

# NERC Standard Authorization Request Comment Form

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*Note – Please make sure that you have the correct SAR title and NERC number before submitting your comments. When completed, e-mail to: **sarcomm@nerc.com** with “SAR Comments” in the subject line.*

SAR Title	Balance Resources and Demand
SAR ID	BAL_RES_&_DEMND_01_01
Comment Date	March 1, 2002

## SAR Commenter Information

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## Comments

The need for frequency control on the interconnection cannot be minimized. However, this SAR fails to demonstrate how a new measure such as FRM will or can improve frequency control, or if in fact frequent control is the problem. To the contrary, the SAR seems to dwell on ACE, AGC and Inadvertent more than frequency. If the intent is to improve these areas the SAR should be withdrawn and an appropriate submittal made that addresses the real target.

As written, we can see no value to pursuing the measure proposed.

## Responses

BALANCE RESOURCES AND DEMAND  
MAAC Staff Comments

SAR Title	Balance Resources and Demand
SAR ID	BAL_RES_&_DEMND_01_01
Comment Date	February 26, 2002

<b>SAR Commenter Information</b>	
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## Comments

Dear Jim,

The MAAC staff supports your request to create the Balancing Standard.

The MAAC staff also offers the following comments concerning your request:

- Expand the **Purpose of Standard** to retain the original intent of the former Control Performance standard (an objective specifically approved by the then Operating committee) that the basis/objective of a Balancing Standard is to maintain an approved 'frequency profile'. MAAC suggests that the **Purpose of Standard** be rewritten to state:

*Maintain an interconnection's Scheduled frequency **within a pre-defined frequency profile.***

- Modify **Industry Need for Standard** as follows:
  - Delete need to arrest sudden frequency changes
  - Delete need to minimize unscheduled power flows
  - Delete need to minimize Inadvertent Interchange
- Modify **Brief Description of New Standard**
  - Delete Frequency Response Measure
  - Revise Control Measure 2 to be a 60-minute average
  - Delete the procedural requirement for an Automatic Generation Control facility

## Discussion

The following discussion and comments are offered from the perspective of the Board-approved NERC Organization Standards Process Manual and the NERC Reliability Model. Those two documents place a much higher requirement for creating NERC Organization Standards than were used for creating previous NERC policies and standards. Those documents impose the requirement that a NERC standard be 'material to reliability and measurable', 'establish technical or performance requirements that can be practically measured' and be 'enforceable and consistent' and fit within the infrastructure of the evolving industry vis-à-vis the Reliability Model.

The subject SAR is drafted for the appropriate purpose of "maintain(ing) scheduled frequency". But as the **Industry Needs for Standard Section** implies, frequency is a continuum (defined over various time periods) rather than a single parameter. The current Policy 1 CPS recognized this fact by defining its drivers based on an Operating Committee-approved frequency profile (a profile that would be monitored and adjusted as a function of current frequency experiences). By linking the CPS measures to the given profile, CPS was able to define a related/consistent set of short term (1 minute) and longer-term (10 minutes) parameters. Without linking the **Purpose of Standard** to such a profile, the standard is opened up to unrelated measures, measures that cannot be simply related to each other. The list of **Industry Needs for Standard** proves that point.

Item 1 of the list addresses a need that does not exist. There is no indication of a reliability problem being created by frequency response characteristics less than 1 minute. Indeed the Resources Subcommittee has debated the issue of its Disturbance Standard just because there was an issue of precision in defining when an incident

started and when response was effected. If one cannot precisely define when an event occurred (in relation to other entities' measuring devices) than one can extrapolate that fact to state that creating a mandatory measure for such a condition is inappropriate. Also without linking the measure to CPM1 and CPM2 the measure lacks the consistency desired of Organization Standards.

Item 3 creates a problem because it does not recognize the defined role of Balancing. Item 3 address a need that falls under a standard for Operating Limits violations. Under the Reliability Model, the Balancing Authority has no information regarding transmission line flows (other than the Net values). To include a measure on balancing that address an operating limit violation (as suggested by Item 3) is not in keeping with the Reliability Model structure. It is not in keeping with creating unambiguous standards (i.e. that don't fall into the area of other standards). It cannot be technically justified within the constructs of balancing ( i.e. there is no one-to-one correlation between ACE and transmission overloads. Large ACE may indeed help an overload.) Transmission reliability is the responsibility of the Reliability Authority functions.

Item 4, Inadvertent Interchange, is not a reliability concern. Inadvertent Interchange may be costly, and make some operators unhappy but it is not a reliability issue. The Markets are addressing this issue. Those markets are slowly evolving but they are evolving. Inadvertent Interchange is not a frequency related problem and therefore does not belong within this standard (at least as it is proposed).

#### Arrest Sudden Frequency changes:

The Frequency Response Measure proposal for a measure that applies to short-term (less than 1-minute) frequency deviations is unnecessary, impractical and most likely will be ineffective.

1. The measure is unnecessary because, for example, in the Eastern Interconnection no load shedding occurs before deviations of  $-170$  mHz nor overspeed trippings before  $+1000$ mHz (EPRI study on Impacts of Governor Response) but no single event has even exceeded 90mHz.
2. The measure is impractical because it can only be effectively measured during large frequency deviations. The relatively small number of events will invalidate the results of the measure unless of course the measurements are taken continuously (which is conceivably possible but totally unnecessary). Further, the short event horizon (i.e. the time of the problem) will place the accuracy of the measuring devices under severe strain particularly as they relate to:
  - when to begin the measurement (frequency 'spikes' are often humps; and time is of course 'relative' to the system);
  - when the response is said to have completed;
  - impacts of sample rates (sampled handoffs among interconnected entities causes data skewing); and
  - impacts of load changes. Over longer measuring periods the load effects are mitigated, but within the time period of less than one minute, the concerns are more valid.
3. The measure will be ineffective as part of the Balancing standard because there is little or nothing that can be done to change the situation. Generator response to frequency is a function of the governor response. The actual response of a given prime mover is dependent on its loading and other dynamic factors. If frequency response is needed within a local area or within a given interconnection, then the Reliability authorities (i.e. the Regional Councils, RTO's, ...) should develop special protection plans. Many people contend that most of the

response is provided by the load itself and not by the resources under the control of the Balancing Authority. Let the Markets decide how to pay for this type of frequency response.

4. The concept of constraining control, based on frequency goes against the entire premise of the Control Performance theory used in the current Control Performance Standards. Those standards were predicated on allowing more and more variability over the shorter and shorter time periods. The reason that approach was taken was that it was recognized that little if anything can be consciously accomplished over those time periods. The real control came over tightening the margins over longer and longer time periods.

As a general standard *Arresting sudden Frequency changes* is unnecessary.

Regarding arresting frequency decay, what many, if not most people can agree to is that “active governors” are important. Rather than imposing a Frequency Response measure, *it is may be more appropriate that a Governor installation requirement (where permitted by local regulations) be made as part of the Certification Requirements for a Generator.* This would mean that each Reliability Council or Reliability Authority would be required to include a governor requirement on each of the resources that interconnect with it. The rationale for this certification requirement would not be for real-time frequency concerns as much as it would be for restarting an islanded area of an interconnection. This proposal may be better suited for the Blackstart SAR than for this Balancing SAR.

#### Control Performance Measure 2

The brief description in the proposed SAR notes that CPM2 “...helps minimize power flows that can cause transmission operating limit violations.” The history of the Control Performance Standard is that it was based on maintaining a given frequency profile. There was no interest in improving the profile but neither was there a desire to degrade that profile. To ensure that the integrity of the profile was maintained at least two measurement times were needed. CPS1 uses an annual one-minute averaging period while CPS2 uses a monthly ten-minute period. The original theory was predicated on a one-minute and a sixty-minute averaging period. The ten-minute period was introduced as a way of controlling tie flows.

Under the Reliability Model the Balancing Authority does not necessarily have access to individual tie flow data (BA must of course have the basic Net Tie flow value). Therefore, making a Balancing standard that incorporates the concept of transmission line flow mitigation is inconsistent with the structure of the pending SARs. An ad hoc SAR will focus on Operating Limit violations. However to be in keeping with the Reliability Model, the Balancing obligation should only focus on measuring the performance of those performing the Balancing function.

The reintroduction of a 60-minute averaging measure will improve consistency between the control measures. It will also lend itself to help identify measuring errors between the measuring meters and the billing meters.

#### Procedural Requirements

The SAR proposes that “Each Balancing Authority shall have the necessary AGC facilities ... to calculate an area control error.” Under the new Organization Standards NERC would focus on WHAT not HOW. Why then should there be a requirement for an Automatic Generation Control facility. There is no question that an Area control error calculator is needed. What justification is there for requiring an AGC facility? Most likely an AGC system will be used – but there is no reason to mandate such a system.

Cordially,  
AI

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SAR Title	Balance Resources and Demand
SAR ID	BAL_RES_&_DEMND_01_01
Comment Date	March 7, 2002

SAR Commenter Information	
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### Comments

Frequency Response Measure (FRM) addresses Interconnected System's Primary Frequency Control, which is generally achieved by Load response to change in frequency, and in addition, for large disturbances by speed governors of generating units. Both responses are from all the loads and responding generators in the entire interconnection. The responses are difficult to measure except on an aggregate basis. (Most nuclear units, units on sliding pressure operation, many of the units under plant computer control and units that are at maximum output do not participate.) Besides, the responses are not same at all times.

Since the response capabilities are under the control of loads and/or generators, and are very difficult to measure except on an interconnection wide aggregate basis, we feel that, though it would be nice to have FRM, it would be difficult to write a requirement that is measurable and equitable, especially one applicable to a Balancing Authority.

Responses

Note – This is a special mailing. We are trying to solicit your viewpoints on the 1<sup>st</sup> SAR which is posted for comment. You can review the SAR on the NERC Web Site.

Email this form before April 2, 2002 to: [sarcomm@nerc.com](mailto:sarcomm@nerc.com) with “SAR Comments” in the subject line.

If you have questions, please call Maureen Long at 615-646-4431 or send a question to [spm@nerc.com](mailto:spm@nerc.com).

## NERC Standard Authorization Request Comment Form

SAR Title: Balancing Resources and Loads
SAR ID: BAL_RES_&_DEMND_01_01
Comment Date

<b>SAR Commenter Information</b>	
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Should there be a NERC Organization Standard that addresses Balancing Resources and Loads? X Yes  No
If you do think there should be a NERC Organization that addresses Balancing Resources and Loads, what do you think about the scope of the posted SAR? X I think the scope of the SAR is fine as it is  I think the scope of the SAR should be expanded to include:  I think the scope of the SAR should be reduced to eliminate:  Other comments:

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SAR Title	Balance Resources and Demand
SAR ID	BAL_RES_&_DEMND_01_01
Comment Date	April 1, 2002

SAR Commenter Information	
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## Comments

A standard for balancing resources and demand in the operating time horizons described in the SAR is necessary for bulk electric system reliability. The proposed standard addresses the need for each Balancing Area to balance its resources and demand, including scheduled interchange, with the rest of the interconnection so as to a) maintain a stable interconnection frequency, b) maintain scheduled frequency within an acceptable band, c) minimize unscheduled uses of energy, and d) minimize unscheduled uses of the interconnection.

NERC's IOS work, summarized in the IOS Reference Document in the NERC Operating Manual, has been substantive in identifying the minimum necessary components of resource and demand balancing. Addressing more than simply the need to balance energy, the IOS work stresses the importance of responsive balancing capabilities and controls in specific time horizons necessary to achieve effective control performance. Four balancing IOS, namely Regulation, Load Following, Contingency Reserve, and Frequency Response, are considered by the IOS Subcommittee to be the fundamental building blocks for the balancing aspects of reliable bulk electric system operation. The IOS Subcommittee recommends that the drafting of the proposed standard consider the IOS Reference Document and that IOS expertise be considered an essential competency of the standard drafting team.

The SAR proposes that the standard would apply to the Balancing Authority but not address the role of generators, loads, and others in balancing. The SAR implicitly assumes that the roles of others will be addressed through contracts. While the IOS Subcommittee does not necessarily disagree with this assumption (no consensus has been reached either way), there is a need to further explore the potential applicability of aspects of the proposed standard to others. The reliability principles (not checked in the SAR) that may apply include the need for information from balancing resources and loads (Reliability Principle 3) and the need for communications facilities necessary for the monitoring and control of the balancing function (Reliability Principle 5). This issue requires further debate and may serve as a critical precedent for the scope of other Organization Standards.

The current Operating Policy 1 includes a requirement that all electrical facilities connected to an Interconnection be within the metered boundaries of a control area. It appears that this would be a minimum requirement also in the new standard related to a balancing area. The Policy 1 requirement is:

"All load, generation, and transmission operating in an Interconnection must be included within the metered boundaries of a Control Area."

There should be a single set of standards for balancing of resources and demand. The numerical criteria for determining the amount of balancing responsiveness that is needed may vary depending on the reliability need of each interconnection, but must be standard within an interconnection.

The proposed standard should not adopt the easier approach of simply relying on historical values of control performance criteria. Control performance criteria should be supported by a demonstrable reliability need.

The proposed standard and associated measures and criteria should not be any more restrictive than is necessary for a reliable bulk electric system. Market mechanisms for the provision of balancing IOS should not be unnecessarily constrained. Market design is evolving rapidly, including for example, the ability to provide real time balancing services through bid-based mechanisms.

Typographical edits:

Industry Need for Standard

"Load-resource balancing" should be consistent with title, "resource and demand balancing".

"Generation failure" should be "unplanned loss of generation".

Brief Description of Standard

"Load-Resource Balance Standard" should read "Balance Resources and Demand Standard".

1. FRM - "only arrest's' the frequency change"

Procedural Requirements - "shallhave" should be "shall have"

"as defined by 'the' four measures."

Responses

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If you have questions, please call Maureen Long at 615-646-4431 or send a question to [spm@nerc.com](mailto:spm@nerc.com).

## NERC Standard Authorization Request Comment Form

SAR Title: Balancing Resources and Loads
SAR ID: BAL_RES_&_DEMND_01_01
Comment Date 4-1-02

<b>SAR Commenter Information</b>	
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Should there be a NERC Organization Standard that addresses Balancing Resources and Loads? x Yes  No
If you do think there should be a NERC Organization that addresses Balancing Resources and Loads, what do you think about the scope of the posted SAR?  I think the scope of the SAR is fine as it is  x I think the scope of the SAR should be expanded to include: RTOs  I think the scope of the SAR should be reduced to eliminate:  Other comments:

Note – This is a special mailing. We are trying to solicit your viewpoints on the 1<sup>st</sup> SAR which is posted for comment. You can review the SAR on the NERC Web Site.

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## NERC Standard Authorization Request Comment Form

SAR Title: Balancing Resources and Loads
SAR ID: BAL_RES_&_DEMND_01_01
Comment Date

<b>SAR Commenter Information</b>			
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e-mail	Robert.smith@aps.com		

Should there be a NERC Organization Standard that addresses Balancing Resources and Loads? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
If you do think there should be a NERC Organization that addresses Balancing Resources and Loads, what do you think about the scope of the posted SAR? <input checked="" type="checkbox"/> I think the scope of the SAR is fine as it is <input type="checkbox"/> I think the scope of the SAR should be expanded to include: <input type="checkbox"/> I think the scope of the SAR should be reduced to eliminate:  Other comments:

Note – This is a special mailing. We are trying to solicit your viewpoints on the 1<sup>st</sup> SAR which is posted for comment. You can review the SAR on the NERC Web Site.

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If you have questions, please call Maureen Long at 615-646-4431 or send a question to [spm@nerc.com](mailto:spm@nerc.com).

## NERC Standard Authorization Request Comment Form

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SAR Title: Balancing Resources and Loads
SAR ID: BAL_RES_&_DEMND_01_01
Comment Date March 29, 2002

SAR Commenter Information			
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e-mail	jldison@southernco.com		

Should there be a NERC Organization Standard that addresses Balancing Resources and Loads?

Yes

No

If you do think there should be a NERC Organization that addresses Balancing Resources and Loads, what do you think about the scope of the posted SAR?

I think the scope of the SAR is fine as it is

I think the scope of the SAR should be expanded to include:

I think the scope of the SAR should be reduced to eliminate: See Notes Below

Other comments: Based upon the description of this SAR, it appears that **specific, absolute requirements for each of the stated measures will be determined as part of this process. However, there are significant commercial implications to several, if not all, of the 4 proposed measures. Inappropriately restrictive requirements could therefore have significant commercial ramifications. For example, restrictions associated with CPM1 and CPM2 have commercial impacts, and failure to comply with CPM1 and CPM2 should result in significant financial implications. As markets develop, these financial implications will be determined as a result of commercial business practices. However, this SAR should focus on the reliability implications of resource and demand balancing, not the commercial implications. As such, the scope of this SAR should be re-evaluated to ensure that only the pure reliability aspects of resource and demand balancing are being addressed. That may, in fact, result in a completely different set of measures than the ones listed in this SAR. For instance, the CPM1 and CPM2 measures might more appropriately be developed as a result of business practices standards rather than reliability standards. Instead, a more specific reliability measure might require that ACE violations adhere to the commercial measure to the extent they do not violate specified OSL - at which time other reliability measures come into play. Therefore, where necessary, the SAR should be re-written to require development of the standard from a reliability-only perspective. At the same time, this SAR should probably include a complementary request to the appropriate commercial standards body for the development of the commercial business practices aspects of the standard. Note: it should be recognized that the commercial business practices standards body is in the process of being developed. To the extent the reliability SAR requires the existence of the commercial standard as a basis for the reliability standard, it would probably be appropriate for the standard to specify temporary commercial standards that would apply until the commercial business practices standards body addressed this issue from their perspective.**

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SAR Title	Balance Resources and Demand
SAR ID	BAL_RES_& DEMND_01_01
Comment Date	March 18, 2002

SAR Commenter Information	
Name	Howard F. Illian
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## Comments

Energy Mark supports the concept of having a standard that bounds the Resource-Demand imbalances that can occur on the interconnection as a necessary part of maintaining interconnection reliability. However, the content of the new standard proposed in the SAR only seeks to impose standards similar to those that have been used in the past. It does not consider the needs of the future restructured electric industry and how those needs will differ from current methods and policy.

Energy Mark suggests that the electric industry in North-America is on a one-way street leading to the implementation of a market driven industry. As this transition is made to effective electric markets, the old ways that worked for the Vertically Integrated Utilities functioning under cost plus regulation will no longer achieve the desired goals of the industry. The new world will require the integration of reliability into the markets so that the markets can internalize both the costs and the benefits of maintaining reliability. Among the old ways that will not survive the transition to markets are "Command and Control" methods used to maintain reliability and the significant socialization of cost incurred in the name of reliability. Industry designs that depend on these methods will only be transitional since the market response to designs based on these concepts will eventually force changes. These are the very forces that have driven the implementation of transmission pricing models, whether they be locational, zonal or flow-gate in nature. These same market forces will drive the development of Resource-Demand Balance pricing models also.

The suggested content of the SAR includes four parts. The SAR supports the need for each of these parts. Each of these parts is discussed in the context of the new NERC Reliability Model and its implementation in a market environment.

### Frequency Response Measure:

Frequency Response is properly included with a Resource-Demand Balancing Standard because it is Frequency Response that performs most of the balancing required to maintain the reliability of the interconnection. When an imbalance between Resources and Demand occurs, Frequency Response rebalances Resources with Demand before any other action can be taken with any other Reliability Services, Regulation or Reserve. Interconnection reliability can be maintained with sufficient Frequency Response alone. In general, the other Reliability Services are used to restore frequency to schedule. Frequency Response also rebalances Resource and Demand as those services create imbalances in the opposite direction as the frequency error. The issue is not whether a minimum amount of Frequency Response is required, but how can it be effectively measured and how responsibility for supplying it can be assigned.

Some have suggested that it is adequate to measure only for Frequency Response at the time Resources or Demand are initially connected to the interconnection under the assumption that, if Frequency Response is available when the party connects, Frequency Response will be available when needed for later responses to system disturbances. It is naïve to assume that Frequency Response demonstrated at the time of connection will be available when needed without any confirming measurement. Frequency Response can only be assured if it is continuously measured as a part of the Resource-Demand Balancing Standard.

There is an additional problem associated with requiring Frequency Response to be supplied as part of generator interconnection requirements. When Frequency Response responsibility is assigned in this manner, the relationship between the cause for needing Frequency Response and the responsibility to supply Frequency Response is lost. When responsibilities for supply are assigned without consideration of determining the cause for needing to assign that responsibility, the costs end up being socialized across the interconnection

and are paid on an arbitrary basis by the suppliers. This socialization will eventually result in attempts to avoid the arbitrary assignment of the Frequency Control responsibility and result in insufficient Frequency Response to support reliability. Fortunately, the implementation of Control Performance Measure 1 may provide an alternative to both the measurement problem and the socialization problem while simplifying the total standard.

#### Control Performance Measure 1:

Control Performance Measure 1, based on the one-minute average frequency error of the interconnection, is the only measure that has been technically justified as directly supporting interconnection reliability as affected by frequency error. Review of the information included in this standard, implemented in CPS1, is important in understanding why it is appropriate and how it might be modified to improve its support of reliable operations.

The selection of the one-minute measurement interval is appropriate because it is a good balance between the interval required to cause interconnection failure due to frequency error and an interval that can be used for practical measurement universally across the interconnection.

Interconnection failure due to interconnection frequency error would occur due to the automatic tripping of generators that are protected from damage by automatic frequency relays. The limits for these protection schemes range from instantaneous operation to operation after several seconds of off-schedule frequency. The closer the average frequency error measurement interval is to the failure mode interval, the more accurately the measurement will be able to bound the proper frequency experience. Longer measures are not appropriate for managing failure due to frequency error, because as the measurement interval increases, the increased risk of significant changes in covariance between the measurement interval and the failure interval will reduce the effectiveness of the measure as these intervals diverge. Although measurement intervals shorter than one-minute would be better, because they would be closer to the failure interval, they tend to become impractical because the telemetry measurement intervals of the control areas vary from control area to control area. This requires the selection of an interval that all control areas can match with their differing telemetry polling and ACE calculation intervals. A one-minute interval is a good compromise.

The numerator of the CPS1 inequality measures the correlation between the tie-line error as adjusted by frequency bias (ACE) and the interconnection frequency error. In essence this measure captures each Balancing Authorities contribution to interconnection frequency error. The denominator of the CPS1 inequality distributes the responsibility for the measured frequency error in proportion to the Frequency Bias of the Balancing Authorities. Finally, the epsilon on the right hand side of the inequality sets a limit for the ratio of the contribution to the frequency error as compared to the Frequency Response that the Balancing Authority provides to limit the frequency error for a given imbalance. When all Balancing Authorities meet this inequality, the dispersion of the interconnection error will be bounded by the epsilon value.

An alternative view of the CPS1 inequality could equate the numerator to the Secondary Frequency Control supplied by the Balancing Authority, the denominator to the Primary Frequency Control supplied by the Balancing Authority and the epsilon to the frequency error profile limit. This makes sense because applying additional Primary Frequency Control, increasing the denominator of the inequality, would improve control performance by reducing the magnitude of the frequency error that a given imbalance would cause on the interconnection. Applying additional Secondary Frequency Control, reducing the magnitude of the numerator of the inequality, would also improve control performance by reducing the imbalance and the tie-line error resulting from the imbalance. This view of the one-minute measure demonstrates that it not only includes Secondary Frequency Control but also includes Primary Frequency

## Control, Frequency Response.

If the measure of Frequency Response was included within the Control Performance Measure 1 using the same one minute data that is used for measuring the Secondary Frequency Control contribution of the Balancing Authority, the new measure would eliminate the need for a separate Frequency Response Measure because the Frequency Response Measure would be included in the Control Performance Measure. This form of measure would also resolve the problem of how to assign responsibility for Frequency Response without socializing that responsibility. The amount of Primary Frequency Control, Frequency Response, and Secondary Frequency Control, Regulation and Reserve, would be determined jointly using a single control performance measure that would bound the desired frequency distribution.

Instead of having two separate measures to bound the frequency error distribution, a single measure, using the same data that has been used for CPS1, would assure the proper balance between Primary Frequency Control and Secondary Frequency Control.

### Other Measurement Intervals:

In many cases, the metering and measurement technologies are unable to support the one-minute interval required by Control Performance Measure 1. In those cases, alternative measurement intervals can be implemented to determine how participants have met their responsibilities for frequency control using the techniques offered by the JIITF Draft Report. These methodologies are incapable of bounding interconnection frequency error, and are, therefore, only a supplement to the basic measurements that bound interconnection frequency. They are, however, the best method of determining relative contributions to interconnection frequency control when the desired interval measurements are not available or there are other reasons that CPM1 intervals are not the best choice to determine relative contributions.

### Control Performance Measure 2:

Control Performance Measure 2 is only a transitional measure that should be discarded as soon as specific requirements are met. The new NERC Reliability Model assigns responsibility for managing transmission congestion to the Reliability Authority, not the Balancing Authority. Since this is the case this measure would only be required until the transition to the new Reliability Model has been completed and all of the control areas on an interconnection have developed specific methods to manage transmission constraints. The justification of the measure is to limit the unexpected flows within other Control Areas. Once all of the Control Areas have made the transition to the new reliability model and have resolved the seams issues, there will no longer be a need for the Resource and Demand Balancing Standard to address transmission flows.

### Disturbance Control Measure

The Disturbance Control Measure limits the duration of significant frequency error resulting from disturbances. It can be demonstrated that there is no difference in the probability of interconnection failure from six time disbursed ten-minute error intervals or one sixty-minute error interval. Therefore, from a frequency error risk viewpoint, there is no justification for a separate Disturbance Control Measure as long as there is an adequate measure to bound the frequency error distribution, such as Control Performance Measure 1. There is however, under the current NERC Control Area model, a risk to the transmission system due to unexpected tie-line flows that could result from an extended frequency error. Therefore, the same conclusions can be drawn about the need for the Disturbance Control Measure as were stated about Control Performance Measure 2. The Disturbance Control Measure should

be considered a transitional measure that can be discarded as soon as all Control Areas have completed the transition to the new NERC Reliability Model.

Summary of Recommendations:

The Frequency Control Measure and Control Performance Measure 1 can be combined into a single measure that provides the individual benefits of the two individual measures and assigns the responsibility for control to those that cause the need for that control without socializing the assignment of that responsibility. This measure would be applied to Balancing Authorities.

The Control Performance Measure 2 and the Disturbance Control Measure are only required as transitional measures until the new NERC Reliability Model has been implemented interconnection wide and transmission reliability and constraint management has been assigned and implemented using the new technologies recently developed for market implementation.

In those cases where metering and measurement capabilities do not conform to the desired criteria, there are options available that enable measurements using non-conforming intervals to evaluate the information that is available.

Finally, the simplification of the standard to a single measure will allow its integration into the newly developing markets. By integrating the measure into the markets, the costs of maintaining frequency reliability can be seamlessly intergrated into the markets and the natural conflict between reliability and economics can be eliminated.

Responses

NPCC Response to the Standard Authorization Request for Balance  
Resources and Demand

The Northeast Power Coordinating Council acknowledges that the need for the constant balance between electric resources and demand is the single most fundamental core reliability principle in electric operations and, accordingly, fully endorses the Standard Authorization Request, "Balance Resources and Demand," posted on January 28, 2002. However, item three in the "Industry Need for Standard" states:

**"Minimize unscheduled power flows within the Interconnection that can cause operating limit violations."**

The NPCC believes that the reliability objectives of the SAR must be realized through reliability standards mandating good system control. While it is agreed that inadvertent power flow in day-to-day operations is to be minimized, it is felt that its presence is symptomatic of poor regulation and should not be the focus of a reliability standard. Most importantly, the accounting and resolution of inadvertent power is inherently a commercial issue and should not come under the purview of a reliability standard. This understanding is further reinforced by the recent decision of the NERC Board of Trustees committing NERC to solely pursue reliability initiatives. Nevertheless, the Joint Inadvertent Interchange Task Force is currently proposing potential NERC approaches to the settlement of inadvertent interchange through its draft white paper, "Recommendations for the Wholesale Electric Industry of North America: Inadvertent Interchange." One questions the direction the white paper suggests in light of the BOT decision.

Further, the following technical observations must be offered with respect to the concepts being considered by the JIITF to resolve inadvertent settlement:

1. A fundamental goal of the executive summary states:

**“The proposed solutions attempt to appropriately hold accountable those Balancing Authorities exhibiting poor control practices and recognize those exhibiting good control practices.”**

While the NPCC agrees with that goal, the proposed solution does not seem to meet that goal appropriately. The NPCC has a fundamental disagreement with the effective definition of good and poor control that results from the proposed metric. The proposed inadvertent metric defines good inadvertent as any inadvertent in any magnitude, no matter how large, that tends to correct frequency. Bad inadvertent, no matter how small, is any inadvertent that tends to push frequency away from schedule. The metric does not provide for any tolerance level for bad inadvertent, and it will not recognize excessive inadvertent that happens to assist frequency while affecting transmission line loading interests adversely.

2. While three metrics are proposed, the only substantive proposal is the frequency control component, with the other concepts serving as merely placeholders for future work to be done that is not addressed adequately by the frequency component. The frequency control component is defined as the product of frequency error and hourly inadvertent, but there is no tolerance level to address the practical realities of control. Two examples demonstrate this weakness:

If the frequency is slightly low and the control area should have had a +1 MWH inadvertent if it met its frequency bias obligation exactly, but it had instead a –1 MWH inadvertent, this -1 MWH of inadvertent would result in a penalty. And yet the control area may have a CPS2 limit that allows for +/- 100 MW of error, and its CPS1 score may be well above the CPS1 allowance. Being off by only 2 MWH for a large control area at the end of an hour is very fine control by any reasonable evaluation for a typical control area.

As a second example, suppose the frequency was very low and meeting the frequency bias obligation exactly would have resulted in a +51 MWH of inadvertent. But the control area had a +1 MWH of inadvertent, and it came up 50 MWH short of

meeting its obligation. While this might be considered poor control, this metric would assign a reward for that 1 MWH of positive inadvertent. This behavior of the metric violates the first requirement from the Operating Committee: “The proposed standard addressing frequency control contribution will not preclude a Balancing Authority from experiencing reasonable variations in generation control”.

However, the examples noted above would, at times, result in a penalty for good control and reward poor control because of the implicit working definition that good control is defined merely as being out of phase with frequency. Further, practical limits such as metering accuracy are not considered.

3. The adoption of the CPS1 and CPS2 standards, supplanting the previous A1 and A2 criteria, have permitted reduced regulating burdens and overcontrol of the system. But a continuous metric without a tolerance may force control areas once again into tighter control, potentially leading the control area to continually guess the frequency and accordingly make the resultant inadvertent be in the right direction. Could this force a reliability organization, the balancing authority, which is not supposed to be a market player, into being an active participant in a specialty market that can impact the results of an energy market, since inadvertent ultimately is energy, or the lack of energy?
4. The issue of comparable treatment of the control area inadvertent and energy imbalance by non-control area entities is not addressed adequately. The metric, if applied to a non-control area entity, will make their compliance frequency dependent, while they have no responsibility to perform, nor authority to attempt, frequency maintenance.
5. The Market Interface Principle 2 on page 10 states:

**“Market Interface Principle 2 – An Organization Standard shall not give any market participant an unfair competitive advantage.”**

**{This the heart of the comparability issue. By separating the reliability component (frequency) from the commodity component (energy), the JIITF proposal has leveled the playing field.}**

There is no basis for this statement. In fact, a new requirement is being proposed for the control area. There is no supporting evidence that the application of the new metric would be comparable to the 1.5% energy imbalance penalty. Will the metric, if only applied to control areas, in fact put control areas at a competitive disadvantage?

6. The metric does not make any corrections for schedule ramping, which could result in changing the sign of the error and change a control area from a rewarded to a penalized control area.
7. In Attachment 2, bilateral payback is an intentional cause of inadvertent. When agreed to, the parties involved do not know the sign of the frequency. When a bilateral payback is in place, inherently one control area will be in phase and the other out of phase with frequency. Without any adjustments to the metric, there could be a major disincentive to perform bilateral payback.
8. In attachment 4, equations 2 and 3, the price is shown as related to the square of the frequency error. On the one hand, it seems to send the proper market signals. On the other hand, a small meter error, schedule ramping, or a bilateral payback could cause a change in direction from being out of phase to being in phase with frequency without the knowledge of the operator. A combination of low frequency and the use of its square, and a high energy market price could have a major financial impact for what is a small deviation that ends up being in phase with frequency. The financial exposure needs to be considered.
9. Without a deadband for the application of inadvertent penalties, virtually all control areas will essentially be paying or being paid for inadvertent energy. Inevitably, approximately one-half of all control areas will become net payers in any given month. With

a sensible deadband, control areas would be able to avoid paying in most hours if they are good performers, and they may receive some rewards if others were coincidentally bad performers in those hours. While the deadband-free metric proposed by the JIITF can be refined to be workable, the NPCC questions the wisdom of thrusting all balancing authorities into a competitive environment with other balancing authorities. Balancing authorities would need to develop a method to pay for their inadvertent debt, and to find a method of distributing the fund.

10. The CPS1 Standard is supposed to deal with the frequency maintenance issue at a one minute resolution. Having an inadvertent standard also try to maintain frequency may be redundant, and the results may not always truly reflect what transpired within an hour. For example, if the hourly average frequency ends up a bit high at the end of an hour, and the inadvertent of the control area is negative, it would appear to be helping frequency. It is possible, however, to have an hour where the frequency was quite low in the first half of the hour, but high in its second half by a greater amount. If the control area undergenerated during the first half of the hour while the frequency was low, and overgenerated in the second half while it was high, it could result in poor CPS1 performance for that hour, yet be seen as helping frequency from an inadvertent perspective. If there are problems with CPS1 (a running annual measurement is one of the obvious problems-too long a sampling interval), they should be addressed in the context of CPS.
11. The inadvertent standard proposed will be difficult to implement for energy exchanges across HVDC lines. Which control area's frequency will be used in the measurement? The selling control area has no mechanism to respond to the frequency in its neighboring interconnection, and it probably is unaware of the prevailing frequency in the control area into which it is selling. Its responsibility is to stay reasonably close to schedule, and not to provide frequency support for a neighboring interconnection.

Note – This is a special mailing. We are trying to solicit your viewpoints on the 1<sup>st</sup> SAR which is posted for comment. You can review the SAR on the NERC Web Site.

Email this form before April 2, 2002 to: [sarcomm@nerc.com](mailto:sarcomm@nerc.com) with “SAR Comments” in the subject line.

If you have questions, please call Maureen Long at 615-646-4431 or send a question to [spm@nerc.com](mailto:spm@nerc.com).

## NERC Standard Authorization Request Comment Form

SAR Title: Balancing Resources and Loads
SAR ID: BAL_RES_&_DEMND_01_01
Comment Date April 1, 2002

<b>SAR Commenter Information</b>	
Name	Brian Tierney
Company	American Electric Power
Telephone (614) 324 4524	Fax (614) 324 6899
e-mail	bxtierney@aep.com

Should there be a NERC Organization Standard that addresses Balancing Resources and Loads?

Yes

**XXXX No**

Currently NERC Operating Policy provides a mechanism for dealing with load and generation balancing (CPS1, CPS2, and DCS). While we believe that as markets are implemented these policies must reflect the new operating environment, we do not believe that there is any urgent need to do so at this time. We also believe that outcomes from current FERC work programs on “Standard Market Design” and on “Slice and Dice” will have material effects on how these policies ought to be updated and implemented. To instigate a change now is premature and potentially costly.

If you do think there should be a NERC Organization that addresses Balancing Resources and Loads, what do you think about the scope of the posted SAR?

I think the scope of the SAR is fine as it is

I think the scope of the SAR should be expanded to include:

I think the scope of the SAR should be reduced to eliminate:

Other comments:

## NERC Standard Authorization Request Comment Form

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*Note – Please make sure that you have the correct SAR title and NERC number before submitting your comments. When completed, e-mail to: **sarcomm@nerc.com** with “SAR Comments” in the subject line.*

SAR Title	Balance Resources and Demand
SAR ID	BAL_RES_&_DEMAND_01_01
Comment Date	March 20, 2002

SAR Commenter Information	
Name	Ray Morella
Company	FirstEnergy Corp
Telephone	330.336.9831
Fax	330.336.9024
E-mail	morellar@firstenergycorp.com

### Comments

The balance between load and generation is the core of control within our industry. Unbalanced conditions, whether a result of generation failure, load fluctuation, or adverse market control can impact the stability of the grid and also results in the inequitable distribution of financial responsibility. Control and measurements need to be in place which insure that both reliability and financial responsibility is correctly adhered to. Current measurements such as Frequency Response, CPS1 and CPS2, and DCS are important measurement indices. These core measures need be maintained and also improved upon. Correct market signals must also be incorporated in the balance between load and generation. A reemphasis on Governor Response should be incorporated in a measure since this ability to correctly react to frequency deviation seem to be lacking in the industry.

Responses

## NERC Standard Authorization Request Comment Form

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*Note – Please make sure that you have the correct SAR title and NERC number before submitting your comments. When completed, e-mail to: **sarcomm@nerc.com** with “SAR Comments” in the subject line.*

SAR Title	Balance Resources and Demand
SAR ID	BAL_RES_&_DEMND_01_01
Comment Date	March 29, 2002

SAR Commenter Information	
Name	Kent Saathoff
Company	ERCOT
Telephone	(512)225-7011
Fax	(512)225-7020
E-mail	ksaathoff@ercot.com

## Comments

ERCOT believes there is a need for standards on balancing resources and demand in an Interconnection. However, NERC should insure that these are "core reliability standards" that focus on what is needed for the reliability of the interconnection. As stated in the Purpose of this requested Standard, it should focus on maintaining frequency within an Interconnection.

Parts of the existing standards in the NERC Policies, particularly CPS 1 and CPS 2 requirements, were developed to minimize a Balancing Authority's (Control Area's when the old policies were developed) reliance on other Balancing Authorities in the Interconnection to meet it's balancing needs, to proportion responsibility for frequency control in the Interconnection and minimize inadvertent power flows. These goals were just as much for economic equity between authorities as for reliability purposes.

In addition, and of particular concern to ERCOT, existing Control Performance Standards appear to have been developed assuming there would be more than one Balancing Authority/Control Area in the Interconnection, which is no longer the case in ERCOT. In a single Balancing Authority Interconnection such as ERCOT there are no inadvertent power flows as defined by NERC and no other balancing authorities that can be economically disadvantaged by those flows. This may indicate standards adopting frequency performance characteristics such as bandwidth deviation limits are appropriate.

New standards should also consider that some balancing systems in the new market environments of deregulation and retail choice will utilize competitive, market based solutions for frequency control. These new solutions will result in reliable frequency control, but produce different frequency control characteristics than those produced by the old vertically integrated Control Areas. Any new resource and demand balancing standard should accommodate workable new market designs.

### Summary

ERCOT believes that new standards for balancing resources and demand to maintain scheduled frequency within an interconnection should be developed with the following characteristics:

These standards should be "core reliability standards" focused on what is required for reliability; keeping the lights on.

These standards should recognize there are some Interconnections with a single balancing authority and should be based on actual frequency performance requirements such as bandwidth deviation limits.

These standards should recognize that in the new market environment some balancing authorities will not have the same control structures as the old vertically integrated Control Areas.

ERCOT has received written support of these comments from individuals representing the following parties:

Calpine

Constellation Power Source

Longhorn Power (PM)

Republic Power LP

Tenaska Power Services

BP Energy Co.

Mirant

Oncor

Lower Colorado River Authority

Responses

----- Forwarded message -----

Date: Mon, 1 Apr 2002 10:10:36 -0600

From: jbyrd@oncorgroup.com

To: sarcomm@nerc.com

Subject: SAR Comments

I support the comments submitted by Kent Saathoff, ERCOT. A standard is needed. Current measures do not fit ERCOT's situation with a single BA for the Interconnection. Careful consideration must be given to alternative competitive market situations relative to a frequency standard.

## NERC Standard Authorization Request Comment Form

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*Note – Please make sure that you have the correct SAR title and NERC number before submitting your comments. When completed, e-mail to: **sarcomm@nerc.com** with “SAR Comments” in the subject line.*

SAR Title	Balance Resources and Demand
SAR ID	BAL_RES_&_DEMND_01_01
Comment Date	April 1, 2002

<b>SAR Commenter Information</b>	
Name	Allan Silk, Chair, Operating Subcommittee, Mid-Continent Area Power Pool
Company	Manitoba Hydro
Telephone	(204) 487-5470
Fax	(204) 487-5496
E-mail	adSilk@hydro.mb.ca

## Comments

The Operating Subcommittee is a subcommittee of the MAPP Regional Reliability Committee. The Operating Subcommittee has prepared the following comments in response to the posted SAR. These comments were distributed to MAPP's Reliability Council. The responses generated from that process have also been included.

### Operating Subcommittee Submission

This comment is in support of the proposed SAR. It is recognized that measures must be developed to support a new standard.

MAPP's Operating Subcommittee wishes to note that there may be various market-driven solutions which may provide an added incentive to meet these measurements. It is hoped that the sponsors of this standard will recognize these efforts while developing this standard.

A frequency-driven cashout mechanism for imbalance, calculated every 5 minutes or less, will both provide equity in the settlement of imbalance, but is very likely to control behavior such that CPS (CPM) will only be a boundary condition and will be constantly exceeded. We further add that details of this method will recognize limits on magnitude and need additional discussion.

We agree that a Frequency Response Standard and Disturbance Control Standard will continue to be warranted. In fact, all four areas of this SAR will continue to be warranted; we simply suggest that there are market mechanisms which will provide the same control, with cashout benefit.

### Comments Received from Members of the MAPP Reliability Council

There was a concern that the Standard should only deal with reliability issues and not be concerned at all with equity issues. If equity solutions enhance reliability, they should be able to meet the Standard.

The SAR should reflect some information on need and benefit. Each SAR should justify the requirement for the standard.

## Responses

## NERC Standard Authorization Request Comment Form

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SAR Title: Balancing Resources and Loads
SAR ID: BAL_RES_&_DEMND_01_01
Comment Date 2002 03 28

<b>SAR Commenter Information</b>	
Name	Gerald N. Rheault
Company Manitoba Hydro	
Telephone 204-487-5423	Fax 204-487-5360
e-mail	gnrheault@hydro.mb.ca

Should there be a NERC Organization Standard that addresses Balancing Resources and Loads?

Yes

No

If you do think there should be a NERC Organization that addresses Balancing Resources and Loads, what do you think about the scope of the posted SAR?

I think the scope of the SAR is fine as it is

I think the scope of the SAR should be expanded to include:

I think the scope of the SAR should be reduced to eliminate: Item 1:FRM and Item 3:Unscheduled Power Flow

**Other comments: Manitoba Hydro's concerns relative to this SAR are related to the Frequency Response Measure (FRM) and to minimizing unscheduled power flow.**

**The need for an FRM requirement is not clearly evident in the documentation contained in the SAR. Do the requestors of the SAR believe that the present situation poses a reliability concern and that an FRM will improve reliability?**

**Adherence to an FRM may require changes to be made to the normal mode of governor action that could be difficult, if not impossible to achieve. If an FRM is determined to be an essential then the resulting standard must address practical issues related to weak systems, constrained interfaces, unit limitations which may impede compliance or, if compliance is achieved, lead to other reliability problems.**

**Minimizing unscheduled power flow is not defined as a responsibility of the Balancing Authority in the functional model. The Functional Authorities who share responsibility for this activity are the Reliability Authority and the Transmission Operator. Therefore this "Industry Need" does not belong in the scope of this SAR. "Minimizing unscheduled power flows within the Interconnection" is a required function but it should be addressed in the SARs related to the responsible Functional Model Authorities.**

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If you have questions, please call Maureen Long at 615-646-4431 or send a question to [spm@nerc.com](mailto:spm@nerc.com).

## NERC Standard Authorization Request Comment Form

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SAR Title: Balancing Resources and Loads
SAR ID: BAL_RES_&_DEMND_01_01
Comment Date 4/1/02

<b>SAR Commenter Information</b>	
Name	John Blazekovich
Company: ComEd	
Telephone 630-691-4777	Fax 630-691-4697
e-mail	john.blazekovich@exeloncorp.com

Should there be a NERC Organization Standard that addresses Balancing Resources and Loads?

X Yes

No

If you do think there should be a NERC Organization that addresses Balancing Resources and Loads, what do you think about the scope of the posted SAR?

X I think the scope of the SAR is fine as it is

I think the scope of the SAR should be expanded to include:

I think the scope of the SAR should be reduced to eliminate:

**Other comments:** ComEd believes the intent of the scope is acceptable. We do have some concerns with the use of the term “minimize” for items 3 & 4. Minimize is defined as “to reduce to the smallest possible amount, extent, size, or degree”. We believe the scope should be revised to reflect the acceptable control error bounds which are part of CPS1 & CPS2. The use of the word minimize infers that all effort should be made to make the error as small as possible, which is contrary to existing standards and practices.

The use of the term “unscheduled power flows” in item three can also be misleading because for each Control Area “load/resource” balance controls only effects the Control Area “net interchange error”. Unscheduled flows can exist in or through a Control Area that does not have a “net interchange error” (i.e. difference between contract path and actual flows). Item three should be re-worded, unscheduled flows should be replaced with something a Control Area can control such as “net interchange error”.

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## NERC Standard Authorization Request Comment Form

SAR Title: Balancing Resources and Loads
SAR ID: BAL_RES_&_DEMND_01_01
Comment Date 4/1/02

<b>SAR Commenter Information</b>	
Name	Robert H. Easton
Company Western Area Power Adm.	
Telephone: (970) 461-7272	Fax
e-mail	aeaston@wapa.com

Should there be a NERC Organization Standard that addresses Balancing Resources and Loads? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
If you do think there should be a NERC Organization that addresses Balancing Resources and Loads, what do you think about the scope of the posted SAR? <input checked="" type="checkbox"/> I think the scope of the SAR is fine as it is <input type="checkbox"/> I think the scope of the SAR should be expanded to include: <input type="checkbox"/> I think the scope of the SAR should be reduced to eliminate: Other comments:

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If you have questions, please call Maureen Long at 615-646-4431 or send a question to [spm@nerc.com](mailto:spm@nerc.com).

## NERC Standard Authorization Request Comment Form

SAR Title: Balancing Resources and Loads
SAR ID: BAL_RES_&_DEMND_01_01
Comment Date 04/02/2002

SAR Commenter Information			
Name	Kathleen Goodman		
Company	ISO New England Inc.		
Telephone	(413) 535-4111	Fax	(413) 535-4343
e-mail	kgoodman@iso-ne.com		

Should there be a NERC Organization Standard that addresses Balancing Resources and Loads?

Yes

No

If you do think there should be a NERC Organization that addresses Balancing Resources and Loads, what do you think about the scope of the posted SAR?

I think the scope of the SAR is fine as it is

I think the scope of the SAR should be expanded to include: There is not enough detail contained within this SAR, as written, to provide the industry with enough information to make meaningful comments. For example, how are the referenced CPM 1, CPM 2, and DCM related or mapped into the existing CPS 1, CPS 2, and DCS requirements? Will this change the current requirements? If so, how?

I think the scope of the SAR should be reduced to eliminate: FRM. This Measure should not be included in this Standard. Additionally, any non-existing proposed measure needs to be piloted prior to an actual compliance assessment to ensure industry readiness.

Other comments:

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If you have questions, please call Maureen Long at 615-646-4431 or send a question to [spm@nerc.com](mailto:spm@nerc.com).

## NERC Standard Authorization Request Comment Form

SAR Title: Balancing Resources and Loads
SAR ID: BAL_RES_&_DEMND_01_01
Comment Date March 28, 2002

<b>SAR Commenter Information</b>	
Name	Gregory J. Ott
Company APGI - Yadkin Division	
Telephone 704-422-5711	Fax 704-422-5776
e-mail	Greg.Ott@alcoa.com

Should there be a NERC Organization Standard that addresses Balancing Resources and Loads? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
If you do think there should be a NERC Organization that addresses Balancing Resources and Loads, what do you think about the scope of the posted SAR? <input checked="" type="checkbox"/> I think the scope of the SAR is fine as it is <input type="checkbox"/> I think the scope of the SAR should be expanded to include: <input type="checkbox"/> I think the scope of the SAR should be reduced to eliminate:  Other comments:

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If you have questions, please call Maureen Long at 615-646-4431 or send a question to [spm@nerc.com](mailto:spm@nerc.com).

## NERC Standard Authorization Request Comment Form

SAR Title: Balancing Resources and Loads
SAR ID: BAL_RES_&_DEMND_01_01
Comment Date April 5, 2002

<b>SAR Commenter Information</b>	
Name	Doug Hincks
Company Power Pool of Alberta	
Telephone (403)-543-0383	Fax (403)-543-0388
e-mail <a href="mailto:doug.hincks@powerpool.ab.ca">doug.hincks@powerpool.ab.ca</a>	

Should there be a NERC Organization Standard that addresses Balancing Resources and Loads?

**Yes**

If you do think there should be a NERC Organization that addresses Balancing Resources and Loads, what do you think about the scope of the posted SAR?

XXXX I think the scope of the SAR is fine as it is

I think the scope of the SAR should be expanded to include:

I think the scope of the SAR should be reduced to eliminate:

Other comments:

Note – This is a special mailing. We are trying to solicit your viewpoints on the 1<sup>st</sup> SAR which is posted for comment. You can review the SAR on the NERC Web Site.

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If you have questions, please call Maureen Long at 615-646-4431 or send a question to [spm@nerc.com](mailto:spm@nerc.com).

## NERC Standard Authorization Request Comment Form

SAR Title: Balancing Resources and Loads
SAR ID: BAL_RES_&_DEMND_01_01
Comment Date June 1, 2002

<b>SAR Commenter Information</b>			
Name	Joseph J. Krupar		
Company	Florida Municipal Power Agency		
Telephone	407-355-7767 -	Fax	407-355-5796
e-mail	joe.krupar@fmpa.com		

Should there be a NERC Organization Standard that addresses Balancing Resources and Loads? X Yes  No
If you do think there should be a NERC Organization that addresses Balancing Resources and Loads, what do you think about the scope of the posted SAR?  I think the scope of the SAR is fine as it is  X I think the scope of the SAR should be expanded to include: The checking of control error. Presently CPS measures the control of a Balancing Authority but since indicated flows may be different than actual flows there should be a check of inadvertent developed due to poor control.  I think the scope of the SAR should be reduced to eliminate:  Other comments: <b>One way to start minimizing Inadvertent Interchange accumulation between the Balancing Authority and the Interconnection would be to have a standard for integrating a schedule rather than the block accounting method presently used.</b>

Note – This is a special mailing. We are trying to solicit your viewpoints on the 1<sup>st</sup> SAR which is posted for comment. You can review the SAR on the NERC Web Site.

Email this form before April 2, 2002 to: [sarcomm@nerc.com](mailto:sarcomm@nerc.com) with “SAR Comments” in the subject line.

If you have questions, please call Maureen Long at 615-646-4431 or send a question to [spm@nerc.com](mailto:spm@nerc.com).

## NERC Standard Authorization Request Comment Form

SAR Title: Balancing Resources and Loads
SAR ID: BAL_RES_&_DEMND_01_01
Comment Date 4/1/2002

<b>SAR Commenter Information</b>	
Name	Bill Lundin, Gary Rudder
Company	TVA
Telephone (423) 751-6892	Fax
e-mail	<a href="mailto:lwlundin@tva.gov">lwlundin@tva.gov</a> , <a href="mailto:gwrudder@tva.gov">gwrudder@tva.gov</a>

Should there be a NERC Organization Standard that addresses Balancing Resources and Loads? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
If you do think there should be a NERC Organization that addresses Balancing Resources and Loads, what do you think about the scope of the posted SAR? <input checked="" type="checkbox"/> I think the scope of the SAR is fine as it is <input type="checkbox"/> I think the scope of the SAR should be expanded to include: <input type="checkbox"/> I think the scope of the SAR should be reduced to eliminate:
Other comments: <b>The SAR should reference the current NERC Policy it is going to replace.</b>

SAR Title : Balance Resources and Demand

SAR ID : BAL\_RES\_&\_DEMND\_01\_01

Comment Date : March 29, 2002

SAR Commenter Information : Raymond L. Vice  
Southern Company Services, Inc.  
Phone : (205) 257-6209  
FAX : (205) 257-6663  
Email : [rlvice@southernco.com](mailto:rlvice@southernco.com)

Comments :

I agree with the need for a standard concerning the balance between supply and demand. I do not, however, believe that the proposed SAR adequately fulfills this need. As Mr. Albert M. DiCaprio of PJM notes, the purpose of supply/demand balance standard should be to maintain the frequency of the interconnections within approved limits for both short term and long term frequency deviations, or (as Mr. DiCaprio states) within the profile approved by the NERC Operating Committee. This is not the stated purpose of the proposed standard set forth in the SAR and it is difficult to determine if the SAR can achieve this purpose.

Both the SAR form and the detailed wording of the SAR are unclear to me. As a long term member of the NERC Resources Subcommittee, relatively familiar with the concepts being discussed, yet I could not determine from the SAR specifically what was being proposed or how it was intended to fulfil the stated purpose of the SAR. I imagine it would be even more difficult for those not familiar with such concepts.

In addition, there are a number of conceptual errors in the SAR. For example, the supply/demand balance in an interconnection does not arrest sudden frequency changes as stated in the SAR. This is accomplished through Primary Frequency Response which is a combination of Load Frequency Response and Turbine Governor Response. The Resource Subcommittee's proposed Frequency Response Standard (FRS) is an attempt to measure and standardize this response by control area (or balancing authority), as I suppose is intended in the proposed FRM. However, this is not especially clear from the wording of the SAR. Nor, off hand, do I see how it could be made clear within the framework of the SAR form.

I see the need to move from Operating Policies to Standards and appreciate the hard work being done by those involved in the process. However, this SAR does not appear sufficiently developed for public comment and review at this time. Not only does more development work need to be done on the SAR form and content, but additional education of industry stakeholders (most assuredly including me) in how to interpret and utilize the SAR process is also needed.

Yours truly,

Raymond Vice, P.E.  
Manager Operations Engineering  
Southern Company Services, Inc.

Note – This is a special mailing. We are trying to solicit your viewpoints on the 1<sup>st</sup> SAR which is posted for comment. You can review the SAR on the NERC Web Site.

Email this form before April 2, 2002 to: [sarcomm@nerc.com](mailto:sarcomm@nerc.com) with “SAR Comments” in the subject line.

If you have questions, please call Maureen Long at 615-646-4431 or send a question to [spm@nerc.com](mailto:spm@nerc.com).

## NERC Standard Authorization Request Comment Form

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SAR Title: Balancing Resources and Loads
SAR ID: BAL_RES_&_DEMND_01_01
Comment Date March 29, 2002

<b>SAR Commenter Information</b>	
Name	Steve McCoy
Company California ISO	
Telephone(916) 608-5807	Fax (916) 608-5906
e-mail	cgates@caiso.com

Should there be a NERC Organization Standard that addresses Balancing Resources and Loads?

Yes

No

If you do think there should be a NERC Organization that addresses Balancing Resources and Loads, what do you think about the scope of the posted SAR?

I think the scope of the SAR is fine as it is

I think the scope of the SAR should be expanded to include:

I think the scope of the SAR should be reduced to eliminate:

**Other comments:**

California ISO comments on proposed Organizational Standard - Balance Resources and Demand.

**TITLE:**

- Title of the proposed Standard should be: **Load and Resource Balancing**, rather than "Balance Resources and Demand".

**PURPOSE:**

- Purpose of the proposed Standard should be: **To match, as closely as possible, Interconnection Loads and Resources in order to maintain scheduled system frequency during normal and emergency conditions.**

(Note: It is somewhat unclear from the Purpose and Industry Needs sections if this standard is for operations during normal or emergency conditions or both. This is somewhat cleared up in the Brief Description section where measures are proposed that cover both conditions. The CAISO feels this is a very important Organizational Standard and it's "purpose" needs to be very clearly defined).

**INDUSTRY NEED FOR STANDARD:**

- Need #1:

Ok

- Need #2:

In the statement that "Operating well below 60 Hz can cause under-frequency load shedding" use of the words "well below" is rather vague. As worded, this statement may be correct if a significant quantity of generation is lost during low frequency operation. As an example, the CAISO system will not shed firm load until a frequency of 59.5 Hz is reached. For this to occur, the WSCC interconnection would need to lose in the neighborhood of 4,000 – 5,000 MW. Even if operation was at 59.9 Hz, a significant loss of generation (two largest generating units in the WSCC interconnection) in the neighborhood of 2,700 MW would still not cause operation of under-frequency protection.

- Need #3:

USF cannot be minimized simply by maintaining 60 cycles. This may not be the appropriate standard for this statement. To the extent that a scheduling error may be causing an operating limit violation and high or low frequency, it may apply to this standard.

- Need #4:

Ok.

#### **BRIEF DESCRIPTION OF NEW STANDARD...ETC.**

- #1: FRM

The proposed Frequency Response Measure (FRM) does not provide a relevant measure. The measure itself does not arrest the frequency deviation as stated in the description. The frequency response is dependent upon the governor response of the generators. To address the frequency response, the requirement of generator owners to install/maintain/test/validate the governors by the Operating Entities and/or Reliability Council(s) would be necessary. The correlation between ACE and FRM is not appropriate.

"Within seconds", in parenthesis, should say "within one minute".

- #2: CPM 1

The CPM1 measure does not specifically follow the present CPS1 Standard. CPM1 should measure the average of the clock-minute averages of the Balancing Authority's one-minute average ACE divided by  $-10B$  (where B is the Balancing Authority's frequency bias) times the corresponding clock-minute averages of the Interconnection's frequency.

Does ACE become ABE, i.e., Area Balancing Error rather than Area Control Error? This item should also say that "Compliance with CPM 1 assures that Balancing Authorities are contributing their share in maintaining scheduled Interconnection frequency as required".

- #3 CPM 2

The CPM2 measure does not specifically follow the present CPS2 Standard. CPM2 should measure the average ACE for each of the six ten-minute periods during the hour, and remain within specific limits, referred to as  $L_{10}$ . The correlation with transmission operating limit violations should be removed.

- #4 DCM

The DCM measure does not state the time period that the Area Control Error must either return to zero or its pre-disturbance level.

Note – This is a special mailing. We are trying to solicit your viewpoints on the 1<sup>st</sup> SAR which is posted for comment. You can review the SAR on the NERC Web Site.

Email this form before April 2, 2002 to: [sarcomm@nerc.com](mailto:sarcomm@nerc.com) with “SAR Comments” in the subject line.

If you have questions, please call Maureen Long at 615-646-4431 or send a question to [spm@nerc.com](mailto:spm@nerc.com).

## NERC Standard Authorization Request Comment Form

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SAR Title: Balancing Resources and Loads
SAR ID: BAL_RES_&_DEMND_01_01
Comment Date 4/1/2002

<b>SAR Commenter Information</b>	
Name	Edward Stoneburg/Jerry McElyea
Company Illinois Power Company	
Telephone(217)3626363 / (217)4246558	Fax (217)3627458
e-mail	<a href="mailto:edward_stoneburg@illinoispower.com">edward_stoneburg@illinoispower.com</a> <a href="mailto:jerry_mcelyea@illinoispower.com">jerry_mcelyea@illinoispower.com</a>

Should there be a NERC Organization Standard that addresses Balancing Resources and Loads?

Yes

No

If you do think there should be a NERC Organization that addresses Balancing Resources and Loads, what do you think about the scope of the posted SAR?

I think the scope of the SAR is fine as it is

I think the scope of the SAR should be expanded to include:

I think the scope of the SAR should be reduced to eliminate: Illinois Power Company does not believe it appropriate to establish a Frequency Response Measure The SAR should be withdrawn and resubmitted with an explicit focus on Balancing Resources and Loads, without the addition of FRM requirements

Other comments: The following comments are provided by section of the SAR. Included are recommended changes for inclusion in a revised SAR on Balancing of Loads and Resources. Reasons for the suggested changes are in *italics*.

#### PURPOSE of STANDARD

The purpose should be “ Maintain Balance of Resources and Load such that frequency can be maintained at levels required for reliability.” *Maintaining scheduled frequency is not an adequate definition of the reliability purpose.*

#### INDUSTRY NEED FOR STANDARD

A sufficiently close load resource balance is appropriate to:

1. Arrest normal sudden frequency changes in the Interconnection caused by generation failure or load interruption.
2. ~~Maintain Scheduled Frequency in the Interconnection. Frequency Error creates Time Error in the Interconnection. Operating well below 60 Hz can cause under frequency load shedding. Avoid extended operation well below or above 60 Hz , at limits of reliable operation.~~
3. ~~Minimize unscheduled power flows within the Interconnection that can cause operating limit violations. (Unscheduled flows can happen due to any balancing action, and this standard will not minimize such actions)~~
4. ~~Minimize Inadvertent Interchange accumulation between the Balancing Authority and the Interconnection. (No apparent relation to Industry Need for this standard)~~

#### **BRIEF DESCRIPTION OF NEW STANDARD OR REVISION TO EXISTING STANDARD**

The Load-Resource Balance Standard requires that each Balancing Authority maintain a close match between its loads and resources in real time. The standard accomplishes this through ~~four~~three measures

that cover various time frames and situations:

~~Frequency Response Measure (FRM)—FRM arrests short-term (0-1 minute) frequency deviation following a sudden mismatch between generation and load. Adherence to the FRM ensures there are sufficient frequency responsive resources that quickly (within seconds) stabilize Interconnection frequency whenever load or generation changes rapidly before operator actions. (Note that FRM does not return the Interconnection to its scheduled frequency, only arrest the frequency change.)~~ *(Illinois Power believes this is an inappropriate measure. There is nothing a control area can do to influence, control or dictate the frequency response of their load. There are guides related to generator governor response and that is as far as Illinois Power believes NERC should go.)*

- ~~2.1.~~ *Control Performance Measure 1 (CPM1) – CPM1 measures the Balancing Authority’s one-minute average Area Control Error with respect to Interconnection frequency. Compliance with CPM1 helps maintain Interconnection frequency on schedule.*
- ~~3.2.~~ *Control Performance Measure 2 (CPM2) – CPM2 measures the Balancing Authority’s 10-minute average Area Control Error. Compliance with CPM2 helps minimize unscheduled power flows that can cause transmission operating limit violations.*
- ~~3.~~ *Disturbance Control Measure (DCM) – DCM ensures that the Interconnection-deficient system returns to an acceptable balance level its scheduled frequency within a defined period following a sudden generation or load change (a “disturbance.”) This measure requires the responsible Balancing Authority to quickly return its Area Control Error to an acceptable level. *(The original statement is not true. Compliance with DCM ensures that other resources replace a lost resource within a defined period. There can be no guarantee that the frequency will be at any particular value at the end of that period. The objective should be to replace the resource, not to bring frequency to the scheduled value).**

#### Procedural Requirements:

~~Each Balancing Authority shall have the necessary AGC facilities at its disposal to calculate an area control error (ACE) value (See Standard Technical Reference document). Each Balancing Authority shall maintain its ACE within specific limits as defined by four measures~~ (On the assumption that CPM is comparable to CPS and DCM is comparable to DCS, it is not correct to say that these measures define any specific limits for ACE)

#### Other Illinois Power Comments:

*The industry has agreed that a control area should not take any control action that would negate the natural frequency response of their control area. It is not appropriate to define a control area’s responsibility regarding the magnitude of their frequency response. The only obligation should be to estimate it and incorporate it into their ACE equation through the frequency bias component. Frequency response is extremely difficult to measure. For the most part it will be lost in the noise of load and generation variations which are independent of frequency. Illinois Power is very much opposed to any measure related to frequency response.*

## NERC Standard Authorization Request Comment Form

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*Note – Please make sure that you have the correct SAR title and NERC number before submitting your comments. When completed, e-mail to: **sarcomm@nerc.com** with “SAR Comments” in the subject line.*

SAR Title	Balance Resources and Demand
SAR ID	BAL_RES_&_DEMND_01_01
Comment Date	April 01, 2002

<b>SAR Commenter Information</b>	
Name	Tim Bradberry
Company	Duke Power Company
Telephone	704-373-5195
Fax	704-373-3500
E-mail	tebradbe@duke-energy.com

## Comments

### General Comments

1. Measures (CPM, DCM, FRM) need to be related/mapped to the current standards (CPS, DCS). Specifically, are these "measures" new calculations or simply the existing calculations renamed as measures.

2. The terms "measures" and "standard" seem to be randomly and incorrectly interchanged in the description section. The measures are a quantifiable grade of how well the Balancing Authority controls to the standard. For example in the Frequency Response Measure section, Frequency Response, not Frequency Response Measure, arrest short-term (0-1 minute) frequency deviation following a sudden mismatch between generation and load. The Frequency Response Measure is how well the Balancing Authority met the standard for Frequency Response.

3. A common, quantifiable definition of the term disturbance needs to be used between all standards, whether Operating or Planning. It is important that future SARs agree with the one defined by this one since it is the first.

### Comments on Specific Sections

#### For Procedural Requirements:

\* Strike the term "AGC" from Each Balancing Authority shall have the necessary AGC facilities at its disposal to calculate an area control error (ACE) value. AGC is not a term needed or used to calculate an ACE value.

#### For The Standard will Apply to the Following Functions:

\* If the standard only applies to the Balancing Authority function, how is consistency between the other functions obtained across multiple Balancing Authorities. As a minimum, it should also apply to Generator and Load-Serving Entity functions.

## Responses

## NERC Standard Authorization Request Comment Form

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SAR Title	Balance Resources and Demand
SAR ID	BAL_RES_&_DEMND_01_01
Comment Date	March 26, 2002

SAR Commenter Information	
Name	Jim Cyrulewski
Company	International Transmission Company
Telephone	734-665-3628
Fax	734-665-3480
E-mail	cyrulewski@jteenergy.com

## **MIPS SAR comments February 12, 2002**

### **Title of Proposed Standard:**

- **Balance Resources and Demand**

### **Purpose for Standard**

- **Mom and apple pie, very generic**
- **Why not specify 60 Hz?**
- **If it should be a band around 60 Hz, specify**
- **System is designed for 60 Hz, but the scheduled frequency may be adjusted for time error correction**
- **Frequency is actually a measure of the health of the system, the purpose should be to develop criteria to maintain the balance of the resources / load**
- **Should define “what” needs to be done, not “how”**

### **Industry Need for Standard**

- **The needs statement should be bullets, rather than numbered, unless specific priority is intended. Number 2 is actually less important**
- **The need is actually to establish that the obligations associated with the benefits from being interconnected are maintained**
- **The MIPS agrees that the SAR is needed**

### **Brief Description**

- **ACE can be measured without AGC. The sentence:** “Each Balancing Authority shall have the necessary AGC facilities at its disposal to calculate an area control error (ACE) value (See Standard Technical Reference document).” **should be deleted.**
- **JITF work should be considered.**

### **Applicability of the Standard**

- **Narrowly focused on only balancing authority, what happens if BA does not perform?**
- **The BA is only entity that controls ACE**
- **Who has secondary responsibility to ensure that reliability does not suffer? Does it then fall to the RA?**

- **Should defer to intra-RTO load resource combinations**
- **Applies to anyone who is interconnected (generation and load)**
- **Some of these measurements may not be appropriate in different market models**
- **Some say it is only BA, some say it is the loads and generators**
- **In the following section, “shall” should be changed to “may”**

Each Balancing Authority ***shall*** maintain its ACE within specific limits as defined by four measures.

1. FRM
2. CPM1
3. CPM2
4. DCM

Each Balancing Authority ***may*** maintain its ACE within specific limits as defined by four measures.

1. FRM
2. CPM1
3. CPM2
4. DCM

- **The SAR should not prescribe specific measures, rather should indicate that the appropriate measures should be used. The four measures included in the SAR may not be applicable in all interconnection (Western, Eastern, ERCOT)**

## **Reliability and Market Interface Principles**

- 

## **General Comments**

- **Too general**
- **Looks more like trying to cram Policy 1 into the new format, rather than the creation of a zero-based standard**
-

**Motion: Ken made, Jerry seconded**

**The MIPS will submit these initial comments to the Standards Process Manager as initial reaction to the SAR, and are not intended as a consensus of the MIPS. The MIPS will consider developing formal consensus comments.**

**Motion passed without objection.**

## Comments

I manage the Michigan Electric Power Coordination Center for the Michigan Electric Coordinated Systems (MECS) Control Area. The following are comments of my staff:

We support the need for this SAR. We propose the following improvements:

The title of the standard should be changed to "Balance Resources and Requirements". These requirements include meeting area instantaneous load demand, INTERCHANGE SCHEDULE, OPERATING RESERVE, REACTIVE RESOURCE, and OVERLAP REGULATION obligations.

### **Industry Need for Standard: Item 4**

Minimizing Inadvertent Interchange is more complex than accumulation. Need to take into account good and bad inadvertent. Also there is no measure for this on Page 2.

### **Brief Description of New Standard of Revision to Existing Standard:**

Item 4: Disturbance Control Measure:

Suggested wording change: "DCM ensures that the Interconnection *helps minimize unscheduled power flows and* returns to its ....."

### **Procedural Requirements:**

This section does not contain any mention of maintaining adequate resources to withstand system contingencies. At a minimum, this document should contain wording to the effect that "Balancing Authorities are expected to maintain sufficient resources (i.e., regulation, AGC, Contingency Reserve, DSM, etc.) to stabilize the system following an unexpected event." The current wording of "maintaining ACE" is insufficient in that it does nothing to set a minimum standard for reserves or regulation. It does not have to go into explicit detail, let the regions define the level of detail. But something should be in the NERC document as far as setting a minimum.

### **The Standard will Apply to the Following Functions:**

We believe this standard applies to the Generator and Purchase-Selling Entities as well.

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If you have questions, please call Maureen Long at 615-646-4431 or send a question to [spm@nerc.com](mailto:spm@nerc.com).

## NERC Standard Authorization Request Comment Form

SAR Title: Balancing Resources and Loads
SAR ID: BAL_RES_&_DEMND_01_01
Comment Date 4/1/02

<b>SAR Commenter Information</b>	
Name	Karl Kohlrus
Company	City Water, Light & Power
Telephone (217)-321-1391	Fax (217)-789-2082
e-mail	kkohlrus@cwlp.com

Should there be a NERC Organization Standard that addresses Balancing Resources and Loads? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
If you do think there should be a NERC Organization that addresses Balancing Resources and Loads, what do you think about the scope of the posted SAR? <input checked="" type="checkbox"/> I think the scope of the SAR is fine as it is <input type="checkbox"/> I think the scope of the SAR should be expanded to include: <input type="checkbox"/> I think the scope of the SAR should be reduced to eliminate:  Other comments:

Note – This is a special mailing. We are trying to solicit your viewpoints on the 1<sup>st</sup> SAR which is posted for comment. You can review the SAR on the NERC Web Site.

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If you have questions, please call Maureen Long at 615-646-4431 or send a question to [spm@nerc.com](mailto:spm@nerc.com).

## NERC Standard Authorization Request Comment Form

SAR Title: Balancing Resources and Loads
SAR ID: BAL_RES_&_DEMND_01_01
Comment Date March 29, 2002

<b>SAR Commenter Information</b>	
Name	Larry D. Ables
Company	Entergy (Energy Management Organization)
Telephone: 281-297-3507	Fax 281-297-3535
e-mail	labels@entergy.com

Should there be a NERC Organization Standard that addresses Balancing Resources and Loads? <input checked="" type="checkbox"/> Yes  <input type="checkbox"/> No
If you do think there should be a NERC Organization that addresses Balancing Resources and Loads, what do you think about the scope of the posted SAR? <input checked="" type="checkbox"/> I think the scope of the SAR is fine as it is  <input type="checkbox"/> I think the scope of the SAR should be expanded to include:  <input type="checkbox"/> I think the scope of the SAR should be reduced to eliminate:
<b>Other comments:</b> The proposed standard is described at a very high level. A standard is definitely required for the balancing function from an inter-connection reliability perspective. However, the specifics contained in the standard's measures will need to be reviewed closely after draft definitions are developed.

Note – This is a special mailing. We are trying to solicit your viewpoints on the 1<sup>st</sup> SAR which is posted for comment. You can review the SAR on the NERC Web Site.

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If you have questions, please call Maureen Long at 615-646-4431 or send a question to [spm@nerc.com](mailto:spm@nerc.com).

## NERC Standard Authorization Request Comment Form

SAR Title: Balancing Resources and Loads
SAR ID: BAL_RES_&_DEMND_01_01
Comment Date 03/28/2002

<b>SAR Commenter Information</b>	
Name	Tony Jankowski
Wisconsin Electric Power Company	
Telephone 414-221-4369	Fax 414-221-2350
e-mail tony.jankowski@wepco.com	

Should there be a NERC Organization Standard that addresses Balancing Resources and Loads?

Yes

No

If you do think there should be a NERC Organization that addresses Balancing Resources and Loads, what do you think about the scope of the posted SAR?

I think the scope of the SAR is fine as it is

I think the scope of the SAR should be expanded to include:

I think the scope of the SAR should be reduced to eliminate: CPM2 should be measured over a shorter period time. Rather than one year rolling average, it should be over a quarter or monthly. The CPM2 requirement should be dropped.

Other comments:

Note – This is a special mailing. We are trying to solicit your viewpoints on the 1<sup>st</sup> SAR which is posted for comment. You can review the SAR on the NERC Web Site.

Email this form before April 2, 2002 to: [sarcomm@nerc.com](mailto:sarcomm@nerc.com) with “SAR Comments” in the subject line.

If you have questions, please call Maureen Long at 615-646-4431 or send a question to [spm@nerc.com](mailto:spm@nerc.com).

## NERC Standard Authorization Request Comment Form

SAR Title: Balancing Resources and Loads
SAR ID: BAL_RES_&_DEMND_01_01
Comment Date March 27.2002

<b>SAR Commenter Information</b>	
Name	Don Adair
Company Power Pool of Alberta	
Telephone 403 543-0399	Fax 403 543-0388
e-mail	don.adair@powerpool.ab.ca

Should there be a NERC Organization Standard that addresses Balancing Resources and Loads? x Yes  No
If you do think there should be a NERC Organization that addresses Balancing Resources and Loads, what do you think about the scope of the posted SAR?  I think the scope of the SAR is fine as it is  I think the scope of the SAR should be expanded to include:  I think the scope of the SAR should be reduced to eliminate:  <b>Other comments: Scope should be as flexible as possible but should support the concept of financial penalties if operating entities do not comply. Loads should be given equal oppourtunity to participate in the balancing process.</b>

Note – This is a special mailing. We are trying to solicit your viewpoints on the 1<sup>st</sup> SAR which is posted for comment. You can review the SAR on the NERC Web Site.

Email this form before April 2, 2002 to: [sarcomm@nerc.com](mailto:sarcomm@nerc.com) with “SAR Comments” in the subject line.

If you have questions, please call Maureen Long at 615-646-4431 or send a question to [spm@nerc.com](mailto:spm@nerc.com).

## NERC Standard Authorization Request Comment Form

SAR Title: Balancing Resources and Loads
SAR ID: BAL_RES_&_DEMND_01_01
Comment Date 3/27/02

<b>SAR Commenter Information</b>	
Name	Bruce Corder
Company	CHPD
Telephone 509 663-8121, ext. 4705	Fax 509 664-4876
e-mail	brucec@chelanpud.org

Should there be a NERC Organization Standard that addresses Balancing Resources and Loads? X Yes  No
If you do think there should be a NERC Organization that addresses Balancing Resources and Loads, what do you think about the scope of the posted SAR?  I think the scope of the SAR is fine as it is  X I think the scope of the SAR should be expanded to include:  I think the scope of the SAR should be reduced to eliminate:  Other comments:

April 23, 2002

SRP Comments on NERC 11 SAR sent out on April 2, 2002.

All 11 SAR's (this group of 10 plus the one sent out earlier) don't contain enough information to make the kind of judgments requested on the forms. Therefore the forms are not filled out.

We recommend all the SAR's be advanced to the next step to develop the specific standards and associated measurements for each standard so that we can evaluate and comment on them.

All of these SAR's are needed for reliable planning and operation of the bulk electric transmission system and meet the principle requirements.

Comments on the White paper:

1. The paper fails to state what standards are supposed to be. This seems so basic; one has to assume that those drafting the white paper want to redefine the definition contained in the Organizational Standards Manual. This leads to a lot of confusion and is not the place to do that.
2. The Planning Standards were written in a different time period than the Operating Policies with different objectives. Thus they are different and that should be recognized. For instance the development of a Planning Functional model has absolutely nothing to do with whether control areas exist or not and whether companies have restructured or not. The statement about control areas may be true for the Operating Policies but it is not true for the Planning Standards.

The Planning Standards (Templates) were written to meet the definition of a standard in the Organizational Standards Manual, to meet at least one of the Reliability Principles, to comply with all the Market Interface Principles and to contain the compliance administration elements. This is very different than what is contained in the Operating Policies. The Planning Standards need to go through the new process so that both the Operating elements and Planning elements of the Organizational Standards are consistent, are not duplicative and are needed for reliability.

3. The term "core reliability requirement" is used in the white paper but is never mentioned in the Organizational Standards Manual. Using an undefined term is very misleading and should be avoided.
4. The paper in several places address "what performance must be achieved". As noted above, an Organizational Standard can be broader than that and this write up is misleading.
5. The process has been lengthened because of the multiple posting of the SAR's. NERC has a body of reliability requirements written up into Compliance Templates. With very little effort these could be written up into SAR's that would provide sufficient detail for NERC to evaluate them. It is very hard to comprehend why one does not use this work to expedite the process. Instead SAR's are sent out with insufficient information. The process is long enough. We should be looking for all ways possible to speed it up.

Comments on the SAR write-up:

1. The SAR write-up only contains the purpose and brief description of a standard. Where is the Standard? I thought that is what the SAR is for?
2. The descriptions are in most cases extremely vague. The write-ups contain words like "such as" or "as defined in the standard". These are big enough to cover a MAC truck. Once again there is insufficient information to make a good judgment.

ECAR has conducted a survey of its member companies regarding the eleven SARs, which NERC has initiated to-date. We recognize that the comment period for the first SAR issued ("Balance Resources and Demand") has already closed. However, considering that the first SAR was issued earlier than the other ten primarily just to get the process started, and further considering that all 11 SARs are viewed by NERC as a possible complete set of Organization Standards (re: the "White Paper"), ECAR believes that comments on the first SAR should still be considered along with those on the other ten.

11 of the 18 ECAR Full Members, along with two Associate Members, submitted responses to the SAR survey. Some of the responses were submitted using the NERC "SAR Comment Form", while others were contained in narrative e-mails, and one was faxed to us. Therefore, a complete set of the ECAR member company responses will be sent to the Standards Process Manager at NERC via Fed Ex to arrive at NERC by May 3rd. The Fed Ex package will include a copy of this e-mail. FYI, NERC may also receive some of the ECAR member company responses directly from the companies. Some of the individual company responses will be identical to what will be in the Fed Ex package and some will contain more detailed comments.

The ECAR member company responses contain numerous and wide-ranging comments about the need for each of the 11 proposed Organization Standards, as well as comments regarding the scope and applicability of the SARs. As your review of these responses will show, there is general ECAR consensus – but not unanimity -- that the 11 SARs as a set cover the scope of performance needed to ensure reliability of the interconnected North American bulk power systems. Some ECAR members feel that there are performance areas not covered in the proposed set of Organization Standards, and they have provided what they think is missing. Others believe that some of the proposed Organization Standards are not needed, and they explain why they feel that way. Numerous comments were directed at the scope and applicability of the SARs. Several ECAR companies questioned the inclusion of the "Distribution Provider" function in the applicability section of the SARs, believing that NERC should stick to its traditional focus on the bulk power systems and stay out of the distribution arena.

The recent call for nominees to serve on SAR Drafting Teams is the appropriate next step. ECAR believes that all 11 SARs need to be refined to reflect industry comments and then posted again for another round of industry comments. Before proceeding into actual development of Organization Standards based on these 11 SARs, NERC must have clear industry consensus on the need for each of the Organization Standards outlined in the 11 SARs, as well as consensus on the scope and applicability of those SARs.

If the wide-ranging comments received from ECAR members are any indication, there is still some serious work to be done to achieve the needed clear industry consensus on how to proceed.

Brant Eldridge  
Executive Manager -- ECAR  
5/2/02

SAR Commenter Information	
Name	Jon. Loesch
Organization	FirstEnergy Solutions
Telephone	330-315-7313
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E-mail	LoeschJ@FirstEnergyCorp.com
<p>Is there a reliability-related need for an Organization Standard to be developed on this topic?</p> <p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No The scope of the SAR is fine as it is</p> <p><input checked="" type="checkbox"/> The scope of the SAR should be expanded to include: <b>responsibility for maintaining adequate operating reserves; responsibility for maintaining adequate reactive support; new metrics relevant to individual functional entities.</b></p> <p><input checked="" type="checkbox"/> The scope of the SAR should be reduced to eliminate: <b>FRM; "minimize inadvertent interchange accumulation".</b></p> <p><b>Other comments:</b> Balancing Authority (BA) cannot be solely responsible for meeting old control area performance measurements. The old control measurements and FRM may serve to assess the overall performance of all responsible parties, but cannot be laid at the feet of any one entity. Standards and measures should hold BA responsible for what it can directly control: e.g., arranging adequate available resources and sending appropriate signals. The inability to meet old control area objectives due to unavailable or unresponsive resources cannot be held against BA. Regulation and frequency response depend upon participating generators (or DSM?). The availability of adequate resources as a market issue may not be assignable to anyone, unless it is the market designers. Pre-arrangement of adequate resources by the BA depends upon responsible forecasting and scheduling by LDUs and LSEs. It is not evident that Need Item #1 is achievable with Description Item #1 (FRM), as opposed to requiring adequate governor response from Generators. New measures must be defined which individual functional entities can directly control, so that each of them may be held accountable for their contribution to balancing resources and demand.</p> <p>BAs may contract (with Generators, e.g.) to obtain reliability services, but parties who provide those services should be responsible to the grid as a whole, not just by contract to the BA, and so there should be accountability to NERC standards in that regard.</p> <p>Although it is necessary to address the calculation and accounting for accumulated inadvertent interchange, it is not evident that this bears on the purpose of this SAR or that there is a compelling reliability reason to "minimize" its accumulation. This needs further consideration and rewording.</p>	

<i>SAR Commenter Information</i>			
Name	Frank A. Venhuizen		
Organization NIPS (Northern Indiana Public Service Co.)			
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Is there a reliability-related need for an Organization Standard to be developed on this topic?			
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No The scope of the SAR is fine as it is			
<input type="checkbox"/> The scope of the SAR should be expanded to include:			
<input checked="" type="checkbox"/> The scope of the SAR should be reduced to eliminate: FRM (applies to Generators, only)			

<i>SAR Commenter Information</i>			
Name	Lew Gray, Mike Holtsclaw, Steve Clouse		
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Is there a reliability-related need for an Organization Standard to be developed on this topic?			
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No The scope of the SAR is fine as it is			
Comment: Remove: "Under Frequency Load Shedding" Add: "large motor operating problems"			

<i>SAR Commenter Information</i>			
Name	David W. Sandefur		
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Is there a reliability-related need for an Organization Standard to be developed on this topic?			
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No The scope of the SAR is fine as it is			