STABILITY ANALYSIS

INPUT REQUIREMENT CHECKLIST

COMPILED BY

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Let's Build a Safer Electrical World

Disclaimer:
This checklist is a guidance tool compiled from common electrical design practices and widely accepted industry standards. It outlines typical information required for electrical studies. Actual project requirements may vary based on the nature and scope of work.

REQUIRED INPUT LIST

Sr. No	*Documents/Data*	*Known/ Available*	*Unknown/ Unavailable*
A.	***SYSTEM DATA***		
1.	Impedance (R + jX) of all significant transmission lines, cables, reactors, and other series components, System Voltage & frequency	☐	☐
2.	**Transformers and autotransformers:** kVA rating, Impedance, Voltage ratio, Winding connection, Available taps and tap in use, For regulators and load tap-changing transformers: regulation range, tap step size, type of tap changer control	☐	☐
3.	Short-circuit capacity (steady-state basis) of utility supply, if any	☐	☐
4.	kVAR of all significant capacitor banks	☐	☐
5.	Description of normal and alternate switching arrangements	☐	☐
B.	***LOAD DATA***		
6.	Real and reactive electrical loads on all significant load buses in the system (mention load type if available)	☐	☐
C.	***ROTATING MACHINE DATA***		
7.	**Major synchronous machines** • Mechanical and/or electrical power ratings (kVA, hp, kW, etc.) • Inertia constant H or inertia Wk^2 of rotating machine and connected load or prime mover • Speed • Real and reactive loading, if base-loaded generator • Speed torque curve or other description of load torque, if motor	☐	☐

Sr. No	*Documents/Data*	*Known/ Available*	*Unknown/ Unavailable*
	• Direct-axis subtransient, transient, and synchronous reactances Quadrature-axis subtransient, transient, and synchronous reactances • Direct-axis and quadrature-axis subtransient and transient time constants • Saturation information • Potier reactance • Damping data • Excitation system type, time constants, and limits • Governor and steam system or other prime mover type, time constants, and limits • Generator Capability Curve (if available)		
8.	**Minor synchronous machines** • Mechanical and/or electrical power ratings • Inertia • Speed • Direct-axis synchronous reactance	☐	☐
9.	**Major induction machines** • Mechanical and/or electrical power ratings • Inertia • Speed • Positive-sequence equivalent circuit data (e.g., R_1, X_1, X_M) • Load speed-torque curve • Negative-sequence equivalent circuit data (e.g., R_2, X_2) • Description of reduced-voltage or other starting arrangements, if used	☐	☐
D. ***DISTURBANCE DATA***			
10.	General description of disturbance to be studied, including (as applicable) initial switching status; fault type, location, and duration; switching operations and timing; manufacturer, type, and setting of protective	☐	☐

Sr. No	*Documents/Data*	*Known/ Available*	*Unknown/ Unavailable*
	relays; and clearing time of associated breakers, Sequence of switching operations (single-line event timeline).		
E.	***STUDY PARAMETERS***		
11.	Duration of study	☐	☐
12.	Integrating interval	☐	☐
13.	Output printing interval	☐	☐
14.	Data output required.	☐	☐
15.	Template for Reports(Native File)	☐	☐

If any required data is not available, we will coordinate with your team to obtain it. In cases where information remains unknown, it will **not** be ignored. Instead, we will incorporate it using **conservative assumptions** grounded in **sound engineering judgement**, and clearly highlight these in our documentation wherever relevant