DRAFT

NAESB STANDARD FOR INADVERTENT INTERCHANGE PAYBACK (IIP)
WESTERN INTERCONNECTION (WI) METHOD

The Western Electricity Coordinating Council (WECC) has incorporated a method for IIP that requires Balancing Authorities in the Western Interconnection to implement IIP schedules in a uniform manner. Inadvertent Interchange is defined as the difference between a Balancing Authority's net actual interchange and its net scheduled interchange. Inadvertent Interchange is a natural result of interconnected system operations, created unintentionally, and, therefore unscheduled. The root causes of Inadvertent Interchange are errors in measurement (frequency and/or net actual interchange), errors in schedules (frequency and/or net actual interchange), inadequate control systems or telecommunications, and/or energy conversion units responsive to AGC function not available or not assigned. The repayment of accumulated energy from Inadvertent Interchange (Inadvertent Interchange Energy) owed to the interconnection should be preformed in a timely, coordinated fashion by all entities.

The unilateral payback method detailed in the North American Reliability Council (NERC) Operating Manual, Policy Section 1.F has been discontinued in the WECC.

Automatic Time Error Control is the primary method to settle Inadvertent Interchange accounts between the Western Interconnection's Balancing Authorities and includes automatic unilateral payback. A full and complete revision of Automatic Time Error Control is now available and approved by the WECC Board of Trustees. Automatic Time Error Control addresses the continuing concern that numerous manual time error corrections are detrimental to interconnected operations.

The procedures for Time Error Control are as follows:

1. The amount of any Balancing Authority's time error contribution is determined by the Balancing Authorities frequency bias setting, the Balancing Authority's accumulation of primary time error accounted for in Primary Inadvertent Interchange, and the hourly change in time error.
    a. A Balancing Authority will participate in Automatic Time Error Control at all times.
        i. The Balancing Authority time error bias, in megawatts, shall be its current* accumulation of Primary Inadvertent Interchange divided by the product of the Balancing Authority's proportional bias contribution and the correction time period (hours). A complete description can be seen in the WECC ACE equation.
        ii. The upper limit to the amount of time error contribution is bounded between 20% of the Balancing Authority's frequency bias setting and the Balancing Authority's allowable ACE limit for CPS2, defined by its L_{10}.
        iii. The time error bias term shall not be used in ACE when determining CPS compliance. The time error bias term shall be used in the control or processed ACE only.

   b. Balancing Authorities will continue t comply with 1.a. during periods of manual time error correction.
   c. A Balancing Authority may switch to Tie Line Bias control for 15 minutes when that Balancing Authority experiences a DCS event. The Balancing Authority shall return time error control immediately after the event.
2. At least once each day, every Balancing Authority will synchronize its time error to the nearest 0.001 seconds with the system time error as determined by the WECC Time Monitor.
   a. Daily, the WECC Time Monitor (California Independent System Operator) will read the value of system time error at 14:00 hours Pacific Prevailing time and broadcast it to all Balancing Authorities by 14:15 hours Pacific Prevailing time through the WECC Net Communication System.
   b. Each Balancing Authority will synchronize its time error to the nearest 0.01 seconds of the system time error by comparing its reading at 14:00:00 hours t the reading broadcast by the WECC Time Monitor; any difference is t be applied as an adjustment to its current time error.
3. When a manual correction for time error is announced, the WECC Time Monitor shall:
   a. Specify the start time,
   b. Specify the frequency offset,
   c. Specify the scheduled frequency.
4. Any Balancing Authority that removes the Automatic Time Error feature from service, other than for routine maintenance, should notify all other Balancing Authorities through the WECC Net Communication System.

* Current means that the on-peak Inadvertent Interchange Energy accumulation is used during the on-peak periods and the off-peak Inadvertent Interchange Energy accumulations is used during off-peak periods.

The bilateral method detailed in the NERC Operating Manual Policy Section 1.F is the approved WECC method for IIP under the following conditions:

1. Bilateral arrangements for IIP may be made for Inadvertent Interchange Energy that was accumulated prior to re-introducing Automatic Time Error Control, or;
2. Bilateral arrangements for IIP may be made when a Balancing Authority has an accumulation of Inadvertent Interchange Energy exceeding 20 times the Balancing Authority's Frequency Bias Setting.

The rules for the bilateral method of IIP are as follows:

1. Inadvertent Interchange Energy shall be paid back monetarily or with energy.
2. Inadvertent Interchange Energy shall be paid back in the same period in which the Inadvertent Interchange Energy was created, either "on-peak or off-peak."
3. A Balancing Authority with an Inadvertent Interchange Energy accumulation shall initiate communication with another Balancing Authority having an Inadvertent Interchange Energy accumulation of opposite sign and establish an IIP transaction.

4. IIP between adjacent Balancing Authorities must be implemented over an energized transmission path utilizing available transmission capability, but a transmission reservation is not required for this transaction. The IIP must be discontinued in the event that it creates contributing flow on a path for which the Unscheduled Flow Reduction Procedure has been implemented. It is the responsibility of the two participating Balancing Authorities to ensure it does not create system reliability problems, to monitor the transmission availability, and to modify the IIP as necessary.
5. IIP between non-adjacent Balancing Authorities not having transmission rights between them shall not exceed hourly amounts greater than 25 MW. This limit is imposed to minimize the amount of unscheduled flow. Notification of the IIP between non-adjacent Balancing Authorities shall be communicated to all involved systems via the WECC Net Communication System.
6. Non-adjacent Balancing Authorities with continuous transmission ownership or rights between them and Adjacent Balancing Authorities may implement mutually agreeable IIP transactions above 25 MW to reduce their Inadvertent Interchange Energy accumulation over a shorter period of time.
7. All IIP transactions between non-adjacent Balancing Authorities, regardless of having transmission ownership or rights, shall be communicated over the WECC Net Communication System. The Balancing Authorities initiating the IIP transaction shall supply the following information:
    a. Balancing Authorities involved with the IIP arrangement.
    b. Date and time of the IIP arrangement.
    c. Magnitude (MW value) of the IIP arrangement
8. Balancing Authorities with Inadvertent Interchange Energy accumulations of opposite signs may elect to enter into a financial agreement to reduce both obligations. Balancing Authorities using this type of IIP must:
    a. Account and report the IIP in a coordinated and timely manner to WECC and NERC.
    b. Must ensure the required NERC and WECC submittals are updated correct.
    c. Must ensure the real time accumulated Inadvertent Interchange Energy balances are adjusted properly.
9. All IIP transactions between Balancing Authorities must result in a proper reduction in each Balancing Authority's Inadvertent Interchange Energy accumulated balance. This is required whether the IIP is a payback in kind (energy) or a financial arrangement (monetary compensation).