

# Operate within Interconnection Reliability Operating Limits

Ed Riley

Drafting Team Chair

August 7, 2003

# Drafting Team Members

Paul Cafone

Al DiCaprio

Tony Jankowski

Wendy Ladd

Jamie Murphy

Ellis Rankin

Gerry Rheault

Ed Riley (chair)

Tom Vandervort (sec.)

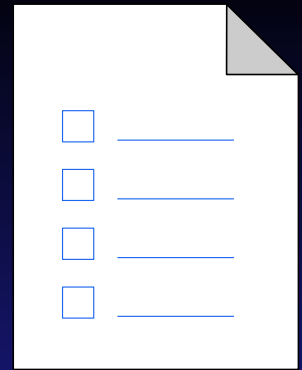
Charles Waits



# Coordination Efforts During Version 2 Drafting

- Met with OLD Task Force Representative
- Met with Facility Ratings SDT

# Major Changes to Standard *(Thanks for the comments!)*



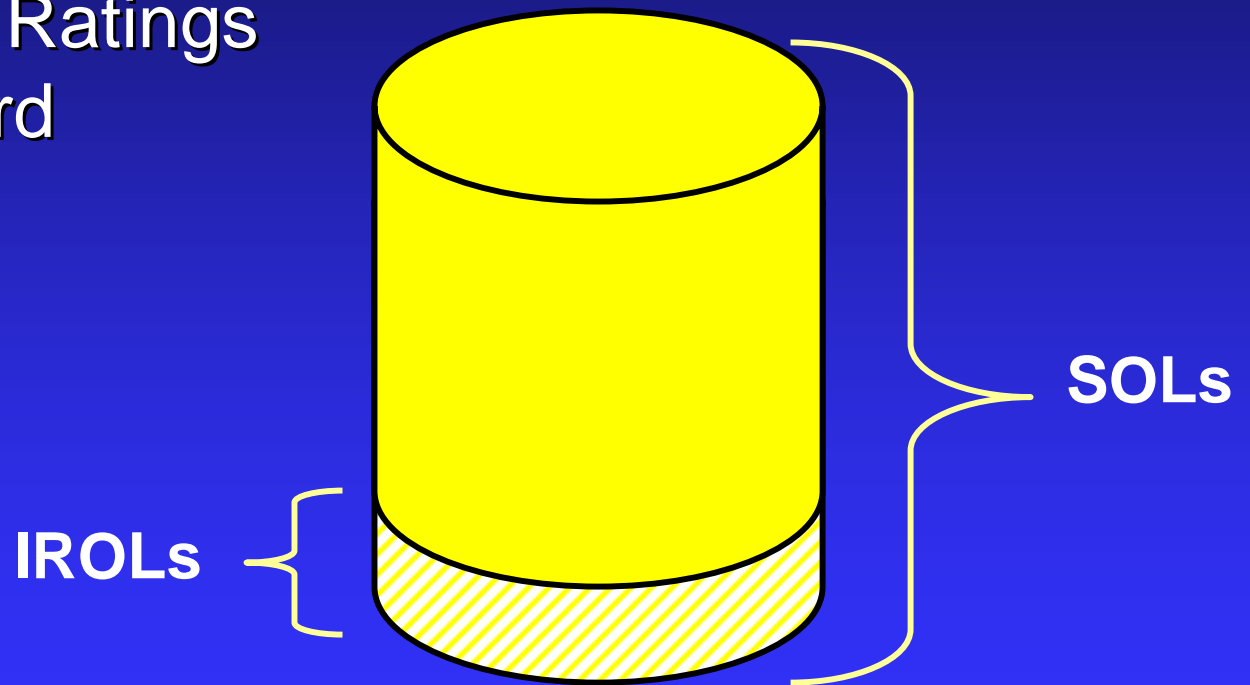
- Defined IROLs
- Clarified which IROLs are reportable
- Dropped Redundant TOP Requirements
- Reliability Analyses  $\Rightarrow$  Operational Planning Analyses and Real-time Assessments
- Data Requests  $\Rightarrow$  Data Spec
- Mitigation Plan  $\Rightarrow$  Action Plan
- Added Requirement to follow RA Directives

# Interconnection Reliability Operating Limit (IROL)

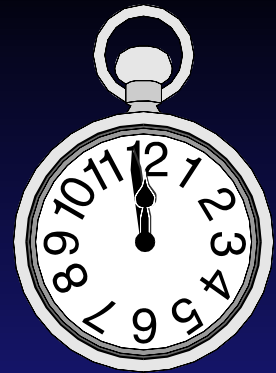
- System operating limit
- If exceeded, could lead to:
  - ◆ Instability
  - ◆ Uncontrolled separation
  - ◆ Cascading outages

# SOLs and IROLs

- Developed following Facility Ratings Standard

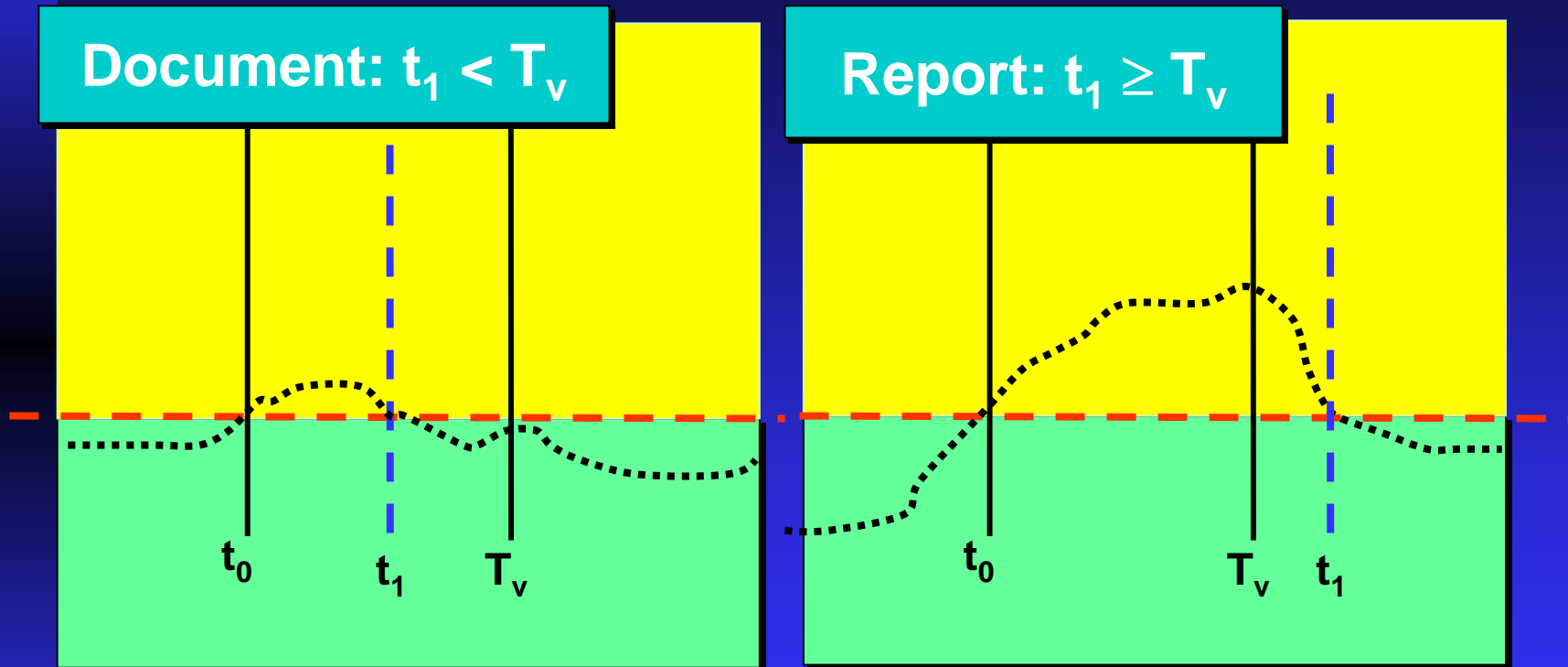


# $T_v$ for each IROL



- Recognizes differences in operational strategies available to each RA
- Supports flexibility in using market solutions
- May be zero

# Documenting & Reporting IROL Events



$t_0$  – initiation of an IROL event  
 $T_v$  – IROL violation time  
 $t_1$  – end of IROL event

----- IROL  
..... Real-time value



# Redundant TOP Requirements

- Many Comments said ‘Take them out!’
- Functional Model:
  - ◆ TOP responsible for local network integrity
  - ◆ One Function responsible for each activity - no duplication
- Letter sent to Director - Standards for action

# Reliability Analyses $\Rightarrow$ Operational Planning Analysis & Real-time Assessments

## ■ Operational Planning Analysis

- ◆ Analysis of expected system condition
- ◆ Should ensure that no IROL is exceeded in normal operation
- ◆ Done up to seven days ahead of the expected conditions (Std requires 1/day for next day)

## ■ Real-time Assessments

- ◆ Collect and review real time data to determine system status
- ◆ Std requires 1/30 min

# Data Request $\Rightarrow$ Data Specification

- Supports:
  - ◆ Data needed to monitor & assess system relative to IROs
- Data spec includes:
  - ◆ Types of data to be provided
  - ◆ Timeframe for providing data
  - ◆ Mutually agreeable format for data
- Distributed to entities:
  - ◆ With facilities monitored by RA
  - ◆ That provide RA with facility status

# Mitigation Plan ⇒

## Action Plan (Preventing & Mitigating)

- Act or Direct others to Act
- Document (no approvals required)
- Coordinate with all involved & impacted entities
- May be procedure(s) that already exist

# Requirements:

- IROL Identification
- Monitoring
- Analyses and Assessments
- Actions
- Data Specification & Collection
- Data Provision
- Action Plan
- RA Directives

Questions?

