

To prevent wide Area Blackout

Registration No.	Number 00318		
Registration Date	September 14, 2021	Registration Category	Category 2

Name (Model, etc.)	Documents relating to an On-Line Transient Stability Control system for trunk power system
Location	Nagoya-shi, Aichi
	Chubu Electric Power Grid Co., Inc.
Owner (Custodian)	Chubu Electric Power Grid Co., Inc.
Manufacturer (Company)	A series: Toshiba Corporation (now Toshiba Energy Systems & Solutions Corporation) B series: Hitachi, Ltd.
Year Manufactured	1995
Year first appeared	1995 (Start of operation)
Reason For Selection	This document collection describes the On-Line Transient Stability Control (TSC) system for trunk power systems, which maintains stability of power system using online data (hereafter, “real-time data”). It includes completion documents for A series and specifications of stability calculations for B series. Conventional control system configured the control amount based on previous desk studies to deal with network instability of power system caused by incidents that might lead to blackout; however, there were many problems, such as too excessive generator shedding from power system, or too many operational constraints. The TSC system, on the other hand, monitors the power network status based on real-time data and is thus better able to maintain stability of power system by adapting to changes from moment to moment. It brings together a variety of advanced technological elements including a computation system comprising two series, A and B, from different manufacturers with different logic; advanced network analysis; protective relay; and a communications system. The TSC system monitors the operational status of the power network including power flow, and executes appropriate control in respond to incidents as they occur to prevent further impact. It has been enhanced to accommodate expansion of power system, and been operating with various upgrades in hardware and software. This is an important example of key public infrastructure.
Registration Standard	2-A (Played a notable role in improving people’s way of life and creating new ways of living.)

Open/Closed to Public	Closed to Public
Photo  《Trunk TSC system (A series)》  《Trunk TSC system (B series)》	
Other useful information	