

DRAFT
Analytical Work on the Feasibility of Consolidating Traditional
Control Area-Related Functions¹

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Goal:

Through investigation and analytical work provide sufficient information for the Parties to decide what aspects of those traditional control area operations that should be combined to improve reliability and enhance operating efficiencies. Initial focus should be on Balancing Authority/Transmission Operator tasks.

Parameters:

- Design parameters
 - Work within larger evolving framework of new reliability entities, roles and responsibilities; identify tasks that would benefit from consolidation under single entity
 - Include options regarding analytical tools that promote reliability and efficient operations
 - Options to provide operators and appropriate parties broad regional visibility of system operating conditions
 - Identify specific functions that might benefit from consolidation
 - Do preliminary cost/benefit or cost/effectiveness analysis on such functions
 - Be creative as to how functions might be consolidated and accomplished
 - Consolidation is voluntary, unless mandatory
 - Participation in markets (if any) is voluntary
 - Participants submit balanced schedules
 - Impacts to existing Tx rights and business practice flexibilities should be identified
 - Services provided by CG should have identified benefits to the participants
 - ColumbiaGrid will not have physical operational control, e.g., will not perform any switching, although could direct or coordinate switching
 - Considerable thought and evaluation should go into where the line should be drawn between ownership and operational responsibility (authority versus responsibilities versus delegation)
 - Address confidentiality concerns, including critical infrastructure, market sensitive information, standards of conduct, and general access to information (who gets it and under what protections)

¹ “Consolidation” means aggregating systems; redefining responsibilities; and changing operating protocols via bilateral or multilateral contracts.


- Options within changing framework (changing reliability entities, roles and responsibilities)
 - Nested Control Area
 - Virtual Control Area
 - New control center
 - Status Quo
 - Logical sequence of functions that may merit consolidation based on the outcome of reliability and cost/benefit or cost/effectiveness analyses of with and without consolidation of the various increments of consolidation. (This will facilitate reasoned decision making and staged implementation consistent with cost/benefit or cost/effectiveness and reliability analyses)
 - Other?
- Staged Design
 - First Stage – sufficiently detailed design (range of options) to enable parties to make decision on whether to proceed with consolidation design
 - Feasibility
 - Cost Effectiveness or Cost/Benefit (short-term and long-term), as appropriate
 - Reliability Analyses
 - Acceptability
 - Second Stage – after decision to go forward, detailed technical proposal capable of implementation
- Establish an open, public stakeholder process for developing the design
- Discuss potential limits on budget and authority of ColumbiaGrid and what to do when these limits are approached

Questions to be evaluated include:

- Would any new centralized markets be needed in order to consolidate, in whole or in part, and, if so, what kind(s) and who would operate them?
- Transition plan (staged, all at once?), including proposals to address barriers
- What are the impacts to physical infrastructure and personnel
 - Can “virtual” consolidation be accomplished, providing the functionality required at lower cost than a conventional consolidation approach?

Deliverables:

- Iterative process with multiple check-in points
- Develop detailed proposal(s), including:
 - Conceptual design documents of alternatives
 - Functions & services to be performed by CG
 - Business processes
 - Roles & responsibilities of participants
 - Scope: hardware, software, wetware
 - Review with parties – proceed as designed, or rework

- When conceptual proposal is agreed on, develop detailed proposal(s) (including any alternatives) to be studied further.
 - Technical design documents with sufficient detail to be used for RFPs to implement the conceptual design
 - Facilities
 - Systems
 - Telecommunications
 - Personnel
 - Other
 - Estimated costs for ColumbiaGrid and the potential consolidating parties
 - Startup costs
 - Annual Operating Expenses
 - Revenue requirements
 - Cost allocation options
 - Estimated benefits
 - Cost reductions
 - Reliability improvements
 - General economic benefits
 - Cost-effectiveness analyses, as appropriate
 - Identify impacts on third parties (e.g., adjacent control areas, embedded entities, loads, generators)
 - Plan for phased implementation, if appropriate
 - Beginning state should be a clear improvement over current state and responsive to the needs of the parties
 - Each stage should be workable in itself
 - Each stage should enable further solutions to remaining problems
 - No stage should be an obstacle to later stages
 - Early tasks to provide context and help structure work:
 - Independently assess the benefits that can be achieved through consolidation
 - Reliability
 - Commercial
 - Independently assess the risks and costs of consolidation
 - Inventory existing and prospective ColumbiaGrid tools, staff and systems for support of multiple ColumbiaGrid functions 

Possible Problems with the current Status Quo to be addressed in the Design and Decision-Making Stages:²

- Control area operators do not have a broad view of the system
- Control areas do not have the authority or mechanisms to achieve maximum efficiency on a system-wide basis


² The systems and processes today have good points, weak points and areas where enhancements are expected. Below are specific issues in each of these areas that the parties want the design team to consider.

- Independent decisions by individual control areas can lead to impacts on other control areas
 - Addressed reactively, not proactively
 - Addressed on individual systems
- Transmission system no longer has flexibility sufficient to allow control areas to operate as independently (a “one utility” viewpoint may allow for more efficient/effective operation)
- Difficulty managing unscheduled flows on the Tx system, leading to reliability risks
- Difficulty reconciling physically available Tx capacity with that available on a contractual basis, resulting in potentially inefficient use of available Tx and generation capacity

Problems to Try to Avoid:

- Avoid losing the current control area operator’s detailed on-the-ground knowledge of the area they are responsible for
- Avoid creating new and inefficient seams between embedded and adjacent entities
- Avoid affected entities not being sufficiently prepared for implementation
 - Staff
 - Technology
- Avoid adverse impacts on people who do commerce (ability to complete transactions efficiently and with knowledge of transactional impacts, including final transactions costs before the deal is done)
- Avoid negative impacts on Automatic Generation Control such as oscillation, or frequency excursions
- Avoid complexity and timing requirements for model implementation (multiple layers of communication)
- Do not relieve operating responsibilities of individual entities without a thorough evaluation of the tradeoffs
- Design consolidation in a way that will accommodate performance under existing contracts (including amendments)
- Large consolidated control areas may lack in-depth knowledge of component systems *[critical to get into cost/benefit analysis]*
 - Lose advantage of local knowledge and control – in order to maintain reliability, will need to maintain existing prior control area operating staff and systems
 - Costs may increase due to large expense of new operating entity and no or little avoided costs
 - Reliability of the consolidated control area can often decrease as a result of the above factors

Existing Qualities to Maintain or Enhance:

- High reliability (OTC violations and outages have overall been minimal and reliability high)
- High  ibility[TRS2]

- Ability to trade freely in the bilateral market at costs that are known in advance of the transaction
- Minimal burden on participants to use the system
- System is relatively simple so re-tooling infrastructure and re-training staff of impacted entities is minimized
- Infrastructure is paid for and operating expenses are low

Staffing:

Will need one FTE and the equivalent funds needed to use a contractor to do the feasibility study

Need to develop timeline for what would be done in 15 months