ALR6-16 Transmission System Unavailability due to Automatic Outages	
Metric Number	ALR6-16
Submittal Date	May 8, 2009
Sponsor Group (OC, PC or subgroup name)	SERC Reliability Corporation
Short Title	Transmission System Unavailability due to Automatic Outages
Metric Description	Overall percent of time the aggregate of transmission system facilities (i.e., AC circuits and transformers 200 kV and above) are unavailable for service (out of service) due to sustained automatic outages. Planned outages are not included in this metric. Momentary outages would not be included in this calculation.
Purpose	To determine the percent of time that the transmission system operated at 200 kV and above is unavailable due to sustained automatic outages. This value may be trended over time to gauge increasing or decreasing performance.
How will it be suited to indicate performance?	The unavailability is the percentage of time the entire transmission system is not available (i.e., out of service) for the transmission of electricity due to sustained automatic outages. The relative percentage provides an indication of the overall unavailability of the transmission system operated at 200 kV and above, which indicates reliability performance.
Formula	The percent of time the interconnected transmission system (AC circuits and transformers) operated at 200 kV and above is unavailable due to sustained automatic outages is calculated as follows: $$\text{Unavailability (in \%)} = \frac{\text{Total hours out-of-service due to automatic outages}}{\text{Total facility-hours}} \times 100$$ where, Total facility-hours = hours in a year X number of facilities reported Total hours out-of-service = A summation of the hours out-of-service during the year for all of the facilities (i.e. AC circuits and transformers) Example: For a year with 365 days (or 8,760 hours) and a system with 90 facilities (AC circuits and transformers) that had 5,000 total facility-hours out-of-service due to sustained automatic outages, Total facility-hours = (8,760 hours in a year) X (90 facilities) = 788,400

$$\text{Unavailability} = \frac{5{,}000}{788{,}400} \times 100 = 0.63\%$$

Time Horizon	Historical perspective
Metric Start Time or Baseline and Roll Up	Year 2008, the first year of TADS
Data Collection Interval and Roll Up	Data collection is through the NERC TADS procedure. Metric calculation is one value for each Interconnection (Eastern, Western, Texas, and Québec) for the aggregate of facilities 200 kV and above. The metric would be reported on the same interval as TADS reports.
Ease of Collection	The TADS database makes this metric easily reportable on a uniform basis.
Aggregation	Reported on an aggregate basis by Regional Entity, Interconnection (Eastern, Western, Texas, and Québec) and NERC.
Linkage to NERC Standard	None
Linkage to Data Source	NERC TADS database http://www.nerc.com/docs/pc/tadswg/Data_Reporting_Instr_Manual_09-29-09.pdf
Need for Validation or Pilot	No, the data and results is already being reported via the TADS process. [Note: The former ECAR, MAIN, and MAPP regions had collected and reported similar data and statistics in the past and could be used for reference.]
Data Submitting Entity	Transmission Owner via TADS reporting procedure

SMART Rating	Total Score	Specific/ Simple	Measurable	Attainable	Relevant	Tangible/ Timely
	13	3	3	3	2	2

Reporting	
Style (look and feel)	Bar charts, with possible trend lines added in the future
Publications and Documentation	This metric is recommended to be added to the NERC TADS report and included in NERC metrics reports.