



Reliability and Security Indicator Dashboard

QUARTER 3 – 2025

Reliability Risk Management
JANUARY 13, 2026

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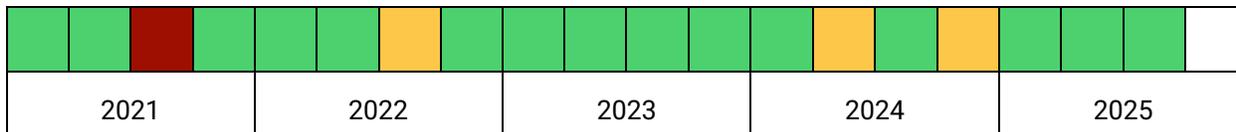
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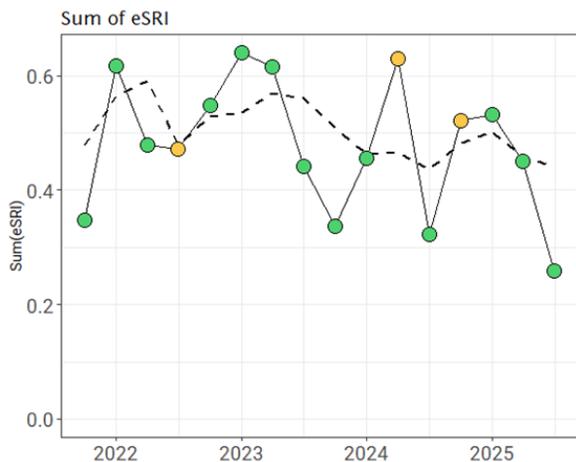


Indicator 1: Reportable Events

Indicator 1 Performance History—by Year and Quarter



Trend Charts



Quarterly Evaluation

There were seven categorized events in the Western Interconnection in Q3 of 2025. Five of these events were category 1a events, one each was category 1c and 1h.

Of these seven events, five resulted in transmission lines tripping out of service, three resulted in tripped generation resources, and two resulted in tripped customer loads.

The eSRI sum for the quarter is the lowest for the chart shown. This is due mainly to the rapid recovery of the resources lost during the event. One generator was out for several hours, but most of the equipment and loads were restored to service in less than an hour.

When compared to the historical trend of event impacts on the power system, the metric shows a reduction in impacts during the quarter and is well within the typical and good condition indicator criteria.

What it measures

Indicator 1 measures the frequency and severity of events that occur on the system each quarter. This measurement is based on the [NERC Event Analysis Process](#) to track and evaluate events. The indicator measures only [reported events](#) evaluated through that process.

How it is measured

Indicator 1 is based on two characteristics of reported events:

1. Sum of the [Event Severity Risk Index](#) (eSRI) number for each event every quarter.
2. Number of Category 2 and higher events each quarter.*

Why this matters

Events pose a risk to system reliability. Category 2 or higher events are more significant events that have severe impacts on the system.

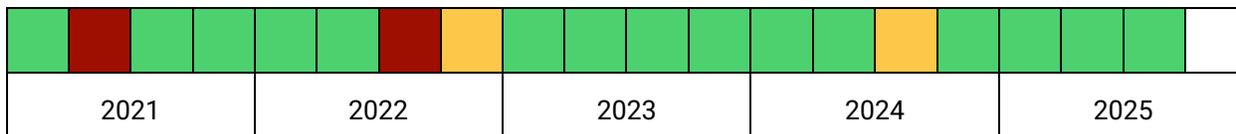
*Category 2 and higher events are rare, typically fewer than one per year. One Category 2 event occurred in Q3 2022.



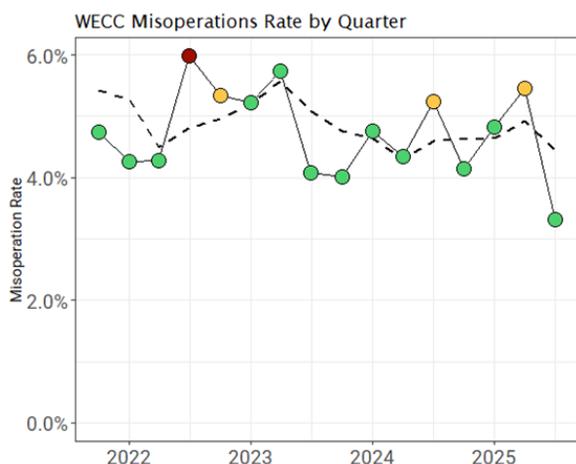


Indicator 2: Protection System Misoperations

Indicator 2 Performance History—by Year and Quarter



Trend Charts



Quarterly Evaluation

There were 41 misoperations reported in Q3 2025 along with 1,208 operations resulting in a misoperations rate of 3.4%. This is the lowest misoperations rate we have seen in the Western Interconnection; however, we have seen quarters with fewer misoperations. Since the misoperations rate is a simple ratio of misoperations/operations, the high number of operations for Q3 resulted in this low rate.

The leading causes for misoperations in the third quarter of 2025 were Incorrect Settings(14), Design Errors (6), and Relay Failures/Malfunctions (6). There were three slow trip misoperations during a fault this quarter. These were all due to incorrect settings. This type of misoperation is more severe than misoperations resulting in unnecessary trips because they allow the fault to be left on the system longer than designed, and remote protection is required to clear the fault. The 3.4% misoperations rate for Q3 is favorable, resulting in this indicator being green for the quarter.

What it measures

Indicator 2 measures the effectiveness of protection systems in safeguarding system reliability.

How it is measured

Indicator 2 tracks the ratio of protection system [misoperations](#) to the total number of protection system operations.

Why this matters

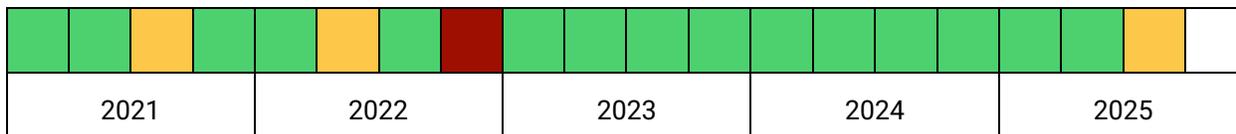
System reliability is reduced when protection systems fail to operate, or they operate incorrectly ("misoperation"). Misoperations are a major contributor to transmission outage severity.



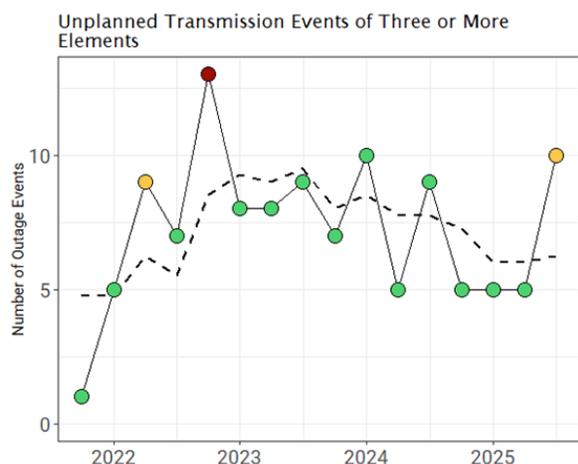


Indicator 3: Transmission Outages

Indicator 3 Performance History—by Year and Quarter



Trend Charts



Quarterly Evaluation

Of the 10 events involving three or more units, four events had a duration of less than 23 minutes. The longest duration event involved three elements, one of which was an AC circuit in the 300–399 kV range and two transformers. That event lasted 104 hours.

What it measures

Indicator 3 measures how often potentially high-risk, unplanned transmission outages occur on the system.

How it is measured

Indicator 3 tracks the number of unplanned transmission events involving three or more Bulk Electric System elements each quarter.

Why this matters

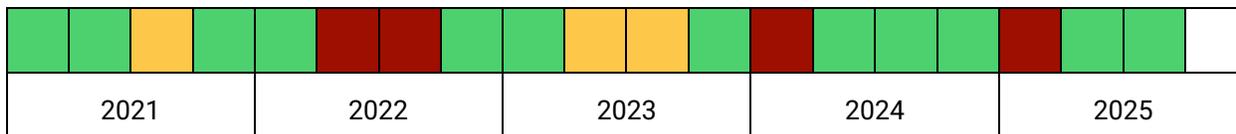
While most transmission events involve an outage of a single element, some events involve multiple elements. Though relatively uncommon, events involving three or more elements pose a higher risk because they are more extensive than the n-1 and n-2 contingencies typically considered by planners.



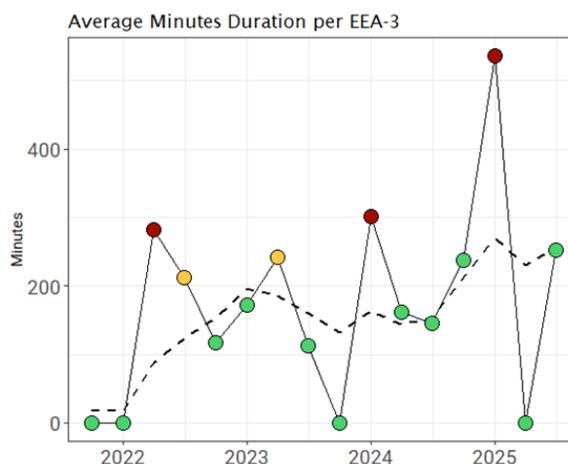
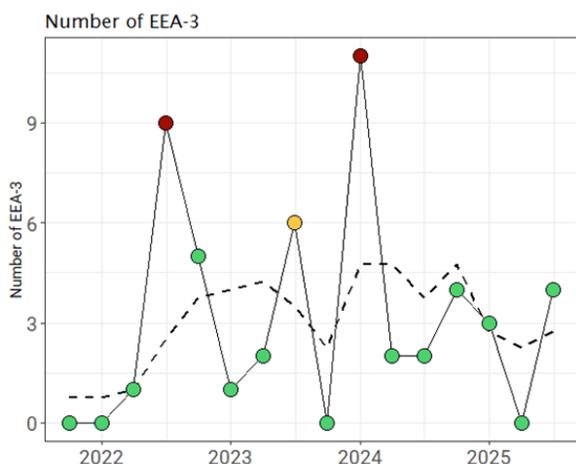


Indicator 4: Energy Emergency Alerts

Indicator 4 Performance History—by Year and Quarter



Trend Charts



Quarterly Evaluation

The WI had four EEA-3 events in Q3. RC West placed one BA into an EEA-3 three times over two days due to several unplanned generation outages leaving them deficient in contingency reserves. This is an increase of four from the previous quarter and slightly above the median for the metric. Firm load shed was not required during any of the events. The average minutes ticked up as well to the median due to the increase in events causing the duration minutes to increase. The indicator remains green for Q3.

What it measures

Indicator 4 measures the number and duration of Level 3 Energy Emergency Alerts (EEA-3) issued to Balancing Authorities each quarter. An [EEA-3](#) alert is defined as a situation in which firm load interruption is imminent or in progress.

How it is measured

Indicator 4 is based on two metrics related to EEA-3 alerts:

1. The number of EEA-3 alerts issued each quarter.
2. The mean duration of the EEA-3 alerts issued each quarter.

Why this matters

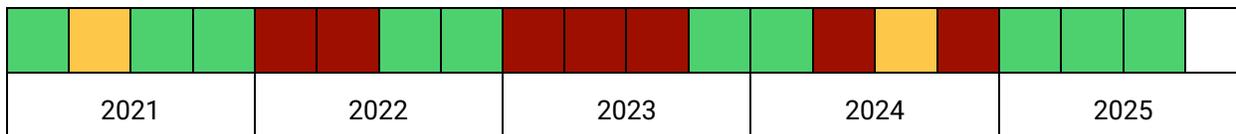
EEA-3 alerts can indicate a lack of sufficient bulk electric system generation capacity, energy, or transmission capability. EEA-3 alerts are an important indicator of system operational reliability.



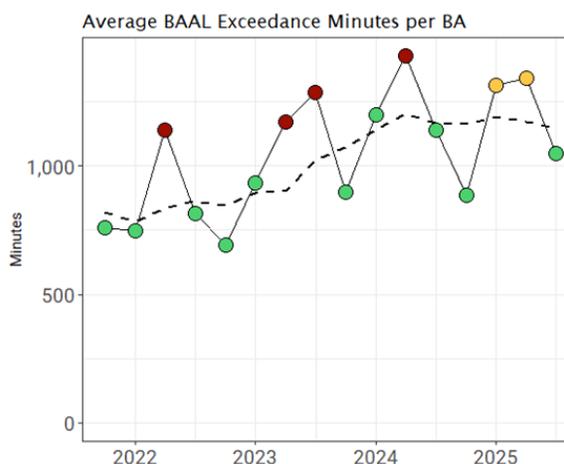
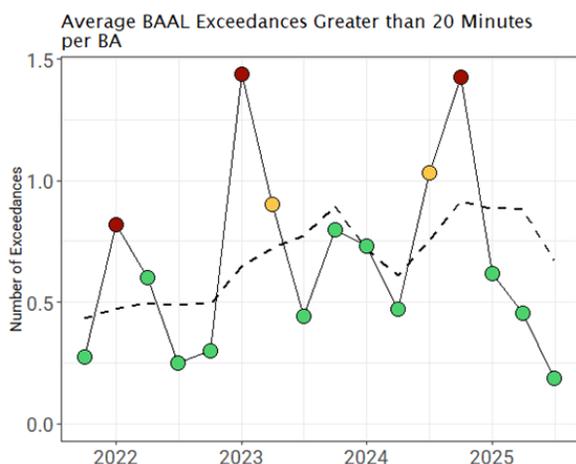


Indicator 5: Operation Outside BALL

Indicator 5 Performance History—by Year and Quarter



Trend Charts



Quarterly Evaluation

The risk indicator is low because quarter-over-quarter performance in “Average BAAL Exceedances Greater than 20 minutes per BA” has been declining consistently over the year to an all-time low. The “Average BAAL Exceedance Minutes by BA” is on a downward trend over previous quarters and is generally trending steady over time. These indicators, specifically, the “Average BAAL Exceedances Greater than 20 minutes per BA,” indicate BAs are more effective at controlling frequency in real time.

What it measures

Indicator 5 measures the system’s ability to maintain frequency within defined limits.

How it is measured

Indicator 5 is based on two metrics related to [Real Power Balancing Control Performance](#):

1. The mean number of Balancing Authority Area Control Error (ACE) Limit (BAAL) exceedance minutes per BA each quarter.
2. The mean number of BAAL exceedances greater than 20 minutes per BA each quarter.

Why this matters

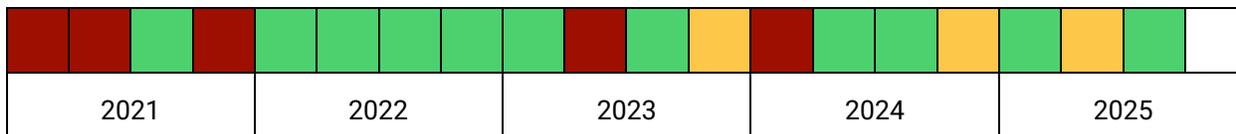
Operation within the BAAL supports reliability by maintaining system frequency within defined limits. Instances where the BAAL is exceeded may put the reliability of the interconnection at risk.



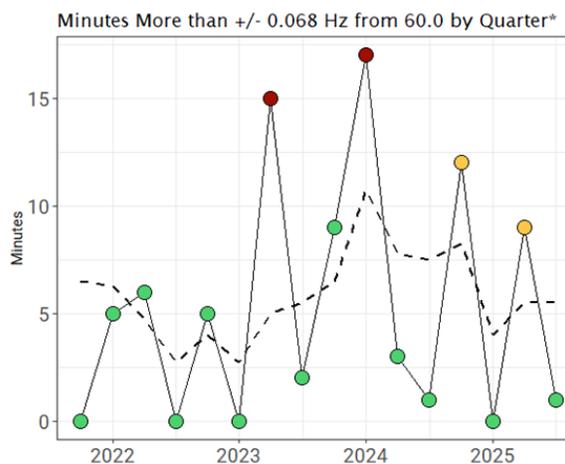
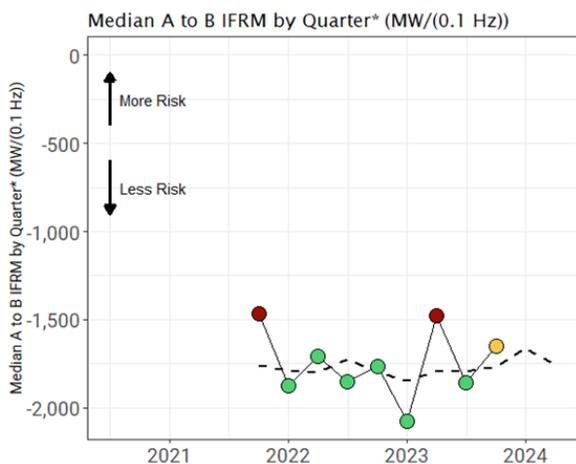


Indicator 6: System Frequency

Indicator 6 Performance History—by Year and Quarter



Trend Charts



Quarterly Evaluation

Beginning with Q1 2022, Indicator 6 has been modified to use the “operating calendar,” rather than the “standard calendar.” Per the operating calendar, December 2021 through February 2022 represents the first quarter of the 2022 operating year. This change will align Indicator 6 with the meeting, data availability, and reporting schedule of the NERC Resources Subcommittee (RS), which is the source of the IFRM data supporting this indicator. Other indicators will continue to use the standard calendar.

Use of the IFRM metric has been suspended due to insufficient measurement events. Therefore, Indicator 6 is currently based entirely on frequency performance.

The indicator remains green for Q3 as the interconnection has only one minute operating outside the band of 0.068 hz.

What it measures

Indicator 6 measures the system’s ability to respond to changes in frequency and maintain 60 Hz frequency.

How it is measured

Indicator 6 is based on [two characteristics of system frequency](#):

1. Frequency response to large disturbances—Frequency stability in response to events such as sudden generation or load loss, measured by NERC’s A-B IFRM metric.
2. Frequency performance under normal frequency behavior—Frequency stability at all times, measured as the number of minutes with a mean frequency exceeding +/- 0.068 Hz from 60 Hz.

Why this matters

Frequency should be kept as close to 60 Hertz as possible. When large disturbances occur, frequency should not deviate far from 60 Hertz and should be restored quickly. Maintaining frequency is a coordinated effort among BAs to balance generation and load. When one BA is unable to perform this balance, it can adversely impact the entire interconnection and, if not resolved, can lead to issues on the BPS that may include shedding firm load.

