## ALR3-5  IROL/SOL Exceedance

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| **Metric Number** | ALR3-5 |
| **Submittal Date** | February 27, 2009, revised on June 1, 2010 |
| **Sponsor Group (OC, PC or subgroup name)** | RMWG |
| **Short Title** | IROL/SOL  Exceedance |
| **Metric Description** | Simple number count of how many times and IROL/SOL (base case conditions or during a contingency) has been exceeded.  To illustrate how quickly IROL/SOLs are returned to within normal limits, the data will be grouped into 4 time segments as follows:<br>10 seconds < time IROL/SOL has been exceeded ≤ 10 minutes<br>10 minutes < time IROL/SOL has been exceeded ≤ 20 minutes<br>20 minutes <  time IROL/SOL has been exceeded ≤ 30 minutes<br>30 minutes < time IROL/SOL has been exceeded < ∞ minutes |
| **Purpose** | The NERC Glossary of Terms defines an IROL as a System Operating Limit that, if violated, could lead to instability, uncontrolled separation, or Cascading Outages that adversely impact the reliability of the Bulk Electric System.  This metric will provide the industry with data describing how often these events occur, and their duration. |
| **How will it be suited to indicate performance?** | It is anticipated that IROLs would be reported under this measure in the Eastern and Québec Interconnections, and SOLs in the WECC Interconnection.  Both IROLs and SOLs would be reported in the TRE Interconnection until its SOL method is revised, no longer having any IROLs.<br><br>This metric is a direct measure of the frequency and duration of flows on an interface exceeding the defined limit.  Exceeding IROL/SOLs could cause widespread outages if prompt operating control actions are not taken in a timely manner to return the system to within normal IROL/SOLs.  For example, NERC standard IRO-009-1 requires that data for all IROL/SOLs be collected, and that those greater than acceptable (i.e. greater than 30 minutes) be reported to its Compliance Enforcement Authority. |

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| **Formula** | Identify all IROL/SOLs in a Reliability Coordinator area. Count the number of times that an IROL/SOL has been exceeded. For each IROL/SOL event, record the start and end date/time that the IROL/SOL was exceeded so that the elapsed time may be calculated. Retain the times for possible correlation and future study. Identify the number of IROL/SOLs that are exceeded, and separate these into the 4 time segments listed above. |
| **Time Horizon** | Real time operations |
| **Metric Start Time or Baseline and Roll Up** | Year 2011, or when data is first available. |
| **Data Collection Interval and Roll Up** | Quarterly data from historical view |
| **Ease of Collection** | Only Reliability Coordinators need to provide this data. Each Reliability Coordinator currently collects raw IROL/SOL data regularly as required by IRO-009, but likely do not retain it in the format proposed by this metric. The fourth time segment above is currently reported to Regional Entities as required by TOP-007. The first three time segments above are not currently reported to NERC or the Regional Entities. |
| **Aggregation** | Initially data will be aggregated at the NERC level. |
| **Linkage to NERC Standard** | TOP-004, TOP-007, IRO-009 |
| **Linkage to Data Source** | Reliability Coordinator's data management systems and logs |
| **Need for Validation or Pilot** | No |
| **Data Submitting Entity** | Reliability Coordinators |

| **SMART Rating** | Total Score | Specific/ Simple | Measurable | Attainable | Relevant | Tangible/ Timely |
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| | 14 | 3 | 2 | 3 | 3 | 3 |

| **Reporting** | |
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| **Style (look and feel)** | Line chart for each of the four time segments above |
| **Publications and Documentation** | Future NERC reliability metrics report and quarterly update on NERC website |