

ITCS

INTERREGIONAL TRANSFER
CAPABILITY STUDY

Quarterly Technical Update

October 2023

INSIDE THIS EDITION

[ITCS Study Framework](#) | [Part 1: Case and Scenario Development](#) | [ITCS Project Team](#) | [About the ITCS](#)

ITCS Study Framework

Purpose and Background

NERC is studying the reliable transfer of power between neighboring “transmission planning regions” and will file with FERC a recommendation of prudent additions to total transfer capability to meet future demand and strengthen reliability. NERC recognizes that strong and flexible electric transmission systems capable of coping with a wide variety of system conditions are necessary for a reliable supply and delivery of electricity. NERC is engaging industry stakeholders to gather inputs, assumptions and conditions and ensure the study is comprehensive and inclusive of necessary information.

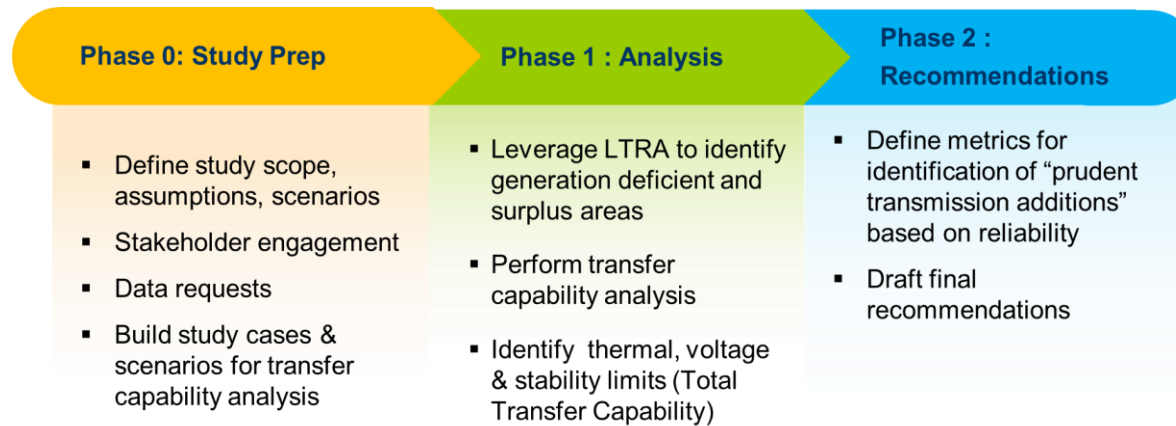
Quick Links
<ul style="list-style-type: none"> • ITCS Webpage • Fiscal Responsibility Bill • Advisory Group Roster • Eastern Interconnection Reliability Assessment Group (ERAG)

ITCS Advisory Group

The purpose of the ITCS Advisory Group is to ensure adequate consultation with the ERO and stakeholders on the study scope, approach, results, and recommendations.

ITCS Project Phases

Three (3) primary phases make up the expected 18 months of study, analysis, report development, and stakeholder comment period.



Project Plan and Schedule

Phase 0

- **Kickoff Phase (Months 1-2):** Establish the Executive Leadership Group and ERO Project Team. Initiate the project, define objectives, and finalize the project plan. Define roles and responsibilities of NERC Staff, Regional Staff, and any consultants and/or contractors.
- **Stakeholder Engagement Phase (Months 3-5):** Establish the special stakeholder Advisory Group, conduct workshops and meetings, gather input, and incorporate stakeholder feedback into the study. Post study framework for stakeholder comment (21 days). Gather input and feedback on scenarios, assumptions, and case development.
- **Data Requirements, Collection Phase (Months 4-5):** Determine necessary data and information to perform study. Regional Entities collect and validate the data from transmission planners; conduct detailed data analysis.

Phase I

- **Base Case and Scenario Development Phase (Months 3-8):** Develop the steady state and dynamic models for the study; Create transmission system models with appropriate transfers, assess system constraints, and evaluate various scenarios to identify potential enhancements.
- **Perform Transfer Capability Study & Scenario Analysis (Months 8-11):** Perform study of existing transfer capability, and study various scenarios to identify potential enhancements.

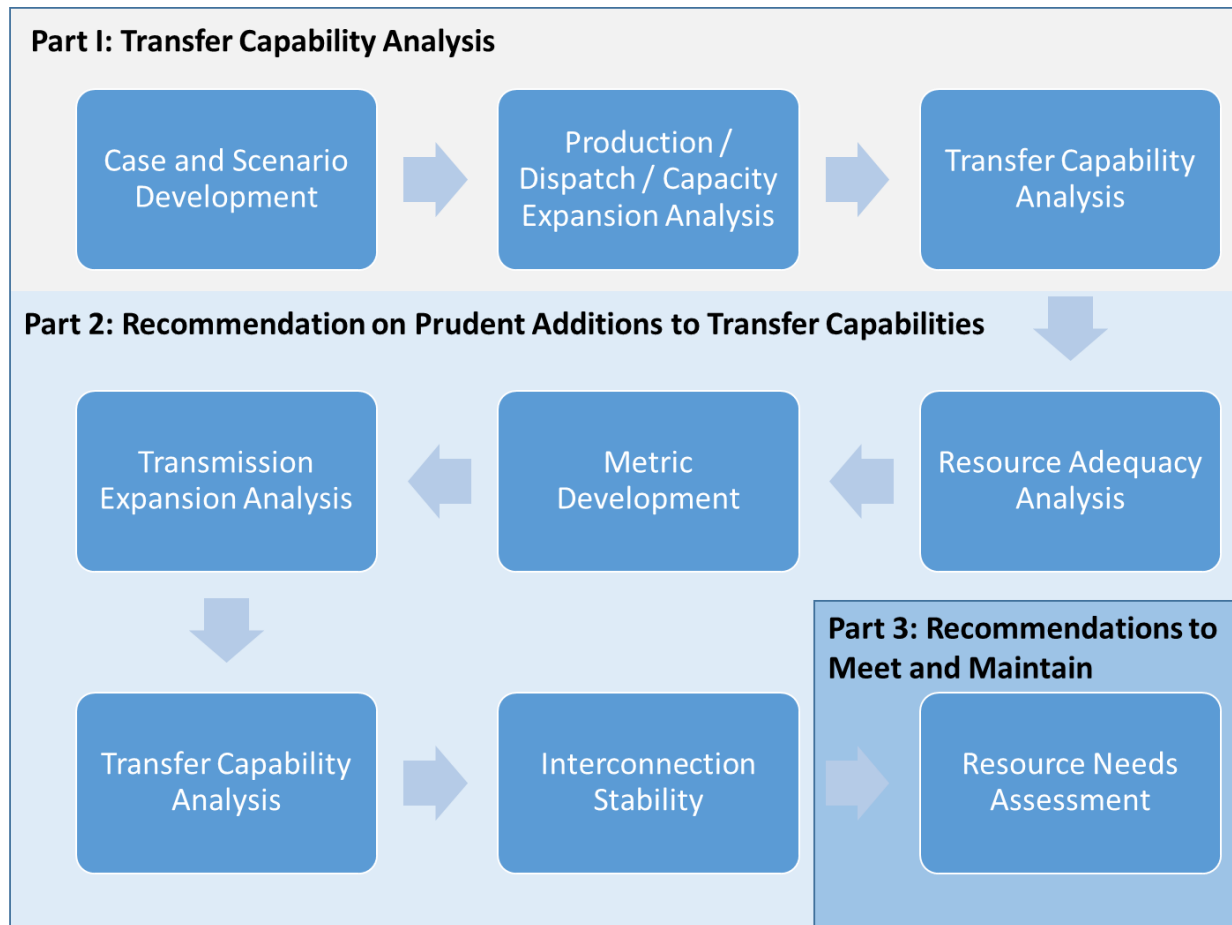
Phase II

- **Define Metrics for System Enhancements Phase (Months 8-10):** Determine approach for quantifying increased transfer capability needed for reliability.
- **Identify Transmission Capability Needs (Months 11-14):** Analyze study findings, identify reliability challenges, and formulate recommendations on any prudent additions to transfer capability in the interest of reliability as well as measures to help achieve any such additions.
- **Final Report Preparation Phase (Months 15-16):** Compile study results, develop a comprehensive final report, review and validate the report with stakeholders, and address any feedback received.
- **Stakeholder Comment Phase (Months 17-18):** Solicit comments through an open stakeholder process and incorporate into final report.
- **Submit to FERC (Month 18):** December 2, 2024
- **FERC Review (Month 18-30):** Provide support to FERC, as needed.

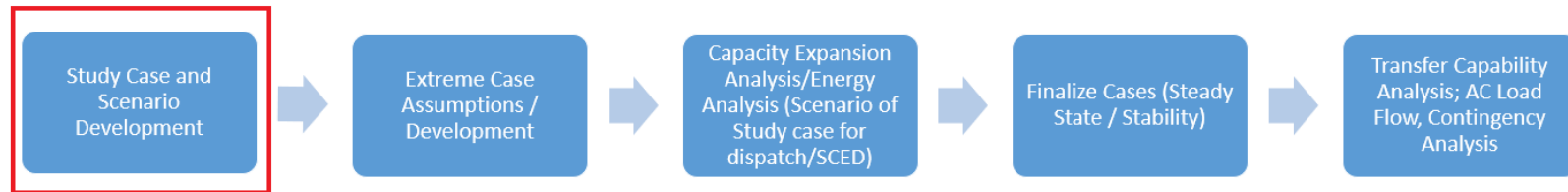
High-Level Analysis Plan

The ITCS will follow this high-level analysis plan. The plan is derived from the requirements of the 2023 Fiscal Responsibility Act (FRA). Each part requires a certain level of analysis and engineering skills, and the process must be done in a particular order.

- **Part 1 Objective:** Determine the total transfer capability between neighboring transmission planning regions.
- **Part 2 Objective:** Identify “prudent” additional transfer capability between neighboring areas to resolve reliability issues in the future.
- **Part 3 Objective:** Identify mechanisms to achieve and sustain the identified transfer capability and any recommended enhancements.



PART 1: Case and Scenario Development (In-progress)



Description

NERC and the ERO Project Team, in consultation with the ITCS Advisory Group, will develop scenarios and study cases representing expected (normal) conditions, define the transfer analysis approach to be used in the ITCS, and document assumptions.

Deliverables

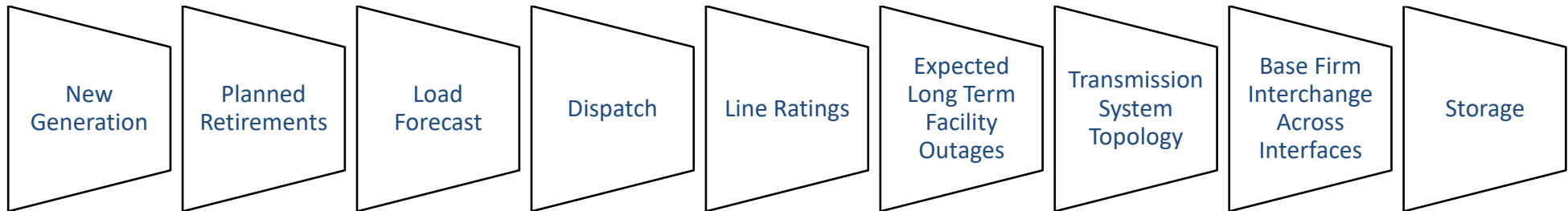
1. **A documented description of the following included in the ITCS Scope:**
 - a. MOD-32¹ (seasonal) Base Cases (or updated based case(s) for ITCS) and Years For Study
 - b. Transfer Analysis Scenarios specifying simulated source and sink regions, contingencies, and remedial action schemes
 - c. Key transfer analysis assumptions such as transfer steps, capacitor switching assumptions, whether to simulate transfers only in steady-state or both steady-state and dynamics.
 - d. Identify scoping assumptions to incorporate inter-Interconnection transfers in the ITCS
 - e. Scenarios representing expected (normal) conditions
2. **Updated MOD-32 cases for use by Regional Entities and groups performing the ITCS**

Identified Scenarios



¹ **MOD-32 Base Case:** A typical run of the mill base case (such as heavy summer, heavy winter etc. case) typically produced for a given year representing expected resources, loads and transmission topology.

Key Assumption Focus



Case Selection

Eastern Interconnection

Summer and Winter peak cases from the Multiregional Modeling Working Group (MMWG) 2023 series will be used. These are assembled with a non-coincident 50/50 load level and are available in PSSE v35 formats. The Eastern Interconnection Reliability Assessment Group (ERAG) will be conducting the analysis.²

Western Interconnection

WECC will be producing Heavy Summer and Heavy Winter peak cases for the applicable study years. These are assembled with a non-coincident 50/50 load level and are available in PSSE v34 and PSLF v22 formats. WECC Staff will be conducting the analysis.

Electric Reliability Council of Texas Interconnection

Cases for ERCOT are not required, transfers will be based on DC tie ratings and should be modelled into the Eastern Interconnection cases. Estimates of load for 2024 and 2033 summer and winter will be provided.

Tool Selection

PowerGem TARA software will be used for steady state thermal and voltage analysis.

Completed Actions

The ERO Project Team and Advisory Group formed to collaborate on the study. Initial scenarios selected. Power flow and transmission topology cases selected.

² Quebec Interconnection is included in the power flow cases and analysis for the Eastern Interconnection.

Upcoming Actions

The ERO Project Team holding first quarterly meeting with ITCS Advisory Group October 31 to review the scope of the study, share the role of the Advisory Group, review the project plan and deliverables and review the Advisory Group schedule.

ITCS ERO Project Team

Scope

ERO Staff Team (NERC and Regional Entity Staff) will oversee, coordinate, and conduct the required studies. The ERO Project Team will manage the day-to-day operations of the ITCS and any consulting work needed to conduct the engineering studies.

Management Roster

NERC Staff	
John Moura	Director, Reliability Assessment and Performance Analysis
Jake Schmitter	Principal Program Coordinator, Reliability Assessment and Performance Analysis
MRO	
Bryan Clark	Director of Reliability Analysis
Salva Andiappan	Principal, Reliability Assessment
NPCC	
Michael Lombardi	Director, Reliability Assessments
RF	
Jim Uhrin	Director, Engineering and Reliability Services
Johnny Gest	Manager Engineering & System Performance
SERC	
Gaurav Karandikar	Sr. Manager RAPA & Technical Services
Melinda Montgomery	Sr. Director Engineering & Analytics
Texas RE	
Mark Henry	Chief Engineer and Director, Reliability Outreach
Brad Woods	Senior Reliability Engineer
WECC	
Vic Howell	Director of Reliability Risk Management

Working Teams



ABOUT THE ITCS AND ITCS TECHNICAL UPDATES

A strong, flexible transmission system that is capable of coping with a wide variety of system conditions is key for the reliable supply and delivery of electricity. NERC is conducting the Interregional Transfer Capability Study (ITCS) to analyze the amount of power that can be moved or transferred reliably from one area to another area of the interconnected transmission systems. The study, which was directed in the [Fiscal Responsibility Act of 2023](#), must be filed with the Federal Energy Regulatory Commission by December 2, 2024.

The Technical Updates will compile a list of important ITCS project technical activities with actionable deadlines as well as upcoming events and recently posted resources. Please email [Jake Schmitter](#) with any questions.