**Standard Development Timeline**

This section is maintained by the drafting team during the development of the standard and will be removed when the NERC Board of Trustees (Board) adopt the standard.

**Description of Current Draft**

In Posting One of WECC-0147, Automatic Time Error Correction, the drafting team (DT) is suggesting consolidation and retirement of various Requirements.

**Standard Specific Definition**

Posting One proposes the addition of a Standard-specific definition for “Interchange Software.” This definition would only apply to this Standard.

definition is proposed to add clarity and unanimity as to which software product is to be used to calculate ATEC.

The current software product, sometimes referred to as the “*WECC* Interchange Tool” or the “Western Interchange Tool” (WIT) is not owned, operated, or maintained by WECC or any applicable entity.[[1]](#footnote-2) The WIT is a product/service offered by a third-party vendor (Open Access Transmission International, Inc. (OATI)) over which NERC does not have Standards-related authority.

Standards only apply to Functional Entities[[2]](#footnote-3) listed on the NERC Compliance Registry.

**NERC Glossary of Terms Used in Reliability Standards**

**WECC Regional Definition**

This Standard uses the term “ATEC” as defined in the WECC Regional Definitions section of the NERC Glossary of Terms Used in Reliability Standards.

**Numbering**

Numbering, structure, and sequencing will be updated when the document is finalized.

**Technical Editing**

This draft has not been through technical editing. Although every endeavor is made to keep the document pristine during development, the final text will be reviewed and updated by WECC’s technical editor.

The Background section was updated and moved to the front of the document per NERC’s newest Standard template.

*Requirement RX*

Requirement RX is drafted to clarify that all applicable entities are to use the same Interchange Software for purposes of calculating ATEC.

*Requirement R1*

The DT is seeking input on whether Requirement R1 should be updated, or deleted in its entirety. Special note: R1 is different from as-proposed RX that precedes R1*.*

*Argument for Updating*

As approved, Requirement R1 (R1) establishes limits on Accumulated Primary Inadvertent Interchange (PIIACCUM). However, these limits are based on a value determined from the “previous calendar year.” While the creation of a new Balancing Authority (BA) or the shutdown of an existing BA is rare, it has occurred and could occur again.

If that occurs and a BA does not have data from a previous calendar year, the subparts of the Requirements as written would establish a compliance limit of zero (0) MWh.

Maintaining a monthly PIIaccum Balance of zero as calculated by the WIT is not operationally feasible. This can result in a non-compliance with the standard which cannot be mitigated until the end of the calendar year by allowing the limit for PIIaccum to increase as specified in Requirement R1, 1.1 or 1.2 of the Standard.

Posting 1 remedies this concern by adding Requirements R1.1.1. and R1.2.1. The proposed language creates an exception-based lookback period allowing the impacted entity to produce records that would otherwise not exist.

The proposed additions state the if an applicable entity does not have a full calendar year of data because of non-operation, the records lookback will be predicated on events occurring within any portion of the preceding 365/366 days – as opposed to the previous calendar year.

If Requirement R1 is kept, the as-proposed language is believed to remedy the above concern.

*Argument for Deletion*

Alternatively, the DT suggests R1 need not be updated; rather, it should be deleted.

Requirement R1 requires the applicable entity to operate its system so that excessive amounts of Primary Inadvertent Interchange do not accumulate. If the remaining as-proposed Requirements are met, excessive Primary Inadvertent Interchange cannot accumulate. Restated, if an entity complies with the balance of the Standard as proposed, Requirement R1 is moot, or at minimum redundant. As such, it can be deleted without impacting reliability.

example, Requirement R3, requires the BA to operate with ATEC continuously in service, with the exception of up to 24 accumulated hours per quarter. If the BA is meeting R3, an accumulated Primary Inadvertent Interchange is continuously being “paid back” to the Interconnection based on the ATEC term. Where the calculation is accurate, and ATEC is enabled by the BA, significant accumulations cannot occur.

Further, as proposed Requirement R4 and R4a (numbering will be redone after posting) requires each BA to compute and upload to the Interchange Software, its hourly Net Actual Interchange (NAI) no later than 50 minutes after each hour. Conjoined, Requirement R4a focus on confirming Net Scheduled Interchange prior to implementation. These two proposed requirements refocus the as-approved R4 and subsume its parts into as-proposed R4 and R4a. As a result, the as-approved content is better defined.

If an entity complies with as-proposed R4 and R4a, the reliability goal of as-approved R1 occurs by default, thereby rendering R1 redundant.

**Questions for Posting 1**

Posting One only covers Sections A-C of BAL-004-WECC-4. Other sections will be covered in subsequent postings. The DT is suggesting deletion of various Requirements. Although a cursory justification is offered below, this posting seeks both guidance and technical support as to whether various Requirements should be deleted vs. modified. For Posting 1, the drafting team is:

* Suggesting deletion of as-approved Requirement R1. As proposed, R1 remedies the timing concerns raised in the Standard Authorization Request (SAR). Do you agree R1 should be deleted? If you agree Requirement R1 should be deleted, please provide technical justification for that position.
* Suggesting combining as-approved Requirement R2 and as-approved Requirement R6. Do you agree that as-proposed R2 accurately consolidates as-approved R2 and as-approved R6? If not, please explain your answer.
* Suggesting deletion of as-approved Requirement R5. The DT asserts that as-approved R5 is irrelevant to ATEC as it describes a requirement for Automatic Generator Control (AGC) to have specific operating capabilities held by all AGC. As such, the Requirement states a ubiquitous fact and is superfluous. Do you agree R5 should be deleted? If you agree Requirement R5 should be deleted, please provide technical justification for that position.
* Suggesting deletion of as-approved Requirement R7. The DT asserts that the content of as-approved R7 is addressed in the balance of the as-proposed Requirements. Do you agree that all aspects of as-approved R7 are included in the balance of the as-proposed Standard? If you agree Requirement R7 should be deleted, please provide technical justification for that position.
* Suggesting deletion of as-approved Requirement R8. The DT asserts that where an entity complies with the balance of the proposed Standard, ATEC payback is automatic. As such, as-approved R8 is redundant. Further, as-approved R8 prohibits commercial activities that should fall outside of the purview of a Reliability Standard. Do you agree as-approved Requirement R8 can be deleted because it is redundant? If you agree Requirement R8 should be deleted, please provide technical justification for that position.
* The DT invites comment on all other aspects of *Sections A through C.* Other sections will be addressed in subsequent postings.

|  |  |
| --- | --- |
| **Completed Actions** | **Date** |
| Standards Committee approved Standard Authorization Request (SAR) for posting | 11/23/2021 |
| SAR approved by WECC Standards Committee | 12/7/2022 |
| Drafting Team (DT) Meeting | 05/05/2022 |
| Drafting Team (DT) Meeting | 05/19/2022 |
| Drafting Team (DT) Meeting | 06/02/2022 |
| Drafting Team (DT) Meeting | 06/16/2022 |
| Drafting Team (DT) Meeting | 06/30/2022 |
| Drafting Team (DT) Meeting | 08/04/2022 |
| Drafting Team (DT) Meeting | 08/11/2022 - Cancelled |
| Drafting Team (DT) Meeting |  |
| Drafting Team (DT) Meeting |  |
| Drafting Team (DT) Meeting |  |

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| --- | --- |
| **Anticipated Actions** | **Date** |
| Posting 1 for Comment |  |

**New or Modified Term(s) Used in NERC Reliability Standards**

This section includes all new or modified terms used in the proposed standard that will be included in the *Glossary of Terms Used in NERC Reliability Standards* upon applicable regulatory approval. Terms used in the proposed standard that are already defined and are not being modified can be found in the *Glossary of Terms Used in NERC Reliability Standards*. The new or revised terms listed below will be presented for approval with the proposed standard. Upon Board adoption, this section will be removed.

**Term(s):**

**Standard Only Definition: “Interchange Software”**

This Standard uses the term Interchange Software to mean:

The single electronic confirmation tool identified by the Western Electricity Coordinating Council (WECC), or its successor, to be used by all Balancing Authorities throughout the Western Interconnection (WI), that serves as the primary means for confirmation and creation of the final record of Net Scheduled Interchange (NSI) and Net Actual Interchange (NAI), during all periods when the Interchange Software is available.

1. **Introduction**
   1. **Title:** Automatic Time Error Correction[[3]](#footnote-4)
   2. **Number:** BAL-004-WECC-4
   3. **Purpose:** To maintain Western Interconnection (WI) frequency, and ensure that time error accumulation via Primary Inadvertent Interchange (PII) payback is conducted in a manner that does not result in a negative impact on reliability.

# Applicability

* + 1. **Functional Entities**

**4.1.1.** Balancing Authorities operating synchronously with the WI

**4.2. Compliance Waiver**

**4.2.1.** This Standard is only applicable when the Interchange Software is available. See Section C., Compliance, 1.4 Compliance Waiver for applicability during periods of Interchange Software unavailability.

* 1. **Effective Date:** The first day of the second quarter following regulatory approval.
  2. **Background**

Pre-2000 (prior to mandatory Standards), the Western Electricity Coordinating Council (WECC) operated using the Minimum Operating Reliability Criteria (MORC). Per MORC Section D. Time Control, Control Areas were required to assist in maintaining frequency at or near 60.0 Hz, as prescribed in the Western System Coordinating Council (WSCC)[[4]](#footnote-5) Procedure for Time Error Control (TEC). Various versions of the TEC predate 1980.

In February 2003, the WECC Automatic Time Error Correction (ATEC) Procedure (Procedure) became effective for all Balancing Authorities in the WI . The original intent of the Procedure was to minimize the number of Manual Time Error Corrections in the WI.[[5]](#footnote-6)

In June 2007, the Procedure was translated into BAL-STD-004-1, Time Error Correction, followed by BAL-004-WECC, Time Error Correction, versions 1-3.[[6]](#footnote-7) BAL-004-WECC-1 required Balancing Authorities within the WI to maintain Interconnection frequency within a predefined frequency profile and to ensure that time error corrections would not result in a negative impact on Interconnection reliability.

In September 2009, in response to Federal Energy Regulatory Commission (FERC) Order 723, WECC received Standard Authorization Request (SAR) WECC-0068 requesting modification to BAL-004-WECC-1. Modifications were approved with an effective date of April 1, 2014, creating BAL-004-WECC-2. BAL-004-WECC-2 introduced two new performance metrics: 1) in Requirement R1, a 150% metric, and 2) in Requirement R2, a 90-day metric. Neither of these metrics are supported by technical studies. They were included in BAL-004-WECC-2 as a compromise during drafting.

In May 2018, FERC approved minor revisions to BAL-004-WECC-2 as part of WECC SAR WECC-0124, with an effective date of October 1, 2018, thereby creating BAL-004-WECC-3.[[7]](#footnote-8)

* 1. **Standard Definitions:**

**7.1 Interchange Software**

This Standard uses the Standard-specific term “Interchange Software” to mean:

The single electronic confirmation tool identified by the Western Electricity Coordinating Council (WECC), or its successor, to be used by all Balancing Authorities throughout the Western Interconnection (WI), that serves as the primary means for confirmation and creation of the final record of Net Scheduled Interchange (NSI) and Net Actual Interchange (NAI), during all periods when the Interchange Software is available.

**7.2. ATEC**

This Standard uses the term “ATEC” as defined in the WECC Regional Definitions section of the NERC Glossary of Terms Used in Reliability Standards.

1. **Requirements and Measures**

**RX.** Each Balancing Authority shall use the Interchange Software as the sole source to calculate its ATEC.

**MX.** Each Balancing Authority will have evidence that it used the Interchange Software as the sole source to calculate its ATEC, as required in Requirement RX.

**R1.** Each Balancing Authority shall operate its system such that, following the conclusion of each month, the month-end absolute value of its On-Peak and Off-Peak, Accumulated Primary Inadvertent Interchange (PIIaccum), as calculated by the Interchange Software, are each individually less than or equal to: *[Violation Risk Factor Medium:] [Time Horizon: Operations Assessment]*

* + 1. For load-serving Balancing Authorities, 150% of the previous calendar year’s integrated hourly Peak Demand.
    2. Where, because of non-operation, the load-serving Balancing Authority does not have a full calendar year’s integrated hourly Peak demand, that entity’s Accumulated Primary Inadvertent Interchange (PIIaccum) shall not exceed 150% of that entity’s highest integrated hourly Peak Demand, occurring during any portion of the preceding 365 days, or 366 days in those years during which February 29 occurs as an intercalary day.
  1. For generation-only Balancing Authorities, 150% of the previous calendar year’s integrated hourly peak generation.
     1. Where, because of non-operation, the generation-only Balancing Authority does not have a full calendar year’s integrated hourly peak generation, that entity’s PIIaccum shall not exceed 150% of that entity’s highest integrated hourly peak generation, occurring during any portion of the preceding 365 days, or 366 days in those years during which February 29 occurs as an intercalary day.

**M1.** Each Balancing Authority will have evidence that it operated its system such that, following the conclusion of each month, the month-end absolute value of its On-Peak and Off-Peak, Accumulated Primary Inadvertent Interchange (PIIaccum), as calculated by the Interchange Software, meets all criteria stated in Requirement R1.

**R2.** Each Balancing Authority shall, upon discovery of an error in its On-peak or Off-peak Inadvertent Interchange calculation, recalculate and correct the Inadvertent Interchange values within 90 days from the time the error is discovered. *[Violation Risk Factor: Medium] [Time Horizon: Operations Assessment]*

**M2.** Each Balancing Authority discovering an error in its On-peak or Off-peak Inadvertent Interchange calculation will have evidence that it recalculated and corrected the Inadvertent Interchange values, within 90 days from the time the error is discovered, as required in Requirement R2.

Evidence may include, but is not limited to:

* Screen shots from the Interchange Software
* Screen shots from the Balancing Authority’s internal software functions such as internal databases, spreadsheets, and displays.
* Dated archive files
* Historical data

**R3.** Each Balancing Authority shall keep its ATEC in service, with an allowable exception period of less than or equal to an accumulated 24 hours per calendar quarter for ATEC to be out of service. This period is separate from any period during which the Interchange Software was unavailable. *[Violation Risk Factor: Medium] [Time Horizon: Same-day Operations]*

**M3**. Each Balancing Authority will have evidence that it kept its ATEC in service, as required in Requirement R3, subject to the allowable exceptions provided.

Evidence may include, but is not limited to:

* + - Screen shots from the Interchange Software
    - Screen shots from the Balancing Authority’s internal software functions such as internal databases, spreadsheets, and displays.
    - Dated archive files
    - Historical data

**R4.** Each Balancing Authority shall compute and upload hourly Net Actual Interchange (NAI) to the Interchange Software no later than 50 minutes after each hour. *[Violation Risk Factor: Medium] [Time Horizon: Operations Assessment]*

Each Balancing Authority will have evidence that it computed and uploaded hourly Net Actual Interchange (NAI) to the Interchange Software no later than 50 minutes after each hour, as required in Requirement R4.

Evidence may include, but is not limited to:

* Screen shots from the Interchange Software
* Screen shots from the Balancing Authority’s internal software functions such as internal databases, spreadsheets, and displays.
* Dated archive files
* Historical data

**R4a. (Numbering change after posting.)** Each Balancing Authority shall confirm Net Scheduled Interchange (NSI) with adjacent Balancing Authorities, prior to implementation. *[Violation Risk Factor: Medium] [Time Horizon: Operations Assessment]*

**M4a. (numbering change after posting.)** Each Balancing Authority will have evidence that it confirmed Net Scheduled Interchange (NSI) with adjacent Balancing Authorities, prior to implementation, as required in Requirement R4a.

Evidence may include, but is not limited to:

* Screen shots from the Interchange Software
* Screen shots from the Balancing Authority’s internal software functions such as internal databases, spreadsheets, and displays.
* Dated archive files
* Historical data

**RESERVED – PROPOSED FOR DELETION**

**R6. RESERVED – PROPOSED FOR DELETION**

**RESERVED – PROPOSED FOR DELETION**

**R8. RESERVED – PROPOSED FOR DELETION**

C. Compliance

1. **Compliance Monitoring Process**

**Compliance Enforcement Authority:** “

Compliance Enforcement Authority” means NERC or

* 1. the Regional Entity, or any entity as otherwise designated by an Applicable Governmental Authority, in their respective roles of monitoring and/or enforcing compliance with mandatory and enforceable Reliability Standards in their respective jurisdictions.

# Evidence Retention: The following evidence retention period(s) identify the period of time an entity is required to retain specific evidence to demonstrate compliance. For instances where the evidence retention period specified below is shorter than the time since the last audit, the Compliance Enforcement Authority may ask an entity to provide other evidence to show that it was compliant for the full-time period since the last audit.

The applicable 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.

Each Balancing Authority in the WI shall keep the following records for the preceding calendar year (January – December) plus the current calendar year:

* + Its values for PIIhourly, PIIaccum (On-Peak and Off-Peak), *ΔTE,* and any month-end adjustments.
  + Documentation illustrating any period(s) during which the Balancing Authority operated without ATEC, including the reason ATEC was not in operation.

**1.3 Compliance Monitoring and Enforcement Program:** As defined in the NERC Rules of Procedure, “Compliance Monitoring and Enforcement Program” refers to the identification of the processes that will be used to evaluate data or information for the purpose of assessing performance or outcomes with the associated Reliability Standard.

**1.4 Compliance Waiver:** Compliance with this Standard is waived for all periods during which the Interchange Software is deemed unavailable.

Interchange Software is deemed unavailable when it fails to function as designed by the software’s vendor, or when the applicable entity(ies) is unable to access the Interchange Software due to hardware, software, or communications difficulties, such as but not limited to, communications failure, lack of internet connectivity, or catastrophic hardware/software system failure.

Failure of the applicable entity(ies) to procure access to the Interchange Software, such as but not limited to failure to contract for Interchange Software services, does not constitute unavailability.

**Table of Compliance Elements**

**THIS SECTION WILL BE UPDATED AFTER REQUIREMENTS ARE FINALIZED.**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| R # | Time Horizon | VRF | Violation Severity Levels | | | |
|  | Lower VSL | Moderate VSL | High VSL | Severe VSL |
| R1 | Operations Assessment | Medium | Following the conclusion of each month each Balancing Authority’s absolute value of PIIaccum for either the On-Peak period or Off-Peak period exceeded 150%, but was less than or equal to 160% of the previous calendar year’s Peak Demand or peak generation for generation-only Balancing Authorities. | Following the conclusion of each month each Balancing Authority’s absolute value of PIIaccum for either the On-Peak period or Off-Peak period exceeded 160%, but was less than or equal to 170% of the previous calendar year’s Peak Demand or peak generation for generation-only Balancing Authorities. | Following the conclusion of each month each Balancing Authority’s absolute value of PIIaccum for either the On-Peak period or Off-Peak period exceeded 170%, but was less than or equal to 180% of the previous calendar year’s Peak Demand or peak generation for generation-only Balancing Authorities. | Following the conclusion of each month each Balancing Authority’s absolute value of PIIaccum for either the On-Peak period or Off-Peak period exceeded 180% of the previous calendar year’s Peak Demand or peak generation for generation-only Balancing Authorities. |
| R2 | Operations Assessment | Medium | The Balancing Authority did not recalculate PIIhourly and adjust the PIIaccum within 90 days of the discovery of the error; but made the required recalculations and adjustments within 120 days. | The Balancing Authority did not recalculate PIIhourly and adjust the PIIaccum within 120 days of the discovery of the error; but made the required recalculations and adjustments within 150 days. | The Balancing Authority did not recalculate PIIhourly and adjust the PIIaccum within 150 days of the discovery of the error; but made the required recalculations and adjustments within 180 days. | The Balancing Authority did not recalculate PIIhourly and adjust PIIaccum within 180 days of the discovery of the error. |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| R # | Time Horizon | VRF | Violation Severity Levels | | | |
|  | Lower VSL | Moderate VSL | High VSL | Severe VSL |
| R3 | Real-Time Operations | Medium | The Balancing Authority operated during a calendar quarter without ATEC in service for more than an accumulated 24 hours, but less than or equal to 72 hours. | The Balancing Authority operated during a calendar quarter without ATEC in service for more than an accumulated 72 hours, but less than or equal to 120 hours. | The Balancing Authority operated during a calendar quarter without ATEC in service for more than an accumulated 120 hours, but less than or equal to 168 hours | The Balancing Authority operated during a calendar quarter without ATEC in service for more than an accumulated 168 hours. |
| R4 | Operations Assessment | Medium | The Balancing Authority did not compute PIIhourly, PIIaccum, and *IATEC* within 50 minutes, but made the required calculations in less than or equal to two hours. | The Balancing Authority did not compute PIIhourly, PIIaccum, and *IATEC* within two hours, but made the required calculations in less than or equal to four hours. | The Balancing Authority did not compute PIIhourly, PIIaccum, and *IATEC* within four hours, but made the required calculations in less than or equal to six hours. | The Balancing Authority did not compute PIIhourly, PIIaccum, and *IATEC* within six hours. |
| R5 | Real-Time Operations | Medium | N/A | N/A | N/A | The Balancing Authority is not able to change its AGC operating mode between Flat Frequency (for blackout restoration; Flat Tie Line (for loss of frequency |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| R # | Time Horizon | VRF | Violation Severity Levels | | | |
|  | Lower VSL | Moderate VSL | High VSL | Severe VSL |
|  |  |  |  |  |  | telemetry); Tie Line Bias; or Tie Line Bias plus Time Error control (used in ATEC mode). |
| R6 | Operations Assessment | Medium | N/A | N/A | N/A | When adjusting hourly Inadvertent Interchange or ΔTE, the Balancing Authority did not recalculate the PIIhourly and the PIIaccum for the On-Peak and Off-Peak periods. |
| R7 | Operations Assessment | Medium | N/A | N/A | N/A | When making any month-end meter reading adjustments to Inadvertent Interchange, the Balancing Authority did not make the same adjustment to the PIIaccum. |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| R # | Time Horizon | VRF | Violation Severity Levels | | | |
|  | Lower VSL | Moderate VSL | High VSL | Severe VSL |
| R8 | Operations Assessment | Medium | N/A | N/A | N/A | The Balancing Authority paid back Inadvertent Interchange using bilateral and unilateral payback rather than using ATEC. |

Guidelines and Technical Basis

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# THE RATIONALE SECTION WILL BE FURTHER UPDATED ONCE REQUIREMENTS NEAR FINALIZATION. UPDATES WILL BE ENHANCED BY COMMENTS RECEIVED DURING THE COMMENT/RESPONSE PERIOD.

# ///////////////////////////////

# Requirement R1:

**Premise**: Each Balancing Authority should ensure that the absolute value of its PIIaccum for both the on-peak period and the off-peak period each individually does not exceed 150% of the previous year’s Peak Demand for load-serving Balancing Authorities, and 150% of the previous year’s peak generation for generation-only Balancing Authorities. The Balancing Authority is required to keep each PIIaccum period within the limit. For example, the Balancing Authorities actions may include:

* Identifying and correcting the source of any metering or accounting error(s) and recalculating the hourly Primary Inadvertent Interchange **(**PIIhourly) and the PIIaccum from the time of the error;
* Validating the implementation of ATEC; or
* Setting Lmax equal to L10.until the PIIaccum is below the limit in Requirement R1.

**Justification**: PIIaccum may grow from month-end adjustments and metering errors, even with the inclusion of IATEC in the ACE equation.

**Goal**: To limit the amount of PIIaccum that a Balancing Authority can have at the end of each month.

# Requirement R2:

**Premise**: When a Balancing Authority finds an error in the calculation of its PII, the Balancing Authority needs time to correct the error and recalculate PII and PIIaccum.

Hourly adjustments to hourly Inadvertent Interchange (II) require a recalculation of the corresponding hourly PII value, the corresponding PIIaccum, and all subsequent PIIaccum for every hour up to the current hour.

**Justification**: The drafting team selected 90 days as a reasonable amount of time to correct an error and recalculate PII and PIIaccum, since recalculation of PII and PIIaccum is not a real-time operations reliability issue. As PII hourly is corrected, then PIIaccum should be recalculated.

**Goal**: To promote: 1) the timely correction of errors in the calculation of PII and PIIaccum, and 2) the accurate, fair, and timely payback of accumulated PII balances.

# Requirement R3:

**Premise**: When a Balancing Authority is not participating in ATEC, payback of PIIaccum is delayed.

**Justification**: The limit of 24 hours per quarter discourages a Balancing Authority from withdrawing ATEC participation, for example, for economic gain during selected hours. If the limits were increased to 60 hours, a Balancing Authority could technically withdraw ATEC participation for one hour from Monday to Friday.

**Goal**: To promote fair and timely payback of PIIaccum balances.

# Requirement R4:

**Premise**: PII**hourly**, PIIaccum, and *IATEC* should be determined before the next scheduling hour begins.

**Justification**: To promote timely calculations 50 minutes was selected because it is before the next hour ramp begins and permits time to collect the data and resolve interchange metering values. (NAI will be equal in magnitude and opposite in direction for each of its adjacent balancing Authorities.)

**Goal**: To promote the timely calculation of PII**hourly**, PIIaccum, and *IATEC.*

# Requirement R5:

**Premise:** The ACE equation, and hence the AGC mode, will contain any number of parameters based on system operating conditions. Various AGC modes are identified corresponding to those operating conditions, as well as the specific sets of parameters included in the ACE equation.

**Justification**: Changing to the proper operating mode, corresponding to current operating conditions, affords proper movement of generating units in response to those conditions. The addition of the ATEC term results in an additional AGC mode and a different set of parameters. The inability to correctly calculate the ATEC term would dictate that AGC not be operated in the ATEC mode.

**Goal**: To set the AGC mode and calculate ACE in a manner that corresponds to the system operating conditions and to accommodate changes in those conditions.

# Requirement R6:

**Premise:** Hourly adjustments to hourly Inadvertent Interchange (II) require a recalculation of the corresponding hourly PII value, the corresponding PIIaccum, and all subsequent PIIaccum for every hour up to the current hour.

**Justification**: As PII**hourly** is corrected, then PIIaccum should be recalculated.

**Goal**: To promote accurate, fair and timely payback of accumulated PII balances.

# Requirement R7:

**Premise:** Month-end meter-reading adjustments are made, for example, when a Balancing Authority performs monthly comparisons of recorded month-end Net Actual Interchange (NIA) values derived from hourly Actual Interchange Telemetered Values against month-end Actual Interchange Register Meter readings.

**Justification**: Month-end adjustments to IIaccum are applied as 100% PIIaccum. 100% was chosen for simplicity to bilaterally assign PIIaccum to both Balancing Authorities, since the effect of this metering error on system frequency is not easily determined over the course of a month.

**Goal**: To provide a mechanism by which corresponding month-end II adjustments can be **applied** to PIIaccum, when such adjustments cannot be attributed to any one hour or series of hours.

**Requirement** R8:

**Premise:** ATEC includes automatic unilateral payback of Primary Inadvertent Interchange and Secondary Inadvertent Interchange.

**Justification**: Additional unilateral and bilateral exchanges disturb the balance and distribution between Primary Inadvertent Interchange and Secondary Inadvertent Interchange throughout the Interconnection; thereby stranding Secondary Inadvertent Interchange.

**Goal**: To not strand Secondary Inadvertent Interchange.

**Version History**

| **Version** | **Date** | **Action** | **Change Tracking** |
| --- | --- | --- | --- |
| 1 | February 4, 2003 | Effective Date. | New |
| 1 | October 17, 2006 | Created Standard from Procedure. | Errata |
| 1 | February 6, 2007 | Changed the Standard Version from 0 to 1 in the Version History Table. | Errata |
| 1 | February 6, 2007 | The upper limit bounds to the amount of Automatic Time Error Correction term was inadvertently omitted during the Standard Translation. The bound was added to the requirement R1.4. | Errata |
| 1 | February 6, 2007 | The statement “The Time Monitor may declare offsets in 0.001-second increments” was moved from TEoffset to TDadj and offsets was corrected to adjustments. | Errata |
| 1 | February 6, 2007 | The reference to seconds was deleted from the TE offset term. | Errata |
| 1 | June 19, 2007 | The standard number BAL-STD-004-1 was changed to BAL-004-WECC-01 to be consistent with the NERC Regional Reliability Standard Numbering Convention. | Errata |
| 2 | December 19, 2012 | Adopted by NERC Board of Trustees. |  |
| 2 | October 16, 2013 | A FERC Letter Order was issued on October 16, 2013, approving BAL-004-WECC-02. This standard will become enforceable on April 1, 2014. |  |
| 3 | December 6, 2017 | Approved by the WECC Board of Directors. | Five-year review. The project: 1) relocates the Background section to the preamble of the Guidance section, 2) adds On-Peak and Off-Peak parameters in Requirement R1/M1, 3) addresses WECC Interchange Tool software successors throughout, 4) conforms the document to current drafting conventions (R1/M1, R4/M4), and, 5) addresses non-substantive syntax and template concerns. |
| 3 | February 8, 2018 | Adopted by the NERC Board of Trustees. |  |
| 3 | May 30, 2018 | FERC Order issued approving BAL-004-WECC-3. Docket No. RD18-2-000. Effective Date October 1, 2018. |  |

1. The proper name for the WIT is the Western Interchange Tool. [↑](#footnote-ref-2)
2. NERC Reliability Functional Model, Function Definitions and Functional Entities, Version 5.1, Prepared by the Functional Model Advisory Group [↑](#footnote-ref-3)
3. For purposes of this document, ATEC is defined in the WECC-specific section of the NERC Glossary of Terms Used in Reliability Standards. [↑](#footnote-ref-4)
4. WECC began in 1967 as the Western Systems Coordinating Council (WSCC), a group of 40 power systems with a common goal of providing reliable power to the public whom they served. [↑](#footnote-ref-5)
5. The Procedure provided for cost assignment and equitable payback of Inadvertent Interchange, not otherwise addressed in BAL-004-4, Time Error Correction. [↑](#footnote-ref-6)
6. See Version History Table. [↑](#footnote-ref-7)
7. FERC Order issued approving BAL-004-WECC-3. Docket No. RD18-2-000. Effective Date October 1, 2018. [↑](#footnote-ref-8)