

Standard Development Timeline

This section is maintained by the drafting team during the development of the standard and will be removed when the standard becomes effective.

Development Steps Completed

1. SAR posted for comment (July 2, 2008 through July 31, 2008).
2. Revised SAR and response to comments posted (December 1, 2008).
3. SC authorized moving the SAR forward to standard development (December 16–17, 2008).
4. SDT appointed on (February 12, 2009).
5. First draft of proposed standard posted (November 10, 2009).
6. Project became inactive until February, 2013.
7. Second draft of standard posted for 30 day informal comment period (July 25-August 23, 2013).

Description of Current Draft

This is the ~~second~~third draft of the proposed standard and is being posted for stakeholder comments and an initial ballot. This draft includes the modifications based on comments submitted by stakeholders, as well as items identified in the SAR and applicable FERC directives from FERC Order 693.

Anticipated Actions	Anticipated Date
45-day Formal Comment Period with Parallel Initial Ballot	July <u>September - October</u> 2013
Recirculation ballot	October <u>December</u> 2013
BOT adoption	November 2013 <u>January 2014</u>
File standard with regulatory authorities.	December 2013 <u>February 2014</u>

Effective Dates

First day of the second calendar quarter ~~beyond~~after the date ~~that~~ this standard is approved by an applicable regulatory authorities, or governmental authority or as otherwise provided for in those jurisdictions~~a jurisdiction~~ where ~~regulatory~~ approval by an applicable governmental authority is required for a standard to go into effect. Where approval by an applicable governmental authority is not required, the standard ~~becomes~~shall become effective on the first day of the ~~second~~first calendar quarter ~~beyond~~that is six months after the date this standard is ~~approved~~adopted by the NERC Board of Trustees, or as otherwise ~~made effective pursuant to the laws applicable to such ERO governmental authorities~~provided for in that jurisdiction.

Version History

Version	Date	Action	Change Tracking
0	April 1, 2005	Effective Date	New
1	May 2, 2006	Adopted by the NERC Board of Trustees	Revised
2	October 9, 2007	Adopted by the NERC Board of Trustees (Removal of WECC Waiver)	Revised
2	July 21, 2008	Approved by FERC	Revised
3	TBD	Adopted by the NERC Board of Trustees	Revised under Project 2008-12

Definitions of Terms Used in Standard

This section includes all newly defined or revised terms used in the proposed standard. Terms already defined in the Reliability Standards Glossary of Terms are not repeated here. ~~New or revised definitions listed below become approved when the proposed standard is approved.~~

When the standard becomes effective, these defined terms will be removed from the individual standard and added to the Glossary.

Proposed revisions to existing definitions (redlined to show changes):

Dynamic Interchange Schedule or Dynamic Schedule: A time-varying energy transfer ~~telemetered reading or value~~ that is updated in real time and ~~used~~ included in the Net Interchange Scheduled term in the same manner as an Interchange Schedule in the affected Balancing Authorities' control ACE equations (or alternate control processes). ~~as a schedule in the AGC/ACE equation and the integrated value of which is treated as a schedule for interchange accounting purposes. Commonly used for scheduling jointly owned generation to or from another Balancing Authority Area.~~

Pseudo-Tie: A time-varying energy transfer ~~telemetered reading or value~~ that is updated in real time and included in the Net Interchange Actual term in the same manner as a Tie Line in the affected Balancing Authorities' control ACE equations (or alternate control processes). ~~used as a "virtual" tie line flow in the AGC/ACE equation but for which no physical tie or energy metering actually exists. The integrated value is used as a metered MWh value for interchange accounting purposes.~~

Standards impacted by the above revisions: BAL-002-WECC-2, BAL-003-0.1b and BAL-005-0.2b

Request for Interchange (RFI) - A collection of data as defined in the NAESB ~~Business Practice Standards RFI Datasheet~~, to be submitted to the ~~Interchange Sink~~ Balancing Authority for the purpose of implementing bilateral Interchange between a Source and Sink Balancing Authority ~~or within a single Balancing Authority.~~

Arranged Interchange - The state where the ~~Interchange Sink~~ Balancing Authority has received the Interchange information ~~or intra-Balancing Authority transfer information~~ (initial or revised).

Confirmed Interchange - The state where ~~the Sink Balancing no party has denied and all required parties have approved the Interchange Authority has verified~~ the Arranged Interchange.

Sink Balancing Authority - The Balancing Authority in which the load (sink) is located for an Interchange Transaction ~~and the resulting Interchange Schedule. (This will also be a Receiving Balancing Authority for the resulting Interchange Schedule.)~~

Intermediate Balancing Authority - A Balancing Authority ~~involved in on the scheduling path of an Interchange Transaction other than the Source Balancing Authority and Sink Balancing Authority. Area that has connecting facilities in the Scheduling Path between the Sending Balancing Authority Area and Receiving Balancing Authority Area and operating agreements that establish the conditions for the use of such facilities.~~

Proposed new definitions:

Attaining Balancing Authority: A Balancing Authority bringing generation or load into its effective control boundaries through a dynamic transfer from the Native Balancing Authority.

Native Balancing Authority: A Balancing Authority from which a portion of its physically interconnected generation and/or load is transferred from its effective control boundaries to the Attaining Balancing Authority through a dynamic transfer.

When this standard has received ballot approval, the text boxes will be moved to the Application Guidelines Section of the Standard.

A. Introduction

1. **Title:** Dynamic Transfers
2. **Number:** INT-004-3
3. **Purpose:** To ensure Dynamic Schedules and Pseudo-Ties are communicated and accounted for appropriately in congestion management procedures.
4. **Applicability:**
 - 4.1. Balancing Authority
 - 4.2. Load-Serving Entity
5. **Background:**

This standard was revised as part of the Project 2008-12 Coordinate Interchange Standards effort to ensure the transparency of dynamic transfers.

- R1 is modified from Requirement R1 of INT-001-3 and transferred into INT-004-3. The revised requirement replaces the Purchasing Selling Entity with the Load Serving Entity and Pseudo-Ties were added.
- R2 areis modified from INT-004-2 to incorporate separate the triggers for the review of the dynamic transfer and when a modification is required for the dynamic transfer.
- R1 and R2 now also apply to Pseudo-Ties. The requirements to submit a RFI for each Pseudo-Tie that are comparable to the existing requirements for Dynamic Schedules. The requirements in this standard to create an RFI for Pseudo Ties ensure that all entities involved are aware of the dynamic transfer and agree that that the various responsibilities associated with the dynamic transfer have been agreed upon.
- ~~R2R3 is modified to separate the triggers for the review of the dynamic transfer and when a modification is required for the dynamic transfer.~~
- ~~R3 and R4 are~~ created to address theensure that coordination ~~that must~~ occur occurs between all entities involved prior to the initial implementation of a Pseudo-Tie.
- ~~The responsibilities that must be determined when establishing a Pseudo-Tie extend to such items as Disturbance Control Standard (DCS) recovery, load shedding, transmission and ancillary services, and load forecasting. The Guidelines and Technical Basis section of this standard summarizes~~ was added to provide a summary of the considerations that must be given when establishing any dynamic transfer.

B. Requirements and Measures

Rationale for R1: This Requirement is intended to ensure that an RFI is submitted for a Dynamic Schedule or Pseudo-Tie. If a forecast is available, it is expected that the forecast will be used to indicate the energy profile on the RFI.

R1. Each Load-Serving Entity that secures energy to serve Load via a Dynamic Schedule or Pseudo-Tie shall ensure that a Request for Interchange is submitted as an on-time Arranged Interchange to the Sink Balancing Authority for that Dynamic Schedule or Pseudo-Tie ~~at either;~~ unless the information about the Pseudo-Tie is included in congestion management procedure(s) via an alternate method. [Violation Risk Factor: Lower] [Time Horizon: Operations Planning, Same-day Operations]

- ~~The expected average MW profile for each hour if a forecast for the Dynamic Schedule or Pseudo-Tie is available, or~~
- ~~The expected maximum MW profile for each hour if no forecast for the Dynamic Schedule or Pseudo-Tie is available.~~

M1. The Load-Serving Entity shall have evidence (such as dated and time-stamped electronic logs or other evidence) that ~~RFIs were a~~ Request for Interchange was submitted for Dynamic Schedules and Pseudo-Ties on-time ~~and either at.~~ For Pseudo-Ties included in congestion management procedure(s) via an alternate method, the ~~expected average profile~~ Load-Serving Entity shall have evidence such as IDC model data or written / electronic agreement with a Balancing Authority to include the expected maximum profile for each hour. Pseudo-Tie in the congestion management procedure(s). (R1)

R2. Each Load-Serving Entity that ~~secures energy to serve Load via~~ submits a Dynamic Schedule or Pseudo-Tie Request For Interchange in accordance with Requirement R1 shall ensure the Confirmed Interchange associated with that Dynamic Schedule or Pseudo-Tie is ~~reviewed and~~ updated if needed for ~~the next available scheduling hour~~ and future hours in order to support congestion management procedures if any one of the following occurs: [Violation Risk Factor: Lower] [Time Horizon: Operations Planning, Same Day Operations, Real Time Operations]

2.1. For Confirmed Interchange ~~using the expected average MW profile, if the average energy profile in an hour is~~ greater than 250 MW and in that for the last hour, the actual hourly integrated energy deviates from the ~~hourly average energy profile for the next hour indicated in the~~ Confirmed Interchange by more than ~~10%.~~ for that hour and that deviation is expected to persist.

2.1.1. ~~The Load-Serving Entity shall ensure that the Confirmed Interchange associated with that Dynamic Schedule or Pseudo-Tie is updated for future hours if the review performed in R2 indicates that a deviation of more than 10% will persist.~~

2.2. For Confirmed Interchange ~~using the expected average MW profile, if the average energy profile in an hour is~~ less than or equal to 250 MW and in that for the last hour, the actual hourly integrated energy deviates from the ~~hourly average energy profile indicated in the~~ Confirmed Interchange by more than ~~25 MW~~ for that hour and ~~this~~ that deviation is expected to ~~continue in future hours~~ persist.

~~2.2.1. The Load-Serving Entity shall ensure that the Confirmed Interchange associated with that Dynamic Schedule or Pseudo-Tie is updated for future hours if the review performed in R2 indicates that a deviation of more than 25 MW will persist.~~

~~2.3. Receipt of The Load-Serving Entity receives notification from a Reliability Coordinator or Transmission Operator that a deviation from the hourly energy profile indicated in the Confirmed Interchange, regardless of magnitude, is a reliability concern and requires that the Confirmed Interchange be updated to update the Confirmed Interchange.~~

~~M2. The Load-Serving Entity shall have evidence (such as dated and time-stamped electronic logs, reliability studies or other evidence) that it reviewed and updated as needed its RFI's Confirmed Interchange Requests for Interchange when the deviation met or exceeded the criteria in Requirement R2, Parts 2.1-2.3. (R2)~~

~~R3. Each Attaining Balancing Authority shall verify that register each of the following conditions has been met prior to approving a Pseudo-Tie Arranged Interchange for which data is used in its ACE equation in the NAESB Electric Industry Registry in order to support congestion management capabilities⁺ procedures. [Violation Risk Factor: Lower] [Time Horizon: Operations Planning⁺]~~

~~3.1. Any Intermediate Balancing Authority that schedules in-kind losses in real-time related to the Pseudo-Tie has identified how losses will be accounted for over their Balancing Authority Area.~~

~~3.2. Each of the Balancing Authority's associated Reliability Coordinators (in the Eastern Interconnection) or associated Transmission Operators (in the Western Interconnection) has confirmed that sufficient information to reliably manage the Pseudo-Tie has been provided.~~

~~Rationale for R3: This Requirement is intended to ensure that a Pseudo-Tie is properly established. This requirement will be effective until the NAESB registry accepts Pseudo-Tie registrations.~~

~~Rationale for R3: This requirement is intended to ensure proper establishment of Pseudo-Ties ensures proper entities. This requirement will become effective when the NAESB EIR accepts Pseudo-Tie registrations. Requirements for Pseudo-Tie registration will be defined in NAESB business practices which are developed through open industry practices. All existing Pseudo-Ties will need to be registered and verified. This will be addressed in the Project 2008-12 implementation plan.~~

⁺The ERCOT and Hydro Quebec Interconnections have not been included in this requirement, as they are single Balancing Authority Interconnections and only connected to other Balancing Authorities through HVDC tie lines.

~~M3.~~—The Balancing Authority shall have evidence (such as dated and time-stamped electronic logs or other evidence) that it approved a Pseudo-Tie Arranged Interchange subject to Requirement R3, Parts 3.1-3.2. (R3)

~~R4.~~—Each Balancing Authority shall verify the Pseudo-Tie is registered in the NAESB Electric Industry Registry prior to approving a Pseudo-Tie Arranged Interchange in order to support congestion Management. [*Violation Risk Factor: Lower*][*Time Horizon: Operations Planning*]

Rationale for R4: This Requirement is intended to ensure that a Pseudo-Tie is properly established prior to its implementation. This requirement will become effective when the NAESB registry accepts Pseudo-Tie registrations. Until such time, R3 will be in effect.

~~M4.~~M3. The Balancing Authority shall have evidence (such as dated and time-stamped electronic logs or other evidence) that it ~~only approved~~ registered a Pseudo-Tie ~~Arranged Interchange~~ the Pseudo-Tie is registered in the NAESB Electric Industry Registry. ~~(R4 prior to its implementation.~~ (R3)

C. Compliance

1. Compliance Monitoring Process

1.1. Compliance Enforcement Authority

Regional Entity

1.2. Evidence Retention

The Load-Serving Entity shall keep data or evidence to show compliance as identified below unless directed by its Compliance Enforcement Authority to retain specific evidence for a longer period of time as part of an investigation. For instances where the evidence retention period specified below is shorter than the time since the last audit, the CEA may ask an entity to provide other evidence to show that it was compliant for the full time period since the last audit.

- The Load-Serving Entity shall maintain evidence to show compliance with R1, and R2 for the most recent 3 calendar months plus the current month.
- The Balancing Authority shall maintain evidence to show compliance with R3 ~~and R4~~ for the most recent 3 calendar months plus the current month.

If a Load-Serving Entity or Balancing Authority is found non-compliant, it shall keep information related to the non-compliance until found compliant.

The Compliance Enforcement Authority shall keep the last audit records and all requested and submitted subsequent audit records.

1.3. Compliance Monitoring and Assessment Processes:

Compliance Audits

Self-Certifications

Spot Checking

Compliance ~~Violation Investigations~~ Investigation

Self-Reporting

~~Complaints Text~~

Complaint

1.4. Additional Compliance Information

None

Table of Compliance Elements

R #	Time Horizon	VRF	Violation Severity Levels			
			Lower VSL	Moderate VSL	High VSL	Severe VSL
R1	Operations Planning, Same Day Operations	Lower	N/A	N/A	N/A	<p>The Load-Serving Entity secured energy to serve Load via a Dynamic Schedule or Pseudo-Tie and had a forecast for that Dynamic Schedule or Pseudo-Tie, but, did not ensure that an RFI with the expected average MW profile for each hour a Request for Interchange was submitted as an-on-time Arranged Interchange to the Sink Balancing Authority:</p> <p>OR</p> <p>The Load-Serving Entity secured energy to serve Load via a Dynamic Schedule or Pseudo-Tie, and did not have a forecast for that Dynamic Schedule or Pseudo-Tie, but did not ensure that an RFI with the expected maximum MW profile for each hour was submitted as an on-time Arranged</p>

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						Interchange to the Sink Balancing Authority include information about the Pseudo-Tie in congestion management procedure(s) via an alternate method.
R2	Operations Planning, Same Day Operations	Lower	N/A	N/A	N/A	A deviation met or exceeded the criteria in Requirement R2 Parts 2.1- 2.3, but the Load-Serving Entity did not ensure that the Confirmed Interchange associated with that Dynamic Schedule or Pseudo-Tie was updated for the next available scheduling hour or failed to ensure that the Confirmed Interchange associated with that Dynamic Schedule or Pseudo-Tie was updated for future hours. <u>future hours.</u>
R3	Operations Planning	Lower	N/A	N/A	N/A	The Balancing Authority approved a Pseudo-Tie Arranged Interchange for a Pseudo-Tie and any of Parts 3.1, 3.2 were not met.

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R4R3	Operations Planning	Lower	N/A	N/A	N/A	The Balancing Authority approved <u>did not register</u> a Pseudo-Tie Arranged Interchange for a Pseudo-Tie <u>that is not registered</u> <u>which data was used in its ACE equation</u> in the NAESB Electric Industry Registry.
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D. Regional Variances

None.

E. Interpretations

None.

F. Associated Documents

The complete Dynamic Transfer Reference Guidelines document is included in the NERC Operating Manual at: http://www.nerc.com/files/opman_3_2012.pdf.

Application Guidelines

Guidelines and Technical Basis

This standard requires the submittal of an Arranged Interchange for both Dynamic Schedules and Pseudo-Ties. In general, Pseudo-ties are accounted for by all parties as actual ~~Interchange~~ and ~~dynamic schedules~~ **Dynamic Schedules** are accounted for as scheduled interchange. The obligations of the entities involved in each type of dynamic transfer are dependent on the type of dynamic transfer selected. These guidelines provide items that should be considered when determining which type of dynamic transfer should be utilized for a given situation.

General Considerations ~~when establishing and implementing dynamic transfers~~ **When Establishing and Implementing Dynamic Transfers:**

- During the setup of a dynamic transfer, a common source of data is established. During that setup, plans should also be established for what will occur when that normal source of data is not available.
- Following any reliability adjustments to a Dynamic Schedule, each Balancing Authority shall use agreed upon values that ensure any limit established by the reliability adjustment is not exceeded.
 - Since the Net Scheduled Interchange term used in its control ACE (or alternate control process) is not the value from the Confirmed Interchange, but from some common source, each Balancing Authority must be prepared to take action to control the data feeding that common source.
- Each Attaining Balancing Authority shall incorporate resources attained via Dynamic Schedules or Pseudo-Ties into its processes for establishing Contingency Reserve requirements, as well as for the purposes of measuring Contingency Reserve response.

The table below describes and outlines the obligations associated with the typical historical application of Pseudo-Ties and Dynamic Schedules related to many of the topics addressed above. In practical application, however, both the Native Balancing Authority and Attaining Balancing Authority can agree to exchange the obligations from that shown in the ~~Table 1~~ **table below**.

BA's Obligation/modeling	Pseudo-Tie	Dynamic Schedule
Generation planning and reporting and outage coordination	Attaining BA	Typically, Native BA but may be re-assigned (wholly or a portion) to the Attaining BA
CPS and DCS recovery /reporting and RMS	Attaining BA	Attaining and/or Native BA (depending on agreements)
Operational responsibility	Attaining BA	Native BA
BA services FERC OATT Schedules 3–6	Attaining BA	Native BA

Application Guidelines

and other ancillary services as required		
Ancillary services associated with transmission FERC OATT Schedules 1–2 and other ancillary services as required	Attaining/Native BA (as agreed)	Attaining/Native BA (as agreed)
ACE frequency bias calc/setting	The Native and Attaining BA(s) shall adjust the control logic that determines their frequency bias setting to account for the frequency bias characteristics of the loads and/or resources being assigned between BA(s) by the pseudo-tie	The Attaining BA should include the load from its dynamic schedule as a part of its forecast load to set frequency bias requirement. The Native BA should change its load used to set frequency bias setting by the same amount in the opposite direction.
Load forecasting and reporting	Attaining BA	Native BA
Manual load shedding during an Energy Emergency Alert (EEA)	Attaining BA	Native BA

General Considerations for Curtailments of Dynamic Transfers

In NERC’s Dynamic Transfer Reference Guidelines, Version 2, it describes unique handling of curtailments of dynamic transfers.

For Dynamic Schedules:

If transmission service between the source and sink BA(s) is curtailed then the allowable range of the magnitude of the schedules between them, including dynamic schedules, may have to be curtailed accordingly. All BAs involved in a dynamic schedule curtailment must also adjust the dynamic schedule signal input to their respective ACE equations to a common value. The value used must be equal to or less than the curtailed dynamic schedule tag. Since dynamic schedule tags are generally not used as dynamic transfer signals for ACE, this adjustment may require manual entry or other revision to a telemetered or calculated value used by the ACE.

For Pseudo-ties:

If transmission service between the native and attaining BA(s) is curtailed, then the allowable range of the magnitude of the pseudo-ties between them must be limited accordingly to these constraints.

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Both sections above describe that when curtailments (typically communicated through e-Tags) of dynamic transfers occur, they require additional action by Balancing Authorities to ensure compliance with the curtailment.

Curtailments of most tagged transactions are implemented through a change in the Source and Sink Balancing Authorities' ACE equations. However, changes, including curtailments, in Dynamic Schedule and Pseudo-tie tagged transactions do not change the Source and Sink Balancing Authorities' ACE equations directly. These types of transactions impact the ACE equation via the Dynamic Transfer Signal, not by the e-Tag. As such, Balancing Authorities need to develop additional automation or perform additional manual actions to reduce the Dynamic Transfer Signal in order to comply with the curtailment.

Requirement R1:

Requirement R2:

Requirement R3: