 Related Policy and Market Suspension Principles

The AESO's mandate is set out in government legislation, regulation and policy. At the highest level, the AESO has two overarching duties: operate the market in a manner that promotes the fair, efficient and openly competitive (FEOC) exchange of electricity, and provide for the safe, reliable and economic operation of the interconnected electric system.

In section 4.1 of the Discussion Paper, the AESO provided clauses from Sections 16 and 17 of the Electric Utilities Act (EUA), and references to Section 4.2 of Alberta's Electricity Policy Framework, to support this market suspension rule review initiative.

In section 4.2 of the Discussion Paper, the AESO proposed the principles to be used to guide the market suspension rule review. The principles are summarized below (in no particular order):

- a) Market suspension must be used as a last resort.
- b) The market should not be suspended for normal market activity.
- c) The market price should be visible and transparent to all competitors.
- d) Level playing field for all competitors.
- e) Market suspension rule changes must balance design complexity and implementation simplicity.

4.1.1 Stakeholder Feedback

1. ATCO Power agreed with the market suspension principles that the AESO listed within the Discussion Paper with special emphasis added to the principle that market suspension must only be used "as a last resort". ATCO Power asked for further clarification of subsection 4.2 b) where the AESO states "Market Suspension should not be considered for normal market activity". ATCO Power expressed that the term "normal market activity" requires further explanation to ensure that market participants and the AESO have a mutual understanding of its definition.
2. Capital Power agreed the market should only be suspended as a last resort and that minimal market interference is optimal.

³ Market Suspension Discussion paper is available on the AESO's website at www.aeso.ca by following the path Market > Market Policy Implementation> Market Suspension Rule Review.

3. IPCAA had no concerns with the proposed principles.
4. MEG supported the proposed market suspension principles.
5. TransAlta agreed with the market suspension principles. TransAlta strongly agreed that market suspension must be used as a last resort and should not be suspended for normal market activity. TransAlta requested the AESO clarify what was considered abnormal market activities.
6. TransCanada suggested that a principle be added that allows a market participant to challenge a decision by the AESO to suspend the market in front of the AUC, thereby adding another level of discipline to the seriousness of a market suspension. However, TransCanada also acknowledged that this option currently existed under section 26 of the EUA.
7. The UCA suggested, in reference to the AESO's statement "In the absence of a FEOC market, market suspension may be contemplated", that if the range of conditions that could lead to market suspension remained contingent on policies determined in the FEOC review, then perhaps the establishment of the FEOC policies should take precedence over the establishment of market suspension principles.

4.1.2 AESO Response/Discussion

There is a strong agreement with Principle a) that "market suspension must be used as a last resort".

ATCO Power requested further clarification on "normal market activities" as stated in Principle b) "the market should not be suspended for normal market activity". The AESO believes that normal market activities generally include the submission of bids and offers, the dispatching of the energy market merit order (EMMO), the setting of the system marginal price (SMP) and pool price, and the performance of settlement. Market suspension will not be invoked when these functions can be performed, albeit in a limited manner, while market operation is under a Limited Market Operation mode (see section 5.2). Also, the market will not be suspended for market conditions such as supply shortfall and supply surplus (see section 5.3).

Regarding the UCA's suggestion that the establishment of FEOC policies should take precedence over the establishment of market suspension principles, the AESO believes that the proposed market suspension principles are consistent with the AESO's interpretation of FEOC principles.

The AESO does not believe it is necessary to add a principle that allows a market participant to challenge an AESO's decision to suspend the market in front of the AUC because, as TransCanada noted, this option already exists today under section 26 of the EUA.

4.1.3 AESO Recommendation

The AESO will use the principles as described in the Discussion Paper to guide the review of the market suspension rule.

5. Market Suspension Rule

5.1 Purpose of the Rule Review

The AESO proposed that since the existing the market suspension rule has been in place since 1999 and new market conditions have emerged, a review of the rule was warranted. The AESO also considered the stakeholder comments received on the Market Suspension Issue Identification Paper. As stated in the purpose section of the Discussion Paper, the AESO's view is that market suspension should only occur under extraordinary circumstances and be used as a last resort.

5.1.1 Stakeholder Feedback

1. ATCO Power agreed with the AESO that the market suspension rule would benefit from a thorough review in light of the current state of Alberta's electricity market.
2. ENMAX submitted that this rule had little impact to the market given the fact that, since 1999, the AESO had not had to invoke it.
3. IPCCCA commented that it failed to see the AESO's rationale for prioritizing this initiative over other, more pressing and significant issues – such as resolving intertie ATC allocation, demand response, LSSi procurement, etc.
4. TransAlta agreed with the AESO that market suspension should only be employed as a last resort in extraordinary circumstances.
5. TransCanada supported the notion that a market suspension should only occur under extraordinary circumstances and used as a last resort.
6. The UCA commented that while there was agreement that the current framework was somewhat out of date, it was an unlikely candidate to be receiving this priority at this time.

5.1.2 AESO Response/Discussion

Both IPCCCA and the UCA question why the AESO is putting priority on this rule review, perhaps over other market initiatives such as intertie ATC calculation. The AESO is not giving this rule review priority over other market initiatives such as wind integration, interties, LSSi, and TCM. These initiatives are all deemed to be important and the AESO is pursuing them in a parallel manner utilizing various resources within the AESO. It is AESO's mandate to ensure that ISO Rules continue to be relevant and current within the market structure. The AESO targets to improve clarity and transparency on the market suspension rule and to ensure that it will be only used as a last resort.

5.1.3 AESO Recommendation

This rule review is required and the AESO will continue the efforts on reviewing and updating this rule.

5.2 Market Operation Tool Outages

In the Discussion Paper the AESO provided options to continue operating the energy market, albeit in a limited fashion, when one or more of the market operation tools experience outages.

The System Controller will issue energy market dispatches using the best available energy market merit order. If the market participant is not able to comply with the dispatch due to an acceptable operational reason, the market participant will immediately notify the System Controller.

The Ancillary Service Providers will be required to continue to provide the AS that they are providing at the time of the market operation tool outage. The System Controller will issue directives for additional AS if required.

The DDS market will be suspended meaning that the System Controller will be dispatching assets off DDS and price will not be reconstituted in real time or after the fact.

Payments to suppliers on the margin (PSM) will be suspended due to risks of inaccurate calculation for the payments.

For intertie scheduling, the System Controller will follow the WECC interchange tool backup guideline and to use phone calls and/or faxes to confirm interchange transactions and intertie schedules.

5.2.1 Stakeholder Feedback

1. ATCO Power fully supported continuing limited market operations during outage to the market management tools. This could also preserve market price signals.
2. Capital Power agreed that in the event of an outage of one or more market management tools, provided that there was access to a merit order, the AESO should move to limited market operations rather than suspending all markets. Capital Power also asked about which tools were required to receive offer and restatement information from market participants and which tools were required to produce a current merit order. Also, if the SC was able to get a current merit order, would the SC use it to issue dispatches?
3. ENMAX commented that preserving even a limited market adhered to the intent of Alberta's energy only market. Leeway would be needed and expected to be used by the AESO in the most FEOC way possible.
4. IPCCCA commented that the key point was to recognize that in a blackout situation or an IT failure/control centre problem, the System Controller would likely end up making decisions whereby a merit order was not followed to the letter. Even in a limited market operation situation, there would be discretion used.
5. MEG supported the continued, albeit somewhat limited, market operation in the event of market management tool outages providing the System Controller could still access the current and appropriate merit order. If a merit order, reflecting market participants' bids and offers, for the subject hour is not available, MEG supports suspension of the market.

6. TransAlta was supportive of the use of limited market operation. TransAlta recommended that the merit order should be used to set price, until the event crossed over off peak/on peak time period. This would allow the market to operate as normal as possible since the current merit order would be used. TransAlta's opinion was that the merit order would no longer be valid when we crossed from on peak to off peak or vice versa, and thus an administered price should come into effect. TransAlta also asked how the AESO might be communicating the pool price to the market participants under such an event, and suggested that a separate website be used.
7. TransCanada supported the notion of limited market operation in the event of an outage of market management tools. TransCanada also suggested that the AESO might list the "market management tools that the AESO relies on to operate the market", for sake of providing transparency and clarity to market participants.

5.2.2 AESO Response/Discussion

There is general support for limited market operation.

Finer points of discussion include:

1. What are the market operation tools? What are the impacts of their outages?

The Energy Trading System (ETS) is the tool that facilitates the entering of bids, offers and restatement by pool participants. When the ETS is unavailable, pool participants cannot submit bids, offers or restatements, and offer information cannot be received by the other market operation tools.

The Dispatch Tool (DT) compiles the EMMO based on the offer submissions from the ETS. DT also manages the interdependencies between EMMO dispatches, AS dispatches and DDS dispatches. As well, DT calculates the change in each asset's dispatch level when crossing over to the next hour, including the inter-market calculations. When DT is unavailable performing these functions manually is challenging.

2. To what extent should we operate in the limited market operation mode? When should we escalate to a market suspension?

To answer these questions, we need to refer back to Principle a) where we state that market suspension should only be used as a last resort. In a limited market operation, the System Controller will continue to dispatch using the best available EMMO (i.e. the System Controller may use a "frozen" merit order for dispatch) and the SMP will be set by the highest priced block that is dispatched in the EMMO. However, a point may be reached where the System Controller cannot follow the EMMO anymore, likely due to the significant deviation from what the generators can do and what is stated in the EMMO. At that point, the EMMO becomes irrelevant and the System Controller will rely on experience and discretion to dispatch generation in order to maintain system reliability. That would be an appropriate indication to escalate to market suspension.

The AESO, in consideration of TransAlta's comment, believes that crossing over on peak and off peak periods may not necessarily be an automatic trigger for market suspension. Again we refer to Principle a) that market suspension should only be used as a last resort. The System Controller will endeavor to manage the bulk of the changes in asset dispatch levels from the switch over (for example there may be significant changes in the Hydro generation levels). Where possible, Limited Market Operation will be continued if the bulk of the changes can be made.

3. How will SMP be determined and communicated?

SMP will be set by the highest priced block that is dispatched as per the EMMO that is in use. SMP will be posted on the AESO web site in a normal manner where possible; otherwise the alternative means of disseminating SMP using a fan out voice mail system will be used.

4. How are the other markets (DDS, AS) impacted?

Due to the lack of access to the market operation tool, the System Controller will not be able to determine the inter-market calculations. The ancillary services will be "frozen" – the providers who are providing AS at the time will continue providing the AS. If more AS is required, the System Controller will direct assets to provide the additional AS.

The AESO has further refined the treatment of DDS under a Limited Market Operation in order to minimize influence on the markets. Instead of immediately dispatching off DDS the following is proposed:

If DDS is dispatched on at the onset of Limited Market Operation the DDS merit order will be "frozen" (i.e. will not switch to the future hour DDS merit order) and DDS will stay on but the dispatch volume will not change. Then when the SMP exceeds the reference price, all or part of the DDS will be dispatched off, as appropriate.

Once DDS is dispatched off or if it was never dispatched on, then it will not be dispatched on even if the SMP goes below the reference price.

5.2.3 AESO Recommendation

The AESO recommends using Limited Market Operation if the market operation tool is unavailable. The best available EMMO will be used for dispatch. SMP will be set by the highest priced block in the EMMO used by the System Controller, as per the current practice.

The ancillary services merit order will be "frozen" and the providers of AS at the time will continue providing the AS. If more AS is required, the System Controller will direct assets to supply the additional AS.

If DDS is dispatched on at the onset of Limited Market Operation the DDS merit order will be "frozen" (i.e. will not switch to the future hour DDS merit order) and DDS will stay on but the dispatch volume will not change. Then when the SMP exceeds the reference price, all or part of the DDS will be dispatched off.

Once DDS is dispatched off or if it was never dispatched on, it will not be dispatched on even if the SMP goes below the reference price.

PSM will be suspended.

If the System Controller can no longer dispatch based on the EMMO due to the significant deviations of generator availabilities from the EMMO, such that the EMMO becomes irrelevant for dispatch and the System Controller is dispatching solely to maintain system reliability, the System Controller may escalate and request the authorization from the AESO CEO to invoke market suspension.

5.3 Market Suspension for Market Issues

In the Discussion Paper, the AESO proposed that suspending the market was not required for market conditions such as insufficient energy supply and supply surplus, given that there were other ISO rules specifically designed to address those situations (OPP 801 Supply Shortfall, OPP 103 Dispatching Multiple \$0 Offers).

The AESO also proposed that suspending the market was not required to address non-competitive outcomes due to an AIES system failure as other mechanisms are in place, specifically, the powers of the MSA whose mandate included investigation and enforcement against “conduct that does not support the fair, efficient, and openly competitive operation of the electricity market”.

5.3.1 Stakeholder Feedback

1. ATCO Power agreed with the AESO that market suspension would not be necessary or appropriate because there were already rules and procedures in place to manage such conditions. ATCO Power also emphasized that the market should not be suspended due to transmission congestion, as there were real time transmission constraint management rule and procedures to deal with such situations.
2. Capital Power agreed with the AESO assessment that rules are not required for non-competitive outcomes that may result should there be an AIES system failure as there are other mechanisms/agencies in place (i.e. MSA) to address these types of concerns.
3. TransAlta agreed that the market suspension rule should not be used for transmission constraints, insufficient energy supply or supply surplus conditions. TransAlta commented that market suspension should not be used for non-competitive outcomes.
4. TransCanada did not support a market suspension for market issues like supply surplus or insufficiency. There were other rules dealing with these situations.

5.3.2 AESO Response/Discussion

Stakeholders generally agree that market should not be suspended for supply shortfall, supply surplus, or transmission constraints.

5.3.3 AESO Recommendation

Market suspension will not be invoked for supply shortfall, supply surplus or transmission constraints.

5.4 Market Suspension for Reliability Issues

In the Discussion Paper, the AESO discussed how market suspension might be invoked as result of system reliability conditions (i.e. AIES blackout, System Controller forced to abandon the workplace, AIES break up into two or more electrical islands). The AESO also provided an example of a type of extreme event, a Category D event as described in the Alberta Reliability Standard TPL-002-AB-0, where two or more transmission elements were removed or where there are cascading transmission elements, which might require market suspension to be invoked. The AESO emphasized that the assessment of whether or not to invoke market suspension had to be made on a case by case basis under the guiding principle that market suspension was to be used as a last resort.

5.4.1 Stakeholder Feedback

1. Capital Power requested the AESO confirm that the conditions that might result in a market suspension were blackout, breakup of the AIES into two/more electrical islands, the AIES not in a secure operating state, or the System Controller is forced to abandon the workplace.
2. Suncor requested more clarity be provided on the various scenarios in which a market suspension would be declared, and mentioned that it would be helpful for the AESO to provide some “real life” examples of the type of conditions that would lead to a market suspension, such as the conditions related to blackouts and the loss of critical tools, etc. Suncor also asked as to what system condition(s) constitute a blackout.
3. TransCanada generally agreed with the AESO’s comments regarding suspending the market for reliability issues.
4. The UCA questioned the purpose of making references to Category D outages and commented that referring to a power system which was not sufficiently intact to enable market operation as a reliability issue did not seem to be appropriate.

5.4.2 AESO Response/Discussion

Blackout is defined in the AESO Consolidated Authoritative Document Glossary as “a condition where a major portion or all of the AIES is de-energized”.

There is a general agreement that the conditions listed in the Discussion Paper are valid potential causes for market suspension. However, these conditions do not necessarily result in the automatic initiation of a market suspension. The AESO emphasizes the overarching principle that market suspension will only be used as a last resort. For example, if the AIES is broken into two or more electrical islands, an assessment will be made by the AESO on its impact on market operation. If it is deemed to be acceptable, albeit not completely perfect, market suspension will not be declared. Historical examples of islanding that did

not result in market suspension include the NW area, the Fort McMurray area, and the Empress area.

When the System Controller has to abandon the System Coordination Centre (SCC), the System Controller will move to the Backup Coordination Centre (BCC). When on route to the BCC, the System Controller will use a laptop computer to gain remote access to the market operation tool and should be able to conduct normal market dispatching. Then when the System Controller arrives at the BCC, the BCC will be activated and normal system and market operation will continue to be performed. However, if for some reason the System Controller cannot access the BCC or cannot activate the BCC successfully, the System Controller may escalate to market suspension.

5.4.3 AESO Recommendation

In addition to extended market operation tool outage (as discussed in section 5.2.2 above), other potential market suspension causes include: the System Controller has to abandon the SCC and cannot activate the BCC, the AIES has broken up into two or more electrical islands or the AIES has experienced a blackout.

Appendices 1 to 4 describe the processes where market suspension may be invoked under various situations.

5.5 Authority to Suspend the Market

The Discussion Paper proposed that the language that provided the AUC with the authority to suspend the market be removed from the rule.

The AESO also proposed that market suspension could only be authorized by the CEO of the AESO, or his designee, with the only exception being that the System Controller would have the authority to declare market suspension in the event of an AIES blackout.

5.5.1 Stakeholder Feedback

1. Capital Power supported the removal of the AUC authority to suspend the market in the rule language and the requirement of the AESO CEO authorization before a market suspension is declared. Capital Power also requested the AESO to confirm that the System Controller might only declare market suspension under the conditions that a) the AIES broke up into two/more electrical islands or b) the AIES was not in a secure operating state.
2. ENMAX commented that real-time suspension of the market by the AUC is unlikely and therefore removing its authority from the rule language should have no impact. ENMAX also commented that the System Controller would be in the best position to assess real time conditions and the requirement for AESO CEO authorization would help to ensure that market suspension would not be taken without due consideration.
3. IPCAA was not concerned with the proposed removal of the AUC's authority to suspend the market from the rule language. IPCAA commented that the System Controller would be in the best position to suspend the market in the event of an

AIES blackout. In other cases, having the AESO CEO authorization prior to suspending the market would be an adequate solution.

4. MEG agreed with the proposed removal of the AUC's authority to suspend the market from the rule language and agreed that the System Controller should have the authority to suspend market in the event of an AIES blackout. MEG commented that under all other scenarios the decision to suspend the market must be made by the AESO CEO or designee.
5. Suncor agreed with the proposed removal of the AUC's authority to suspend the market from the rule language.
6. TransAlta agreed with the proposed removal of the AUC's authority to suspend the market from the rule language. TransAlta also agreed that the System Controller should have the authority to suspend market in the event of a blackout and for all other scenarios the decision to suspend the market must be made by the AESO CEO or designee.
7. TransCanada supported the proposed removal of the AUC's authority to suspend the market from the rule language and that the decision to suspend the market must be made by the AESO CEO or his designee under certain circumstances (vacation, illness, etc).
8. The UCA commented it was uncertain why the AESO deemed that the AUC authority to suspend the market could or should be removed from the rule language. The UCA also questioned if there would be any restrictions if the AESO CEO's authority to suspend the market could be delegated.

5.5.2 AESO Response/Discussion

Most stakeholders support the removal from the rule language the AUC authority to suspend the market. The UCA questioned why the AESO believed this could or should be done. With the split of the Alberta Energy and Utilities Board (EUB) into the Energy Resources Conservation Board (ERCB) and the Alberta Utilities Commission (AUC) on January 1, 2008, the enactment of the AUC Act is intended to fully describe the functions and authority of the AUC. The AESO believes that it is inappropriate to include any AUC function or authority in the ISO Rules outside of what is in the AUC Act.

Most stakeholders support the authority of the AESO CEO to declare market suspension except in an AIES blackout where the System Controller may suspend the market.

Both TransCanada and the UCA inquired about the delegation restriction on the CEO's authority to suspend the market. The AESO CEO has discretion on delegating all or some of his responsibilities (e.g. when on vacation, sickness, etc) under the guidance of AESO internal practice.

5.5.3 AESO Recommendation

The authority to suspend the market will be limited to the AESO CEO or his designee, except that in an AIES blackout the System Controller may suspend the market.

5.6 Pricing During an Energy Market Suspension

The AESO Discussion Paper presented various options on energy pricing under a market suspension. The options presented were:

1. Similar day demand patterns
2. 30 day rolling average
3. Reference price
4. Status quo (as in current rule)
5. Same day of the week
6. Combined approach: a) \$999.99 when all available MW are dispatched, b) \$999.99 in a blackout, and c) one of the above options (1 to 5) for other situations.

5.6.1 Stakeholder Feedback

1. ATCO Power submitted that the combined option would best represent pool price in times of energy market suspension. In the event of a blackout, ATCO Power suggested that the SMP should reflect the value of the lost load (i.e. \$999.99). ATCO Power also proposed that under the Combined Approach Option, the similar day demand pattern pricing (Option 1) could be used, but with consideration also given to similarity in supply (such as considering the supply cushion). Also, ATCO Power suggested using a larger sample of 6 months to 1 year. ATCO Power did not expect the other options to reflect as accurately the prevailing market conditions of the day of the market suspension.
2. Capital Power did not support Options 1 to 5. Capital Power agreed that when all available MW were dispatched, price should be \$999.99, but did not agree that \$999.99 price was necessary in a blackout situation. Capital Power recommended that where the price was not set at the cap, price should be set by the dispatched unit with the highest offer in the last available merit order, and commented that this would be consistent with the pricing methodology under limited market operation. Capital Power commented that the other pricing options would not reflect current market fundamentals during a market suspension. Capital Power also stated that market participants should not have to operate at a loss during a market suspension.
3. ENMAX commented that due to unlikelihood of a market suspension event, any of the proposed options would be satisfactory, if not ideal. ENMAX recommended that the AESO should choose a price-setting mechanism that was least complex and reflected a reasonable outcome.
4. IPCAA deemed that all the options are unsatisfactory to various market participants. IPCAA suggested that in a blackout situation, price should be set administratively to cover the operating costs of the generators that produced electricity. In a market suspension due to IT failure or the System Controller having to vacate the control centre, IPCAA suggested using the paper merit order and reconstituting the pool price. IPCAA recognized that there would be some degree of discretion required by the System Controller but the MSA would

able to monitor the after-the-fact pricing calculation. IPCAA deemed all other options unsatisfactory.

5. MEG supported the combined approach option where price is set at the price cap in a blackout or when all available MW are dispatched. For all other circumstances, MEG recommended that price be set by a reference price which was to be calculated as $12.5 \text{ heat rate} * \text{daily AECO gas price}$. MEG saw the following advantages for this option: a) a predictable and transparent pricing mechanism; b) a price based on a functional market and more likely to reflect supply and demand dynamics; c) a price most likely to be greater than or equal to the variable costs of units on the margin; and d) a pricing mechanism that is easy to implement.
6. Suncor supported the combined approach option, as it would provide generators an incentive to supply the market, reducing the duration and impact of any market suspension. Alternatively, Suncor's second choice would be the similar day demand patterns option.
7. TransAlta supported the use of \$999.99 price when all MW are dispatched in the EMMO, but disagreed with a \$999.99 price in the event of a blackout as blackstart capability of a generation depended on the physical conditions of the AIES and not on economics or the EMMO. For blackout as well as other market suspension situations, TransAlta suggested that a 30 day rolling average should be used but would prefer the use of an on peak and off peak 30 day rolling average plus \$4 to account for the DDS/TMR influence on price. TransAlta also added that if any AS services were used during a market suspension, then the AS providers should just be paid the administratively set price. For the reference price option, TransAlta commented that the monthly AS price would not give an accurate reflection of the current day costs, and suggested that a daily gas price be used.
8. TransCanada deemed the combined approach acceptable and recommended that under Option 6.c), a modified price be used, which was to be calculated as "the higher of the TMR Reference Price ($12.5 \text{ heat rate} * \text{Gas Price for the hour}$), and \$125.00". TransCanada deemed that this would provide simplicity, transparency and visibility to market participants during a market suspension event. TransCanada objected to the similar day demand patterns and the 30 day rolling average options as they both proposed to use prior averages to settle the market during as suspension.
9. The UCA suggested that the use of a 30 day rolling average would set a more reasonable administrative price than the current rule and be easy to administer. The UCA also commented that, in a blackout situation, a cost based pricing approach might be more appropriate. However, recognizing that cost based compensation could take time to establish, the UCA proposed that the administrative price could be applied initially, followed by adjustment made after the cost based compensation is determined.

5.6.2 AESO Response/Discussion

Most stakeholders support some variations of a combined approach. The following discussion focuses on three separate scenarios.

1. When all available MW is dispatched, there is general support that energy price should be at \$999.99. The System Controller, if required to balance supply and demand, will invoke the Supply Shortfall procedures. That would be the appropriate trigger for the \$999.99 SMP.

2. After an AIES blackout:

Some stakeholders request more information regarding a blackout. As defined, in a blackout, a major portion or all of the AIES is de-energized. Immediately following an AIES blackout, the System Controller will likely be required to implement the system restoration plan. Contracted blackstart resources will be directed to start and other self starting generations may be able to start up. Start up power is then provided to the big thermal generators and they will be started under the direction of the System Controller. Transmission elements and load will gradually be energized and the AIES will be restored.

Capital Power, IPCAA, TransAlta and the UCA do not agree with the pricing of \$999.99 during an AIES blackout. Alternatively, the price can be set administratively, using the same calculation as for the other market suspension situations (see following sub-section). However, as suggested by a number of stakeholders, all generators should be able to recover their operating costs while generating under a market suspension. Payment to a generator is appropriate to cover any shortfall between the energy receipt and the costs of operation during a market suspension. The AESO considers it reasonable that if a generating asset is directed to start, and is subsequently directed off during a market suspension or dispatched off by the System Controller upon the return to normal market operation, then it should be allowed to recover its start up costs, because it would not have started if it was not directed to do so by System Controller during the restoration of the AIES. For generating assets that are directed to start by the System Controller during the market suspension and continue to run upon the return to normal market operation, the AESO considers the start up costs for those generating assets their normal business costs. For more detailed discussion please see the following section.

Appendix 4 illustrates the process during an AIES blackout.

3. Under all other market suspension situations:

These situations include extended market operation tool outage, SC evacuating the SCC and cannot access the BCC, and the AIES broken into electrical islands.

Stakeholders have many different views regarding the various proposed options in the Discussion Paper. However, most stakeholders seem to

support that the pricing mechanism should be simple, able to provide a transparent price signal, and allow generators to recover their operating costs.

The similar day demand patterns option and the suggested option of price constitution using the last merit order, both require after-the-fact calculations and therefore are not able to provide a transparent pricing signal.

The same day of week and the status quo options are not supported by stakeholders.

The reference price option seems to be simple to implement and can provide a transparent price signal. The AESO agrees with both MEG and TransCanada on the use of the daily gas price rather than the monthly gas price, but does not see the need for a \$125 price floor as recommended by TransCanada.

The 30 day rolling average option also seems to be simple and can provide a transparent price signal. The AESO agrees with the UCA that this would set a more reasonable price than the current rule and be easy to administer. The AESO also agrees with TransAlta's suggestion that using an on peak and an off peak 30 day rolling average will provide further enhancement to the pricing mechanism, resulting in the price being more reflective of the prevailing circumstances. However, the AESO does not believe that it is necessary to add \$4 to the price to account for the DDS/TMR influence on price as the rolling averages would already have taken the DDS/TMR influence into account (if TMR is used, typically DDS would also be used resulting in the pool price being raised).

The AESO, in considering the above analysis, believes that the 30 day rolling average, with on peak and off peak prices, can somewhat represent the market pricing under a recent and similar market situation. This is also an easily implementable solution and requires only minor changes to the currently published 30 day rolling pool price averages. As most stakeholders pointed out, none of the options would be a perfect or ideal solution. However, considering the overarching goals of having a simple solution and being able to provide a price signal, and that market suspension is a rare event, the AESO believes this option presents the most optimal and reasonable solution.

Many stakeholders commented that generators should be able to recover their operating costs. The AESO agrees that, in addition to the pricing mechanism as discussed, there should also be a payment mechanism for market participants to recover any shortfall between the energy receipts and their operating costs while generating during a market suspension. The AESO considers a similar payment mechanism to that allows LLTE generating assets to recover their incremental generating costs be appropriate. The calculation for incremental generating costs, in the case of LLTE, includes the following:

- (i) variable STS charges which is the actual cost of all variable charges from Rate Schedule STS of the ISO Tariff, including the applicable loss factor charge or credit;

- (ii) variable O&M charges;
- (iii) fuel cost to start and run the asset; and
- (iv) other related reasonable costs.

The AESO considers that in the case of market suspension, the provision for the fuel cost to start the asset will only be necessary if a generating asset is directed on by the System Controller during a market suspension and is subsequently directed off by the System Controller during the market suspension. Alternatively, if a generating asset is directed on during a market suspension but subsequently is dispatched off by the System Controller upon the cancellation of the market suspension and return to normal market operation, its start up costs should be covered as well. For those generating assets that are directed to start by the System Controller during a market suspension and subsequently receive a dispatch by the System Controller to continue to run upon the return to normal market operation, the AESO considers the start up costs for these generating assets to be their normal business costs.

5.6.3 AESO Recommendation

The AESO recommends the energy price during a market suspension to be:

- a) 30 day rolling average on peak price and 30 day rolling average off peak price respectively, prior to the market suspension initiation, or
- b) \$999.99 when all available MW are dispatched, and the System Controller has invoked the Supply Shortfall procedures.

The AESO also recommends that a payment mechanism, similar to that for Long Lead Time Energy, be defined to allow a market participant to recover any shortfall between the energy receipts and their operating costs while generating during a market suspension. The exception to the LLTE incremental generation cost calculation when applied in the case of market suspension is that start up costs will only be included for generating assets that are directed to start by the System Controller during a market suspension, and

- a) directed off by the System Controller during the market suspension, or
- b) dispatched off by the System Controller upon the cancellation of the market suspension and return to normal market operation.

5.7 Import during an Energy Market Suspension

In the Discussion Paper the AESO brought up the issue of imports not offering into Alberta due to the lack of price visibility during a market suspension. However, existing emergency assistance energy contracts are in place to allow for the requesting and scheduling of emergency energy from BC and Saskatchewan, as detailed in OPP 807 and OPP 803. During a blackout in Alberta there are also provisions to schedule energy over the tie lines.

5.7.1 Stakeholder Feedback

1. Capital Power submitted that if imports are required to avoid shedding load or to maintain AS OPP 803 and OPP 807 should be followed to request for emergency energy. However, the System Controller should not request emergency energy for any other reasons.
2. ENMAX noted that the procedures for emergency energy assistance must be satisfactory to BCTC and SaskPower and assumed that was the case.
3. IPCCCA asked if the AESO believed that those mechanisms as detailed in OPP 807 and OPP 803 would be sufficient during a market suspension.
4. TransAlta commented that it believes the existing mechanisms were sufficient and emphasized that import during a market suspension should receive the same price as the rest of the market.
5. TransCanada commented that if its price calculation during a market suspension was adopted then this would provide reasonable visibility on pool price to importers (as well as exporters) and should facilitate imports as required.

5.7.2 AESO Response/Discussion

Stakeholders seem to agree that the existing procedures governing the use of emergency energy should be used during a market suspension when the defined conditions, as described in OPP 803 and OPP 807, are met. Otherwise, if those conditions are not met, stakeholders felt that those procedures should not be invoked and import energy should be based on the price signal that would be generated as result of the pricing proposals as described in the above section 5.6.

5.7.3 AESO Recommendation

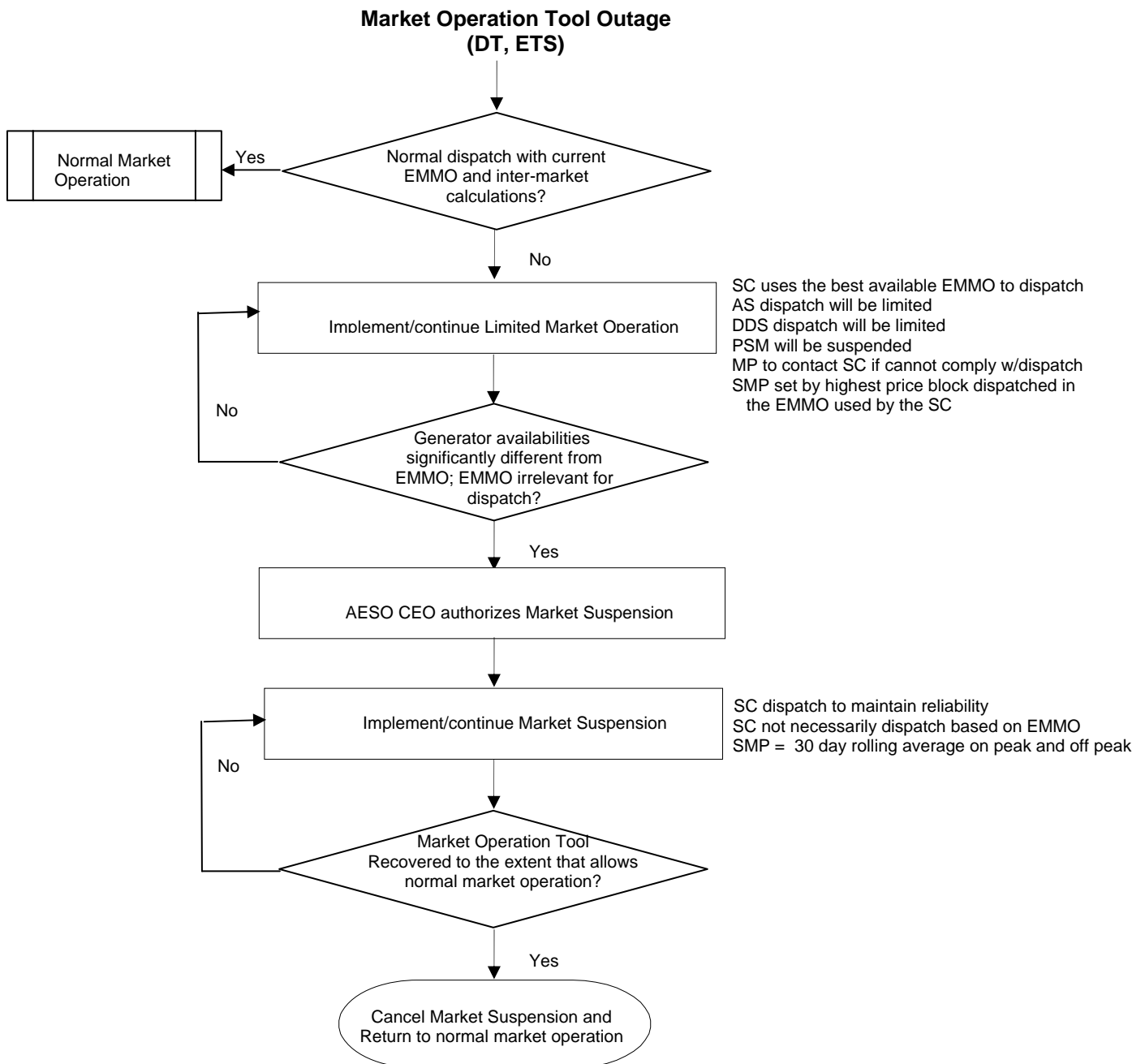
The AESO recommends that OPP 803 and OPP 807, governing the use of emergency energy, be applied in a market suspension if the specified conditions are met. For other import or export transactions, the pricing signal as recommended in section 5.6.3, if adopted, will be able to provide a clear and transparent price signal to marketers.

6. Next Steps

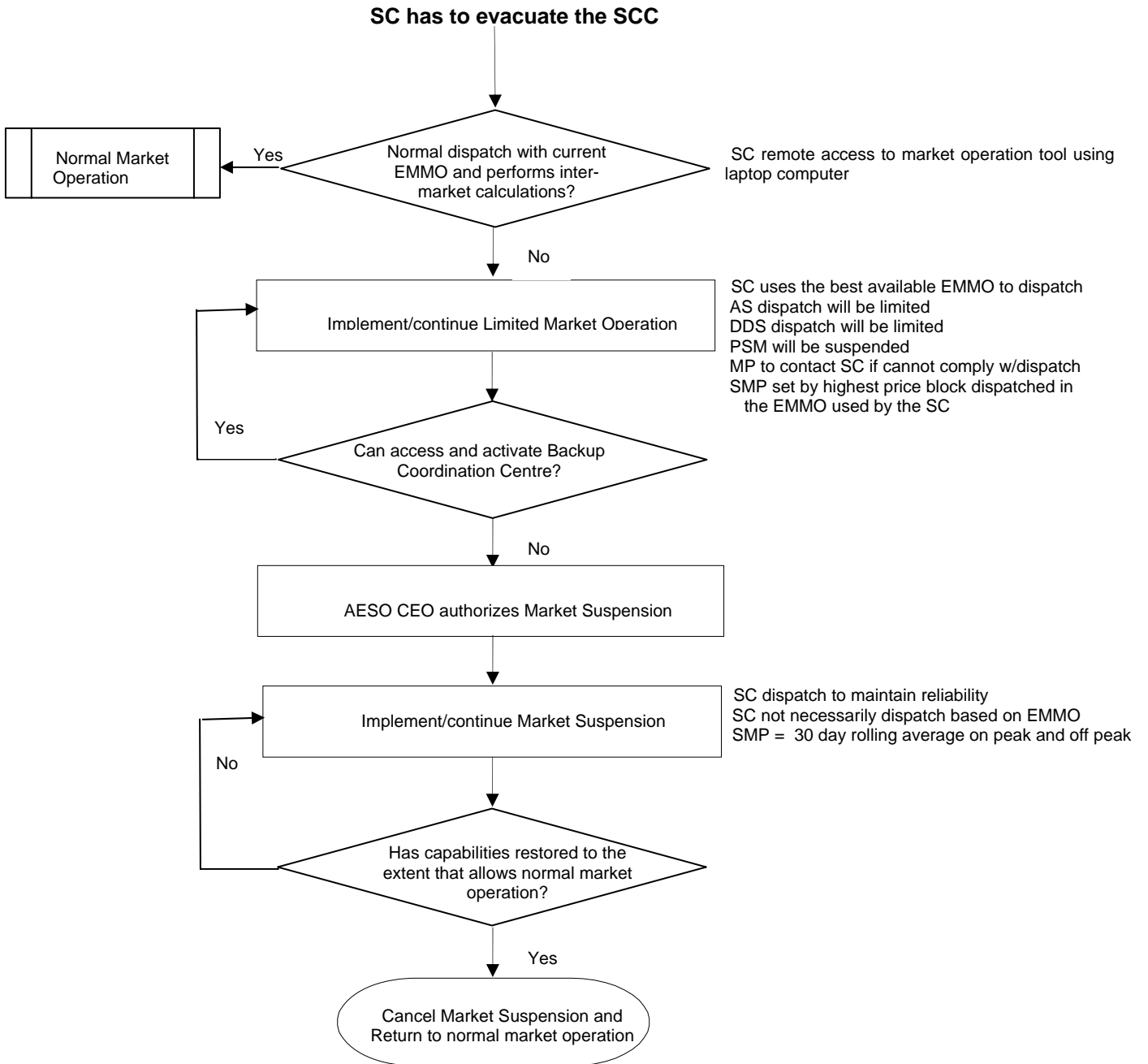
1. Stakeholders are welcome to submit comments on this Recommendation Paper by January 14, 2011.
2. The AESO will post all stakeholder comments on the AESO web site by January 21, 2011.
3. The AESO will post reply to stakeholder comments and will provide further direction on the proposed rule changes in Q1 2011.

7. Appendices

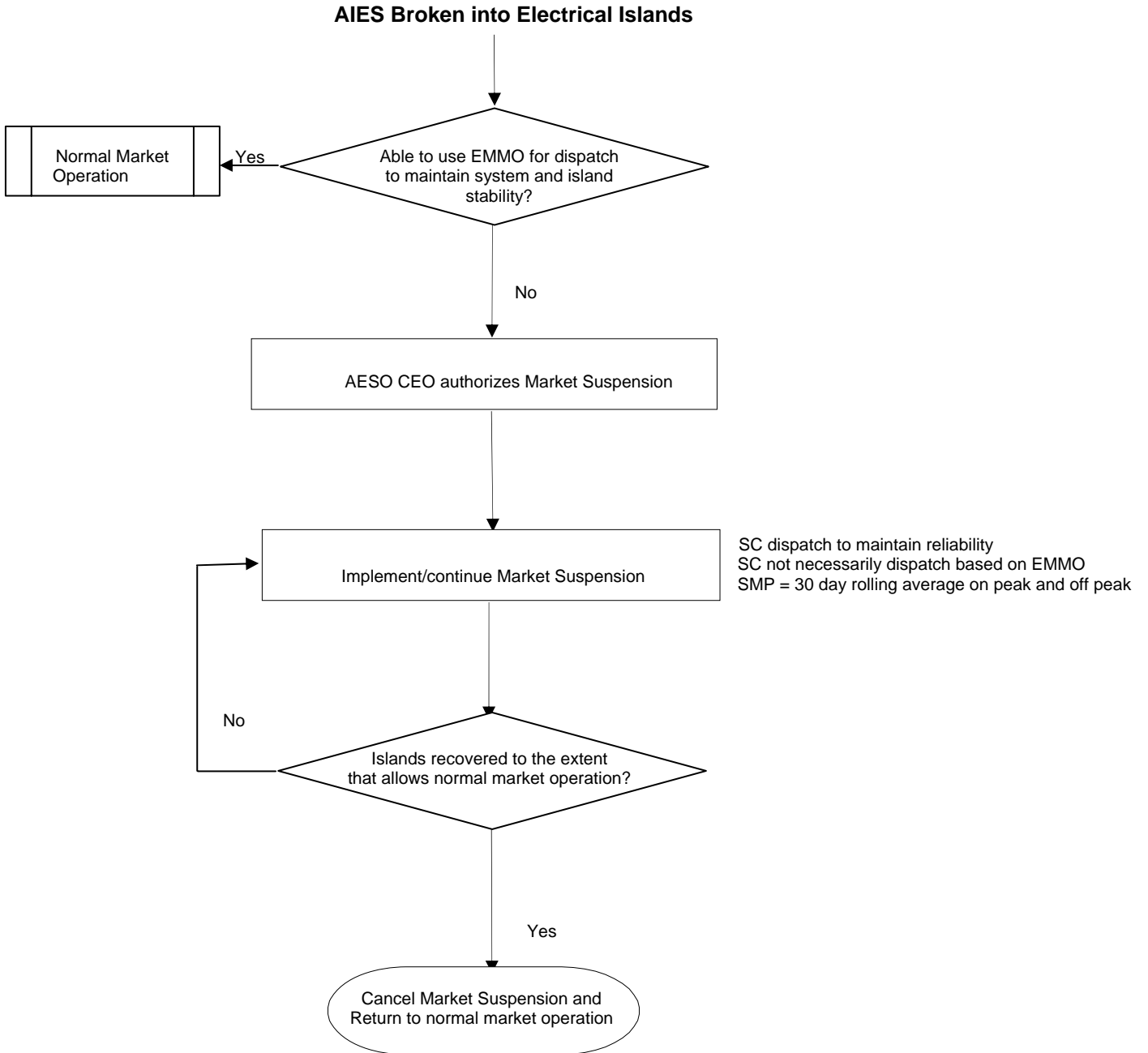
Appendix 1 Process Flow Chart – Market Operation Tool Outage



Appendix 2 Process Flow Chart – SC Evacuate the SCC



Appendix 3 Process Flow Chart – AIES Broken into Islands



Appendix 4 Process Flow Chart – AIES Blackout

