

# NORTH AMERICAN ELECTRIC RELIABILITY COUNCIL

Princeton Forrestal Village, 116-390 Village Boulevard, Princeton, New Jersey 08540-5731

## Coordinate Interchange Standard Drafting Team

Hyatt Rosemont, Chicago

Tuesday, November 4, 2003 — 1:00 p.m. to 5 p.m.

Wednesday, November 5, 2003 — 8:00 a.m. to 3 p.m.

### Meeting Agenda

#### November 4, 2003

- 1300–1315 Welcome and introductions — Chairman
- Administrative items — Secretary
- Approve Agenda — Chairman
- 1315–1330 Review October 1–2 meeting, October 22 conference call, October 27–28 Interchange Standard and Business Practices meeting — Mike Oatts
- 1330–1345 Functional Model Version 2 — Al DiCaprio
- 1345–1515 Coordinate Interchange Standard — Mike Oatts
- 1515–1530 Break
- 1530–1700 Coordinate Interchange Reference Document — Mike Oatts

#### November 5, 2003

- 0800–0815 Welcome and review progress made on November 4 — Chairman
- 0815–1000 Compliance elements — Joe Willson
- 1000–1015 Break
- 1015–1130 Comment Form — Tim Gallagher
- 1130–1215 Lunch
- 1215–1430 Finalize documents for posting — Gordon Scott
- 1430–1445 Discuss Standing Committee presentation — Tim Gallagher
- 1445–1500 Next Steps — Mike Oatts
- 1500 Adjourn

These definitions will be posted and balloted along with the standard, but will not be restated in the standard. Instead, they will be included in a separate “Definitions” section containing definitions relevant to all standards that NERC develops.

## DEFINITIONS

**Interchange:** Energy transfers that cross balancing authority boundaries.

**Arranged Interchange:** The state where the purchasing/selling entity has obtained all necessary approvals to submit the interchange to the interchange authority. **Suggested alternate definition:** Desired Interchange that has been requested by the purchasing/selling entity, has obtained all necessary approvals, and is ready to be submitted to the interchange authority.

**Confirmed Interchange:** The state where the interchange authority has validated approvals and is ready to submit the interchange to the balancing authorities. **Suggested alternate:** Arranged interchange that has been submitted to the interchange authority, has had all approvals validated, and is ready to be submitted to the balancing authorities for implementation.

**Implemented Interchange:** The state where the balancing authority enters the confirmed interchange into its area control error equation. **Suggested alternate:** Confirmed Interchange that has been submitted to the balancing authority and properly incorporated in the balancing authority’s control error equation.

In this standard, the terms *balancing authority*, *interchange authority*, *reliability authority*, *purchasing/selling entity*, and *transmission service provider* refer to the entities performing these functions as defined in the functional model. **Perhaps they should be capitalized (i.e. Balancing Authority). Then people will know it is a defined term**

## 400 — COORDINATE INTERCHANGE

- 401 Implementation of Interchange
- 402 Interchange Confirmation
- 403 Response to Interchange Authority
- 404 Interchange Authority Disseminates Confirmations

I think an introduction may be appropriate here to let the Industry know what steps have taken place and performed by the PSE to get to this stage which is where the Reliability section begins.

1. **Purpose:** To ensure that the implementation of interchange transactions between source and sink balancing authorities is coordinated by an interchange authority such that the following reliability objectives are met:
  - 1.1. Each interchange schedule is checked for reliability before it is implemented
  - 1.2. The balancing authorities implement the interchange schedule exactly as agreed upon in the interchange confirmation process
  - 1.3. Interchange schedule information is available for reliability assessments
2. **Effective Period:** This standard will become effective upon the date of NERC Board of Trustees adoption.
3. **Applicability:** This standard applies to entities performing various electric system functions, as defined in the most recent version of the NERC functional model . NERC is now developing standards and procedures for the identification and certification of such entities. Until that identification and certification is complete, these standards apply to the existing entities (such as control areas, transmission owners and operators, and generation owners and operators) that are currently performing the defined functions.

## 401 Implementation of Interchange

### 1. Requirement

- 1.1. The balancing authority shall implement Confirmed Interchange exactly as agreed upon in the interchange confirmation process.

### 2. Measures

- 2.1. The balancing authority shall be able to provide evidence that Implemented Interchange matches confirmed interchange as submitted to them by the interchange authorities.
  - 2.1.1. Evidence shall provide sufficient detail to demonstrate that the Implemented Interchange was implemented in the balancing authority's area control error equation, or the system that calculates the area control error equation. Note: I would delete this sentence. Net interchange cannot prove anything. You – or your designated scheduling entity - must be able to produce sufficient details.)
- 2.2. Suggest another measure: The balancing authority shall be able to demonstrate that all Implemented Interchange were incorporated into area control error equations prior to the specified ramp start.

### 3. Regional Differences

This Requirement does not apply in the ERCOT Interconnection because ERCOT operates as a single balancing authority, asynchronous to the Eastern and Western Interconnections.

### 4. Compliance Monitoring Process

- 4.1. The responsible entity shall demonstrate compliance to the compliance monitor within the first year that this standard becomes effective or the first year the entity commences operation by self-certification to the compliance monitor.
- 4.2. Subsequent to the initial compliance review, compliance will be:
  - 4.2.1. Verified by audit at least once every three years.
  - 4.2.2. Verified by spot checks in years between audits.
  - 4.2.3. Verified by annual audits of non-compliant balancing authorities, until compliance is demonstrated.
  - 4.2.4. Verified at any time as the result of a complaint. Complaints must be lodged within 60 days of the incident. Complaints will be evaluated by the compliance monitor.
- 4.3. The performance-reset period shall be twelve months from the last non-compliance to 401.1. Balancing authorities found noncompliant shall keep data until deficiencies resulting in noncompliance are resolved. The compliance monitor shall keep audit records for three years.
- 4.4. The responsible entity shall make the following available for inspection by the compliance monitor upon request:
  - 4.4.1. Rolling three months worth of hourly integrated interchange values, either individual or net from the balancing authority's ? system

- 4.4.2. Indication of whether interchange data is block or ramp schedule
- 4.5. The compliance monitor will verify balancing authority data by comparing it to corresponding interchange authority data

## **5. Levels of Noncompliance**

- 5.1. Level one: 90 to 99% of the records confirm that implemented schedules match corresponding interchange authority schedules and were implemented prior to ramp start.
- 5.2. Level two: 80 to 89% of the records confirm that implemented schedules match corresponding interchange authority schedules and were implemented prior to ramp start.
- 5.3. Level three: Less than 80% of the records confirm that implemented schedules match corresponding interchange authority schedules and were implemented prior to ramp start.
- 5.4. Level four: No records available to review.

## **6. Sanctions**

- 6.1. Sanctions for noncompliance shall be applied consistent with the NERC compliance and enforcement matrix (attached to the end of this standard for reference). In cases where financial penalties are assigned for noncompliance, these penalties shall be the fixed dollar sanctions listed in the matrix, not the per MW sanctions.

## 402 Interchange Confirmation

### 1. Requirement

- 1.1. The interchange authority shall verify that Arranged Interchange transactions are balanced, **valid** and reviewed for reliability prior to transitioning them into Confirmed Interchange.

### 2. Measures

- 2.1. For each interchange transaction it transitions, the interchange authority shall show evidence that it has verified:
  - 2.1.1. source MW= sink MW (plus losses, if appropriate)
  - 2.1.2. transaction is between a source balancing authority and a sink balancing authority
  - 2.1.3. there is a contiguous transmission arrangement across transmission service providers from the source to the sink balancing authorities
  - 2.1.4. MW magnitude
  - 2.1.5. Ramp start and stop times
  - 2.1.6. Interchange transaction duration
  - 2.1.7. Reliability authority, balancing authority, and transmission service provider approval
  - 2.1.8. **Communication of confirmed interchange to the involved balancing authorities, reliability authorities, purchasing/selling entities, and transmission service providers.**
- 2.2. Probably need a measure regarding the time frame in which the validation must occur. Not sure if this time frame should be NERC set or NAESB set. An item for discussion.

I took the liberty of including requirement 404 to address the same issue that 2.1.8 is intended to address: IA's must communicate confirmation. You can decide which is more appropriate. I think either will work.

### 3. Regional Differences

This Requirement does not apply in the ERCOT Interconnection because ERCOT operates as a single balancing authority, asynchronous to the Eastern and Western Interconnections.

### 4. Compliance Monitoring Process

- 4.1. The responsible entity shall demonstrate compliance to the compliance monitor within the first year that this standard becomes effective or the first year the entity commences operation by self-certification to the compliance monitor.
- 4.2. Subsequent to the initial compliance review, compliance will be:
  - 4.2.1. Verified by audit at least once every three years.
  - 4.2.2. Verified by spot checks in years between audits.
  - 4.2.3. Verified by annual audits of non-compliant interchange authorities, until compliance is demonstrated.

- 4.2.4. Verified at any time as the result of a complaint. Complaints must be lodged within 60 days of the incident. Complaints will be evaluated by the compliance monitor.
- 4.3. The performance-reset period shall be twelve months from the last non-compliance to 402.1. Balancing authorities found noncompliant shall keep data until deficiencies resulting in noncompliance are resolved. The compliance monitor shall keep audit records for three years.
- 4.4. The responsible entity shall make the following available for inspection by the compliance monitor upon request:
  - 4.4.1. Rolling three months worth of interchange-related data, as listed in 402.2.1.1-402.2.18.
- 4.5. The compliance monitor will verify interchange authority data by comparing it to corresponding balancing and reliability authority, purchasing/selling entity, and transmission service provider data.

## **5. Levels of Noncompliance**

- 5.1. Level one: 90 to 99% of the interchange-related data includes all items in measure 402.2.1.
- 5.2. Level two: 80 to 89% of the interchange-related data includes all items in measure 402.2.1.
- 5.3. Level three: Less than 80% of the interchange-related data includes all items in measure 402.2.1.
- 5.4. Level four: No records available to review.

## **6. Sanctions**

- 6.1. Sanctions for non-compliance shall be applied consistent with the NERC compliance and enforcement matrix (attached to the end of this standard for reference). In cases where financial penalties are assigned for noncompliance, these penalties shall be the fixed dollar sanctions listed in the matrix, not the per MW sanctions.

**403 Response to Interchange Authority****1. Requirement**

- 1.1. The reliability authority, balancing authority and transmission service provider shall respond to a request from an interchange authority to transition an Arranged Interchange to a Confirmed Interchange.

**2. Measures**

- 2.1. The reliability authority, balancing authority and transmission service provider must be able to provide evidence that they responded to each request from an interchange authority.

**3. Regional Differences**

This Requirement does not apply in the ERCOT Interconnection because ERCOT operates as a single balancing authority, asynchronous to the Eastern and Western Interconnections.

**4. Compliance Monitoring Process**

- 4.1. The responsible entity shall demonstrate compliance to the compliance monitor within the first year that this standard becomes effective or the first year the entity commences operation by self-certification to the compliance monitor.
- 4.2. Subsequent to the initial compliance review, compliance will be:
  - 4.2.1. Verified by audit at least once every three years.
  - 4.2.2. Verified by spot checks in years between audits.
  - 4.2.3. Verified by annual audits of non-compliant interchange authorities, until compliance is demonstrated.
  - 4.2.4. Verified at any time as the result of a complaint. Complaints must be lodged within 60 days of the incident. Complaints will be evaluated by the compliance monitor.
- 4.3. The performance-reset period shall be twelve months from the last non-compliance to 402.1. Balancing authorities found noncompliant shall keep data until deficiencies resulting in noncompliance are resolved. The compliance monitor shall keep audit records for three years.
- 4.4. The responsible entity shall make the following available for inspection by the compliance monitor upon request:
  - 4.4.1. Rolling three months worth of hourly interchange records that indicate that each interchange authority request was responded to.
- 4.5. The compliance monitor will verify balancing and reliability authority, purchasing/selling entity and transmission service provider data by comparing it to corresponding interchange authority data.

**5. Levels of Noncompliance**

- 5.1. Level one: (Not specified).
- 5.2. Level two: (Not specified).
- 5.3. Level three: (Not specified).



5.4. Level four: Evidence not available or not provided.

**6. Sanctions**

6.1. Sanctions for noncompliance shall be applied consistent with the NERC compliance and enforcement matrix (attached to the end of this standard for reference). In cases where financial penalties are assigned for noncompliance, these penalties shall be the fixed dollar sanctions listed in the matrix, not the per MW sanctions.

**404 Interchange Authority Disseminates Confirmation****1. Requirement**

- 1.1. The interchange authority shall communicate whether the interchange transaction has transitioned to an interchange schedule to all parties involved in the transaction.

**2. Measures**

- 2.1. For each interchange transaction, the interchange authority shall be able to provide evidence that it has communicated the appropriate final status to all parties involved in the transaction.

**3. Regional Differences**

This Requirement does not apply in the ERCOT Interconnection because ERCOT operates as a single balancing authority, asynchronous to the Eastern and Western Interconnections.

**4. Compliance Monitoring Process**

- 4.1. The responsible entity shall demonstrate compliance to the compliance monitor within the first year that this standard becomes effective or the first year the entity commences operation by self-certification to the compliance monitor.
- 4.2. Subsequent to the initial compliance review, compliance will be:
  - 4.2.1. Verified by audit at least once every three years.
  - 4.2.2. Verified by spot checks in years between audits.
  - 4.2.3. Verified by annual audits of non-compliant interchange authorities, until compliance is demonstrated.
  - 4.2.4. Verified at any time as the result of a complaint. Complaints must be lodged within 60 days of the incident. Complaints will be evaluated by the compliance monitor.
- 4.3. The performance-reset period shall be twelve months from the last non-compliance to 402.1. Balancing authorities found noncompliant shall keep data until deficiencies resulting in noncompliance are resolved. The compliance monitor shall keep audit records for three years.
- 4.4. The responsible entity shall make the following available for inspection by the compliance monitor upon request:
  - 4.4.1. Rolling three months worth of hourly interchange records that indicate that each interchange authority request was responded to.
- 4.5. The compliance monitor will verify interchange authority data by comparing it to corresponding balancing and reliability authority, purchasing/selling entity and transmission service provider data.

**5. Levels of Noncompliance**

- 5.1. Level one: (Not specified).
- 5.2. Level two: (Not specified).
- 5.3. Level three: (Not specified).
- 5.4. Level four: Evidence not available or not provided.

**6. Sanctions**

- 6.1. Sanctions for noncompliance shall be applied consistent with the NERC compliance and enforcement matrix (attached to the end of this standard for reference). In cases where financial penalties are assigned for noncompliance, these penalties shall be the fixed dollar sanctions listed in the matrix, not the per MW sanctions.

## Sanctions Table

The matrix of compliance sanctions that follows was developed by the NERC Compliance Subcommittee as part of the NERC Compliance Enforcement Program and was approved by the NERC Board of Trustees.

Levels of noncompliance are tied to this matrix. The matrix is divided into four levels of increasing noncompliance vertically and the number of violations in a defined period at a given level horizontally.

Note that there are three sanctions that can be used: a letter, a fixed fine, and a \$/MW fine.

### Letter

This sanction is used to notify company executives, regional officers, and regulators that an entity is non-compliant. The distribution of the letter varies depending on the severity of the noncompliance. The intent of a letter sanction is to bring noncompliance to the attention of those who can influence the actions of an organization so as to become compliant.

- Letter (A) — Letter to the entity’s vice president level or equivalent informing the entity of noncompliance, with copies to the data reporting contact, and the entity’s highest ranking Regional Council representative.
- Letter (B) — Letter to the entity’s chief executive officer or equivalent, with copies to the data reporting contact, the entity’s highest ranking Regional Council representative, and the vice president over the area in which noncompliance occurred.
- Letter (C) — Letter to the entity’s chief executive officer and chairman of the board, with copies to the NERC president, regulatory authorities having jurisdiction over the noncompliant entity (if requested by such regulatory authorities), the data reporting contact, the entity’s highest ranking Regional Council representative, and the vice president over the area in which noncompliance occurred.

### Fixed Dollars

This sanction is to be used when a letter sanction is not sufficient and a stronger message is desired. Fixed dollars are typically assigned as a one-time fine that is ideal for measures involving planning-related standards. Many planning actions use forward-looking assumptions. If those assumptions prove wrong in the future, yet they are made in good faith using good practices, entities should not be harshly penalized for the outcome.

### Dollar per MW

Dollar/MW sanctions are intended to be used primarily for operationally based standards. The ‘MW’ can be load, generation, or flow on a line. The reasonableness of the sanction must be considered when assessing \$/MW penalties. Assessing large financial penalties is not the goal, but rather achieving compliance.

Occurrence Period Category	Number of Violations in Occurrence Period at a Given Level			
	1 <sup>st</sup> Period of Violations (Fully Compliant Last Period)	1	2	3
2 <sup>nd</sup> Consecutive Period of Violations		1	2	3 or more
		\$ Sanction from Table; Letter (C) only if Letter (B) previously sent		
3 <sup>rd</sup> Consecutive Period of Violations		1	2 or more	
		\$ Sanction from Table; Letter (C) only if Letter (B) previously sent		
4 <sup>th</sup> or greater Consecutive Period of Violations		1		
		\$ Sanction from Table; Letter (C)		

Level of Non-Compliance	Sanctions Associated with Noncompliance			
	Level 1	Letter (A)	Letter (A)	Letter (B) and \$1,000 or \$1 Per MW
Level 2	Letter (A)	Letter (B) and \$1,000 or \$1 Per MW	Letter (B) and \$2,000 or \$2 Per MW	Letter (B) and \$4,000 or \$4 Per MW
Level 3	Letter (B) and \$1,000 or \$1 Per MW	Letter (B) and \$2,000 or \$2 Per MW	Letter (B) and \$4,000 or \$4 Per MW	Letter (B) and \$6,000 or \$6 Per MW
Level 4	Letter (B) and \$2,000 or \$2 Per MW	Letter (B) and \$4,000 or \$4 Per MW	Letter (B) and \$6,000 or \$6 Per MW	Letter (B) and \$10,000 or \$10 Per MW

#### Interpreting the Tables:

- These tables address penalties for violations of the same measure occurring in consecutive compliance reporting periods.
- If a participant has noncompliant performance in consecutive compliance reporting periods, the sanctions applied are more punitive.

# Coordinate Interchange Standard Reference Document

## Draft Version 1

### **Introduction**

To date, both reliability and business concerns have driven the development of NERC's Policy on "**INTERCHANGE**". NERC's posted SAR on Coordinate Interchange focuses the Standard strictly on the reliability issues surrounding ACE, reserving the business aspects to NAESB.

This document is intended for use as a reference document to explain the assumptions and thoughts of the Coordinate Interchange Standard Drafting Team in the creation of the Standard.

It is important to note that this Standard is **not** intended to replace the existing NERC Policy 3.

Because the Standard is to "stand on its own," it does not mandate specific tools, formats or methods that shall be used in achieving successful compliance with the requirements defined in the Standard. This means that although the current E-Tagging process is not mandated in the standard neither is its use precluded. Similarly, manual processes such as email, phone, fax, or other mechanisms, although perhaps not as efficient as automated mechanisms, are also not precluded. This is consistent with the goal of the Standard to focus on reliability issues and not how they might be accomplished.

The requirements associated with this Standard are intended to address reliability issues only and do not address issues associated with certification as a functional model role referenced in the Standard. In addition, the Standard contains only those reliability requirements which are measurable such that compliance can be determined.

Finally, the Standard requirements are assumed to be those associated with bilateral interchange (i.e. between a source and a sink location occurring at the same time in equal and opposite directions).

### **Relationship to the SAR**

The Standard Drafting Team, as defined by the NERC Standards process, utilized the content of the Standard Authorization Request as the basis for the corresponding standard. The Drafting Team is required to strictly address the content of the SAR. It is not allowed the flexibility to include issues in the Standard that are not included in the SAR and should explain issues in the SAR that it chooses to not address in the Standard. An example of an issue which some may consider part of "Coordinate Interchange" is communication by the IA of an implemented interchange to the existing Interchange Distribution Calculator (IDC) tool. Such a communication is not part of requirements in the SAR and thus is not included in the Standard.

Appendix A of this document compares the compliance measurements in the SAR with how they are handled (or not) in the Standard.

### **Relationship to Functional Model**

The standard (as well as the SAR from which it is derived) utilizes the terminology defined in the NERC Functional Model Version 1. The Functions used in the Standard are:

- Interchange Authority (IA)
- Balancing Authority (BA)
- Reliability Authority (RA)
- Transmission Service Provider (TSP)
- Purchasing/Selling Entity (PSE)

It has been discussed in various forums how many Interchange Authorities can exist. Neither the Functional Model nor the Standard imposes any upper or lower limit on the number of Interchange Authorities that can exist.

Special internal interchange activities that occur within a market or RTO model are assumed to be addressed within the functional model and are not handled as exceptions in the Standard. For example, a scheduling entity that provides approved interchange to internal BA's within an RTO market structure is assumed in the standards to function as a BA in its interactions with the IA.

The relationship of the Functions included in this Standard are assumed to be consistent with the roles outlines in the Functional Model. For example, the BA is only to obtain the Implemented Interchange information from a single IA for each Confirmed Interchange. This does not preclude one physical entity from being certified by NERC to represent multiple functions in the interchange process. For example, if certified as such, the same entity performing PSE activities could also perform IA activities and provide interchange information to the BA's for implementation.

### **Terminology**

A major problem faced by both the SAR and Standards Drafting Teams has been terminology. The terminology problem is partially a result of the inconsistent use of terms used in the NERC Policies and Standards, in particular the term "*interchange*" as well as the terms "*transactions*" and "*schedules*". The Standards Drafting Team's objective is to retain the intent of the standards without resorting to redundant terminology. To accomplish this objective, the Team focused on precise definition of the various steps in the decision making process that results in what goes into the ***NET SCHEDULED INTERCHANGE*** term of the ACE equation.

Any discussion of ***INTERCHANGE*** must start with the use of the term as it applies to the control performance measure Area Control Error (ACE). ACE uses ***INTERCHANGE*** as a power flow (either agreed to obligation for power or metered power). Each control area

(using the classic term for the Functional Model's BALANCING AUTHORITY) that is part of the agreement implements the agreement under the terms and conditions specified. NERC must ensure that both Control Areas implement the same agreement at the same time and in equal and opposite directions.

$$ACE = (\text{Net Scheduled Interchange} - \text{NET Actual Interchange}) + B (\text{Scheduled Frequency} - \text{Actual Frequency})$$

In order to understand the terminology used by the Standard, it is useful to refer to Appendix B that describes the various stages and their transition in the life cycle of the Interchange as addressed by the Standard.

Appendix B was used as the basis for the following definitions used in the Standard.

**Interchange:** Energy transfers that cross balancing authority boundaries.

**Arranged Interchange:** The state where the purchasing/selling entity has obtained all necessary approvals to submit the interchange to the interchange authority.

**Confirmed Interchange:** The state where the interchange authority has validated approvals and is ready to submit the interchange to the balancing authorities.

**Implemented Interchange:** The state where the balancing authority enters the confirmed interchange into its area control error equation.

Special attention needs to be given to that stage of the life cycle prior to the Arranged Interchange state. This period, called the Proposed Interchange stage, is that period when it is assumed the PSE is putting together the business arrangements and preliminary reliability approvals. The Standard Drafting Team assumes that agreements (including transmission reservations) at this stage can be put together in a piecemeal fashion and that the business arrangement does not become an Arranged Interchange until all the involved RA's and BA's give their assent to the PSE. Who starts the proposal; who is contacted; what is the order of contact; what business requirements are needed to be met in order to obtain agreement to the proposal - are all NOT part of this NERC Standard. Implied in the NERC Standard is that prior to becoming an Arranged Interchange is that all the business requirements associated with the agreements are settled - otherwise the PSE would not get consent of all the entities and the life cycle would end before entering the reliability stages.

### **Timing**

The timing of the communications between the functional model roles defined in the Standards requirements are not explicitly provided in the Standard. From a reliability perspective, it is only important that the required communication occur - not when they occur (except that they occur before the defined start date/time provided in the Arranged Interchange data). It is acknowledged by the Drafting Team that the functional entities will have practical timing requirements such as minimum lead times in order for them to perform their activities. The appropriateness of these times, however, is considered a business issue and not one of reliability. If a Function's timing is not met, it is assumed



its approval will not be provided and the Interchange will fail to become an Implemented Interchange.

Among the concerns expressed with the issue of timing is “Will entities be held hostage to their approvals? What if an entity holds out so long as to render another entity’s approval invalid?” The Drafting Team interpreted the term APPROVAL as more than just YES or NO. The Team recognized that approvals would most likely come in the form of ‘conditional’ approvals. *{e.g. “This proposed agreement has my approval up to 5 minutes before the hour. If the IA has not returned its validation then the proposal is denied}*. The Drafting Team assumes that such conditional approvals will prevent one set of entities holding another set of entities hostage as the latter group awaits the former group’s response to a proposed interchange.

### **Dynamic Schedules**

The use of Dynamics Schedules are assumed to be a type of bilateral interchange that is covered by the requirements of this Standard. The Implemented Interchange defined by the telemetered quantities associated with the Dynamic Schedule is applied to the Net Scheduled Interchange term of the ACE equation just like traditional “Block” interchange. **Not true!!!**

### **DC Ties**

The application of this Standard to DC ties is determined by how the BA’s involved on either side of the DC tie handles the tie in the ACE equations. Many BA’s do not include the DC tie interchange in their ACE’s Net Scheduled Interchange component choosing instead to handle the tie as another load or generator in its area. In this case, the DC tie interchange is not subject to this Standard. Conversely, if the DC tie interchange is included in the ACE’s Net Scheduled Interchange component, it would be subject to this Standard.

### **Losses**

The settlement of losses incurred when implementing interchange can be handled either as financial or as energy “payment in kind.” In either case, loss settlement is primarily a business issue and only involves reliability when losses are handled as interchange. It has been assumed by the Drafting Team that losses will be handled conceptually in the Standard as outlined in the Functional Model Version 1 document (Technical Discussion 1 – Interchange Scheduling Process – Figure 7). In that document, all bilateral schedules are equal and opposite in direction for a source and sink BA’s and losses settled as energy are merely a “component” interchange of a larger “composite” interchange involving the generation, load and intermediate BA’s

## Changes to Interchange

The issues associated with changes to Implemented Interchange have not been completely addressed by the Drafting Team. The life cycle outlined in Appendix B and described by the SAR clearly outlines the communications and transitions associated with creating an Implemented Interchange. If at some point prior to being implemented, one of the involved functions that had previously agreed to a Confirmed or Arranged Interchange subsequently denies the interchange, although a change would seem to have occurred, in fact, from a reliability perspective, the interchange never was implemented. This may occur for example if, due to new operating conditions, an RA determines that a Confirmed Interchange can no longer be implemented.

Once an interchange becomes implemented, however, Figure 1 does not clearly describe how the change is communicated such that the Implemented Interchange will be changed as required. This is particularly important in the case of an emergency change. While an emergency change may occur where one of the BA's also acts as the IA in order to quickly accomplish the desired interchange adjustment, the requirements applicable in this Standard may not be clear. It is possible that another SAR dealing with Changing Interchange may be appropriate.

## Transition Issues

Because this Standard is very focused in its scope and is not intended to be a replacement for Policy 3, the transition to this Standard may also require the completion of other NERC Standards as well as NAESB business practices.

Although there is a concern about a transitional problem of having too many **INTERCHANGE AUTHORITIES** or that there will be too few **INTERCHANGE AUTHORITIES** to make the standard feasible – the Drafting Team agrees that the standard must stand alone apart from such transitional concerns. The Standards Manager and the SAC will decide on the need for field testing or even holding the standard in abeyance until the necessary business standards are in place.

## Appendix A – SAR and Draft Standard requirement comparison

SAR Requirement	Standard Requirement	Standard Measurement	Comment
<p>BA shall confirm (with the IA) its approval or denial of the requested Interchange <b>Do we want to leave the SAR requirement as it was stated in the SAR?</b></p>	<p>403- The reliability authority, balancing authority and transmission service provider shall respond to a request from an interchange authority to transition an arranged interchange to a confirmed interchange.</p>	<p>The reliability authority, balancing authority and transmission service provider must provide evidence that they responded to each request from an interchange authority.</p>	<p>Included</p>
<p>BAs shall implement Interchange exactly as agreed upon in the interchange confirmation process</p>	<p>401- The balancing authority shall implement confirmed interchange exactly as agreed upon in the interchange confirmation process.</p>	<p>The balancing authority shall provide evidence that implemented interchange matches confirmed interchange with involved interchange authorities. a. Evidence shall demonstrate that the interchange was implemented in the balancing authority's area control error equation, or the system that calculates the area control error equation. Evidence may be on a net basis or an individual interchange basis.</p>	<p>Included</p>
<p>The IA shall confirm the approvals from all involved parties (RAs, BAs, TSPs) and shall authorize, upon</p>	<p>402- The interchange authority shall confirm that arranged interchange is balanced, <b>valid</b></p>	<p>For interchange that is transitioned from arranged to confirmed, the interchange authority shall show evidence that it has verified:</p>	<p>Included in the measure for this requirement</p>

SAR Requirement	Standard Requirement	Standard Measurement	Comment
confirming approvals, the implementation of Interchange	and reviewed for reliability prior to transitioning it into confirmed interchange.	<ul style="list-style-type: none"> <li>- source MW= sink MW (plus losses, if appropriate)</li> <li>- interchange is between a source balancing authority and a sink balancing authority</li> <li>- there is a contiguous transmission arrangement across transmission service providers from the source to the sink balancing authorities</li> <li>- MW magnitude</li> <li>- Ramp start and stop times</li> <li>- Interchange duration</li> <li>- Reliability authority, balancing authority, and transmission service provider approval</li> <li>-</li> </ul>	
The IA shall confirm that Interchange is balanced and valid prior to physical delivery	402- The interchange authority shall confirm that arranged interchange is balanced, <b>valid</b> and reviewed for reliability prior to transitioning it into confirmed interchange.	<p>For interchange that is transitioned from arranged to confirmed, the interchange authority shall show evidence that it has verified:</p> <ul style="list-style-type: none"> <li>- source MW= sink MW (plus losses, if appropriate)</li> <li>- interchange is between a source balancing authority and a sink balancing authority</li> <li>- there is a contiguous transmission arrangement across transmission service providers from the source to the sink balancing authorities</li> </ul>	Included

<b>SAR Requirement</b>	<b>Standard Requirement</b>	<b>Standard Measurement</b>	<b>Comment</b>
		<ul style="list-style-type: none"> <li>- MW magnitude</li> <li>- Ramp start and stop times</li> <li>- Interchange duration</li> <li>- Reliability authority, balancing authority, and transmission service provider approval</li> <li>-</li> </ul>	
The IA shall communicate implementation status to all parties (with which the Interchange must be coordinated)	404- The interchange authority shall communicate whether the arranged interchange has transitioned to confirmed interchange to all parties involved in the interchange.	The interchange authority shall provide evidence that it has communicated the appropriate final status of arranged interchange to all parties involved in the interchange. -	Included
The RA shall receive and confirm Interchange information with the IA	403- The reliability authority, balancing authority and transmission service provider shall respond to a request from an interchange authority to transition an arranged interchange to a confirmed interchange.	The reliability authority, balancing authority and transmission service provider must provide evidence that they responded to each request from an interchange authority.	Included
The RA shall approve	.	-	

<b>SAR Requirement</b>	<b>Standard Requirement</b>	<b>Standard Measurement</b>	<b>Comment</b>
or deny the request from the IA based on <b>reliability perspectives</b>			Not specifically stated in the Standard do we need to add a statement that requires the RA to review the request based on reliability perspectives?
TSP shall receive and confirm Interchange information with the IA	403- The reliability authority, balancing authority and transmission service provider shall respond to a request from an interchange authority to transition an arranged interchange to a confirmed interchange.	The reliability authority, balancing authority and transmission service provider must provide evidence that they responded to each request from an interchange authority.	Included
The TSP shall approve or deny the request from the IA	403- The reliability authority, balancing authority and transmission service provider shall respond to a request from an interchange authority to transition an arranged interchange to a confirmed interchange.	The reliability authority, balancing authority and transmission service provider must provide evidence that they responded to each request from an interchange authority.	Included
When an entity desires to transfer energy, the	402-	For interchange that is transitioned from arranged to confirmed, the interchange	Included in the measure for this requirement

<b>SAR Requirement</b>	<b>Standard Requirement</b>	<b>Standard Measurement</b>	<b>Comment</b>
<p>entity initiating the interchange shall submit, as a minimum, the following reliability-related interchange data to its IA:</p> <ul style="list-style-type: none"> <li>- Desire to transfer energy</li> <li>- Megawatt magnitude</li> <li>- Ramp start and stop times</li> <li>- Interchange duration</li> <li>- Sufficient information for all approval entities</li> </ul>	<p>The interchange authority shall confirm that arranged interchange is balanced, <b>valid</b> and reviewed for reliability prior to transitioning it into confirmed interchange.</p>	<p>authority shall show evidence that it has verified:</p> <ul style="list-style-type: none"> <li>- source MW= sink MW (plus losses, if appropriate)</li> <li>- interchange is between a source balancing authority and a sink balancing authority</li> <li>- there is a contiguous transmission arrangement across transmission service providers from the source to the sink balancing authorities</li> <li>- MW magnitude</li> <li>- Ramp start and stop times</li> <li>- Interchange duration</li> <li>- Reliability authority, balancing authority, and transmission service provider approval</li> </ul>	<p>(note the standard does not address what should be submitted but it is included by default because these items are in the measure for requirement402)</p>
<p>The PSE shall request approval for interchange from the IA</p>	<p>Not Included</p>		<p>This requirement is redundant to the requirement to submit the data</p>
<p>The PSE shall confirm interchange requirements with the IA</p>		<p>-</p>	<p>Not in the Standard do we need to add a requirement that the PSE respond to a request to transition</p>

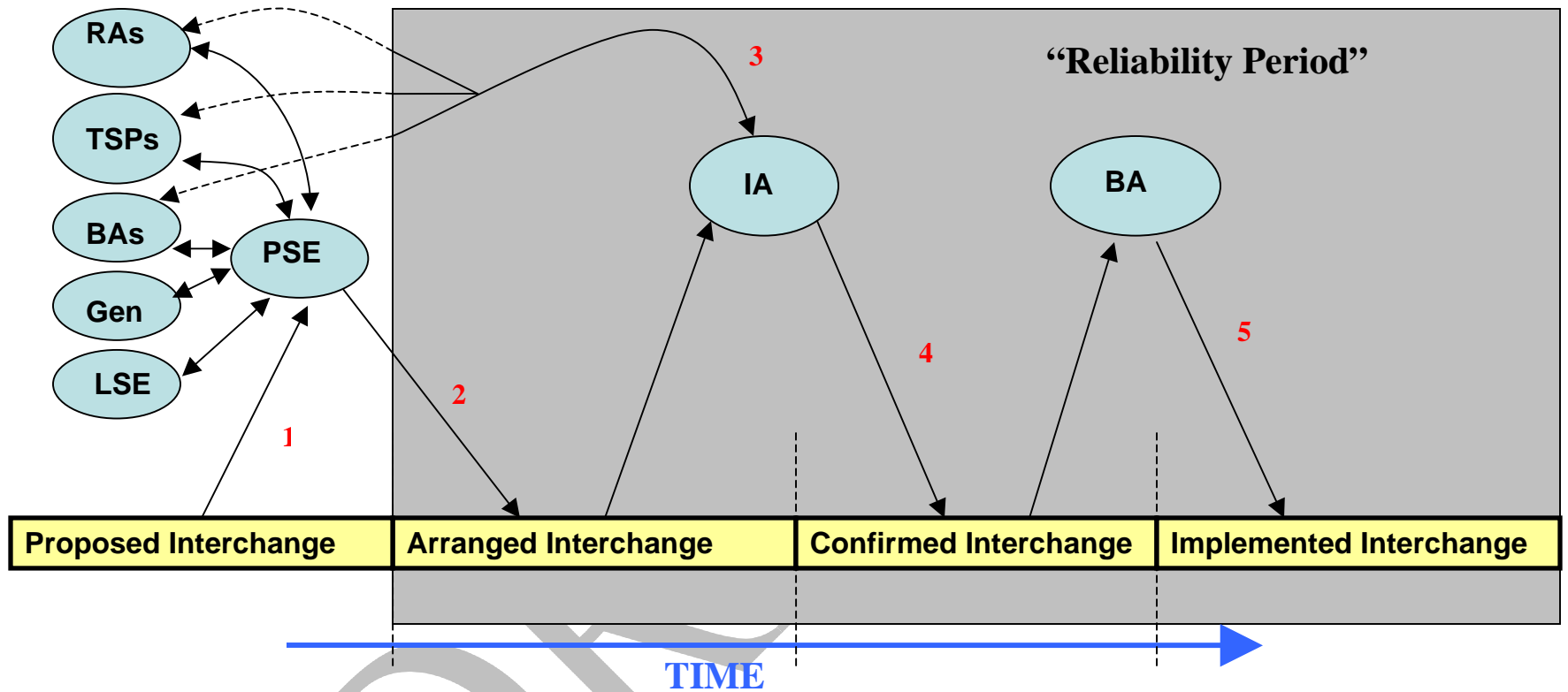
<b>SAR Requirement</b>	<b>Standard Requirement</b>	<b><u>Standard Measurement</u></b>	<b><u>Comment</u></b>
			arranged interchange to confirmed interchange?

DRAFT



**APPENDIX B**  
**Life Cycle Stages of Interchange**

DRAFT



Data Flow:

- 1- PSE receives request for Proposed Interchange
- 2- After receiving all required business agreement, PSE communicates Arranged Interchange
- 3 - IA requests and receives approvals in order to perform required validation
- 4 - Upon validation, IA creates Confirmed Interchange and communicates
- 5 - BA's create Implemented Interchange with entry into ACE equation

**Comment Form – 1st Posting of the draft ‘Coordinate Interchange’ Standard**

*Note – This form is to be used to comment on version 1 of the Coordinate Interchange Standard.*

*Comments will be accepted from December 1, 2003 – January 31, 2004.*

***Please review the draft standard and answer the questions in the yellow boxes. Send completed comment forms to [sarcomm@nerc.com](mailto:sarcomm@nerc.com)***

*If you have questions, please call Tim Gallagher at 609-452-8060 or send a question to [tim.gallagher@nerc.net](mailto:tim.gallagher@nerc.net)*

**SAR Commenter Information (For comment from individual entities)**

Name

Organization

Industry Segment #

Telephone

E-mail

**Key to Industry Segment #'s:**

- 1 – Trans. Owners
- 2 – RTO's, ISO's, RRC's
- 3 – LSE's
- 4 – TDU's
- 5 - Generators
- 6 - Brokers, Aggregators, and Marketers
- 7 - Large Electricity End Users
- 8 - Small Electricity Users
- 9 - Federal, State, and Provincial  
Regulatory or other Govt. Entities



**1. This standard does not require the use of any specific tool or electronic tagging (ETAG) system for purposes of verifying and tracking interchange but permits the entities to use whatever process they desire. The use of ETAG systems would certainly meet the requirements, but the standard does not force the use of the tool. Do you agree?**

Yes

No

Comments

**2. Is it possible that reliability may be impacted if the use of a single tool is not required?**

Yes

No

Comments

Actually I think that mandating a tool violates one of the Business Principles

**3. NERC Regions have the right to ask for Regional differences for inclusion in NERC standards. Such differences would apply only to the listed Region and would become an enforceable part of the NERC standard only if approved by the industry. ERCOT has requested an Interconnection difference for this standard. Do you think ERCOT’s request is appropriate?**

Yes

No

Comments

I thought they asked for a regional difference versus an Interconnection Defference.

**4. Are you aware of any other Regional differences that should be included in this standard?**

Yes

No

Comments

**5. Do you agree with the sanction philosophy in this standard of using percentages rather than absolute counts to determine levels of compliance? Percentages were chosen so as to levelize any penalty in proportion to activity. The outcomes of the proposed sanction philosophy is that a small entity that has a problem with 2 of 10 possible items will be treated the same as a large entity that has a problem with 20 of 100 possible items.**

**6.**

Yes

No

Comments

**7. This standard does not dictate a specific deadline (i.e. timing) for requesting, approving, or implementing interchange, but rather leaves up to the parties involved in the interchange. Do you agree with this approach?**

Yes

No

Comments

**8. Definitions of key terms used in the standard are attached to the standard. Please offer any suggested improvements to these definitions in the space below.**

Interchange:

Arranged Interchange:

Confirmed Interchange:

Implemented Interchange:

**9. The standard does not address the portions of interchange that are arranged prior to submission to the interchange authority. It is assumed that these arrangements are business practices and are more appropriately handled as such. Agree?**

Yes

No

Comments

**10. Do you agree with the proposed requirements and measurements in section 401?**

Yes

No

Comments

**11. Do you agree with the proposed compliance monitoring process in section 401?**

Yes

No

Comments

**12. Do you agree with the proposed levels of non-compliance in section 401?**

Yes

No

Comments

**13. Do you agree with the proposed requirements and measurements in section 402?**

Yes

No

Comments

**14. Do you agree with the proposed compliance monitoring process in section 402?**

Yes

No

Comments

**15. Do you agree with the proposed levels of non-compliance in section 402?**

Yes

No

Comments

**16. Do you agree with the proposed requirements and measurements in section 403?**

Yes

No

Comments

**17. Do you agree with the proposed compliance monitoring process in section 403?**

Yes

No

Comments

**18. Do you agree with the proposed levels of non-compliance in section 403?**

Yes

No

Comments

**19. Do you agree with the proposed requirements and measurements in section 404?**

Yes

No

Comments



**20. Do you agree with the proposed compliance monitoring process in section 404?**

Yes

No

Comments

**21. Do you agree with the proposed levels of non-compliance in section 404?**

Yes

No

Comments

**22. The drafting team carefully reviewed and discussed the SAR associated with this standard and believes that all the listed requirements have been met in the 4 requirements included in the standard (see table). Do you agree?**

Yes

No

Comments

**23. Do you agree with the concept that Implemented Interchange requires equal and opposite use by two BA's in their ACE equations and that losses will be handled as just another type of interchange when being settled as energy exchange?**

Yes

No

Comments

**24. Do you agree that Dynamic Schedules would be covered by this standard as just another type of bilateral interchange?**

Yes

No

Comments

**25. Do you agree that this standard can handle the reliability requirements for implementing changes to the parameters of an already implemented interchange?**

Yes

No

Comments

**26. Is this standard ready for ballot? What additional clarification, details, or modifications to this standard are necessary before it can be brought to ballot?**

Yes

No

Comments

**27. Please enter any other comments you have regarding this standard in the space below.**

Comments