



NORTH AMERICAN ELECTRIC RELIABILITY COUNCIL

Princeton Forrestal Village, 116-390 Village Boulevard, Princeton, New Jersey 08540-5731

Functional Model Working Group Meeting

November 17, 2005 — 1–5 p.m.
November 18, 2005 — 8 a.m.–noon

Doubletree Hotel Coconut Grove
2649 S. Bayshore Drive
Miami, Florida 33133
☎ 305-858-2500

Agenda

1. **Administration** — Secretary
 - a. Introductions
 - b. Meeting procedures
 - c. Antitrust Compliance Guidelines
 - d. Minutes of previous meetings
2. **Regional Reliability Plan Guideline**
3. **Delegation Principles**
4. **Proposed Regional Reliability Organization Function**
5. **Functional Model — Version 3**
6. **Technical Document**
7. **Working Group Action Plan**
8. **Next Meeting**
9. **Adjourn**

A New Jersey Nonprofit Corporation

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Item 1. Administration

Item 1.a Introductions

Item 1.b Meeting procedures

Item 1.c Antitrust Compliance Guidelines

Item 1.d Minutes of previous meetings

Attachments

1. Minutes of past meetings (will provide separately)
2. Antitrust Compliance Guidelines



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NERC ANTITRUST COMPLIANCE GUIDELINES

I. GENERAL

It is NERC's policy and practice to obey the antitrust laws and to avoid all conduct that unreasonably restrains competition. This policy requires the avoidance of any conduct that violates, or that might appear to violate, the antitrust laws. Among other things, the antitrust laws forbid any agreement between or among competitors regarding prices, availability of service, product design, terms of sale, division of markets, allocation of customers or any other activity that unreasonably restrains competition.

It is the responsibility of every NERC participant and employee who may in any way affect NERC's compliance with the antitrust laws to carry out this commitment.

Antitrust laws are complex and subject to court interpretation that can vary over time and from one court to another. The purpose of these guidelines is to alert NERC participants and employees to potential antitrust problems and to set forth policies to be followed with respect to activities that may involve antitrust considerations. In some instances, the NERC policy contained in these guidelines is stricter than the applicable antitrust laws. Any NERC participant or employee who is uncertain about the legal ramifications of a particular course of conduct or who has doubts or concerns about whether NERC's antitrust compliance policy is implicated in any situation should consult NERC's General Counsel immediately.

II. PROHIBITED ACTIVITIES

Participants in NERC activities (including those of its committees and subgroups) should refrain from the following when acting in their capacity as participants in NERC activities (e.g., at NERC meetings, conference calls and in informal discussions):

- Discussions involving pricing information, especially margin (profit) and internal cost information and participants' expectations as to their future prices or internal costs.
- Discussions of a participant's marketing strategies.
- Discussions regarding how customers and geographical areas are to be divided among competitors.
- Discussions concerning the exclusion of competitors from markets.
- Discussions concerning boycotting or group refusals to deal with competitors, vendors or suppliers.

Approved by NERC Board of Trustees, June 14, 2002
Technical revisions, May 13, 2005

III. ACTIVITIES THAT ARE PERMITTED

From time to time decisions or actions of NERC (including those of its committees and subgroups) may have a negative impact on particular entities and thus in that sense adversely impact competition. Decisions and actions by NERC (including its committees and subgroups) should only be undertaken for the purpose of promoting and maintaining the reliability and adequacy of the bulk power system. If you do not have a legitimate purpose consistent with this objective for discussing a matter, please refrain from discussing the matter during NERC meetings and in other NERC-related communications.

You should also ensure that NERC procedures, including those set forth in NERC's Certificate of Incorporation and Bylaws are followed in conducting NERC business. Other NERC procedures that may be applicable to a particular NERC activity include the following:

- Reliability Standards Process Manual
- Organization and Procedures Manual for the NERC Standing Committees
- System Operator Certification Program

In addition, all discussions in NERC meetings and other NERC-related communications should be within the scope of the mandate for or assignment to the particular NERC committee or subgroup, as well as within the scope of the published agenda for the meeting.

No decisions should be made nor any actions taken in NERC activities for the purpose of giving an industry participant or group of participants a competitive advantage over other participants. In particular, decisions with respect to setting, revising, or assessing compliance with NERC reliability standards should not be influenced by anti-competitive motivations.

Subject to the foregoing restrictions, participants in NERC activities may discuss:

- Reliability matters relating to the bulk power system, including operation and planning matters such as establishing or revising reliability standards, special operating procedures, operating transfer capabilities, and plans for new facilities.
- Matters relating to the impact of reliability standards for the bulk power system on electricity markets, and the impact of electricity market operations on the reliability of the bulk power system.
- Proposed filings or other communications with state or federal regulatory authorities or other governmental entities.
- Matters relating to the internal governance, management and operation of NERC, such as nominations for vacant committee positions, budgeting and assessments, and employment matters; and procedural matters such as planning and scheduling meetings.

Any other matters that do not clearly fall within these guidelines should be reviewed with NERC's General Counsel before being discussed.

Item 2. Regional Reliability Plan Guideline

Action

1. Review the comments on the draft guideline that the Regional Councils provided
2. Decide on how to revise the guideline
3. Decide on next steps for guideline approval

Attachment

Summary of regional council comments on Regional Reliability Plan Guideline

Regional Reliability Plan Guideline and Task Delegation Principles — Comments

Regional Reliability Plan Guideline

1. **Does the Regional Reliability Plan Guideline provide sufficient detail to enable the Regional Councils to explain their reliability plan?**
 - a. If not, what additional information should be included?

ECAR

The ECAR Operation Panel and Liaison reviewed the ‘Specific Questions for the Regional Councils Regarding the Regional Reliability Plan Guideline’ and the ‘Specific Questions for the Regional Councils Regarding Task Delegation Principles’ that were part of the Joint Meeting Planning Committee and Operation Committee agenda for the September 14, 2005 meeting in Dallas. Unfortunately there was not a lot of consensus among the ECAR Operation Panel members on the questions. Below I’ve listed the consensus comments from the ECAR Operation Panel on the questions that there were consensus comments.

The Regional Reliability Plan Guideline provides too much detail. The Regional Reliability Plan Guideline should provide general guidance on what a plan should include. You don’t want the plan to include details that will require you to resubmit the plan in order to correct most non-compliances. For example – You don’t want the plan to list all of the electrical assets under the jurisdiction of a Reliability Coordinator. A general description would suffice. You don’t want the Reliability Coordinator to have to file a new plan when he adds a transformer to his high voltage transmission system or when a new interconnection is installed between two Balancing Authorities. The Regional Reliability Coordinator Plan should in general describe principles that the Reliability Coordinator performs. Non-compliance to NERC Standards should be determined by review of information performed during an audit not by reading the information listed in the Regional Reliability Plan.

FRCC

The FRCC questions the need for a Regional Reliability Plan. The efforts to develop this plan began prior to the Federal Energy Legislation being passed. The FERC has indicated that reliability standards will apply to all owners, operators and users of the bulk electric system. NERC, as the ERO will require the Regions to identify all the owners, operators and users of the bulk electric system. We believe this identification should be through the ERO compliance program, and required as part of the NERC Regional Entity delegation agreement. We would expect NERC, as the ERO to utilize the definitions of the entities in the Reliability Standards Glossary and the NERC Functional Model. We believe the need for a Regional Reliability Plan now has been greatly diminished.

MAIN

MAIN does not think a MAIN or other Regional Reliability Plan is required. The Reliability Plans should center on the plans of the Reliability Coordinators (RTOs).

Regional Reliability Plan Guideline and Task Delegation Principles — Comments

1a: The Reliability Coordinator Plans should also be coordinated with other adjacent Reliability Coordinators. Existing regions have more than one reliability coordinator and these regions do not need to be redefined so that one reliability coordinator only exists in a region.

NPCC

NPCC is of the opinion that the RRP needs to include Sections both on vegetation management and Cyber Security.

NPCC's recently NERC approved August, 2005 Regional Reliability Plan, includes Sections on both Vegetation Management (Section 9) and Cyber Security (Section 8). Cyber Security contains the following Sub-Sections:

- 8.1 Cyber Security Policy
- 8.2 Critical Cyber Asset
- 8.3 Electronic Security Perimeter
- 8.4 Electronic Access Controls
- 8.5 Physical Security
- 8.6 Information Protection

MRO

Reliability standards should be the base upon which the Regional Plan is developed. The regional plan should identify entities that have responsibilities and obligations. Furthermore, the Regional Plan should ensure that there are no gaps between entities, responsibilities, and obligations. Reliability and Certification Standards should be enforced as applicable.

While there is detail contained within the Regional Reliability Plan Guideline (RRP) there is additional information and explanation required. For example: Section 1 on Reliability Objectives requires the Region have objectives that are consistent with NERC and the Region reliability standards. The MRO is not clear on what type of Objectives would be developed since the Version 0 standards have been adopted. It may be of greater value to have an introduction to the Plan explaining how the Region plans interact with the NERC and Regional reliability standards.

In addition, and on a general level the relationship between the Reliability Standards, Certification Standards, and the Regional Plan should be clarified to ensure that the Regional Entity or other entities within the Region are not being evaluated against differing measurement tools. (e.g., Reliability Standards, Organizational Standards, or combination thereof).

1b: While the document covers many areas there are several that are recommended for review:

- **Communications:** Specific attention should be paid to the communications between regions and RCs that have responsibility across multiple regions
- **Seams issues:** While covered in Section 3.2 and 4 additional attention should be paid to seams issues, potential issues caused by standard interpretations or regional variances that are not aligned to promote reliability.

Regional Reliability Plan Guideline and Task Delegation Principles — Comments

- **Consistency:** Each section of the plan should have the key elements defined to ensure that each regional plan is consistent with other plans. In addition, this approach would assist in consistent plan review processes which will become important moving forward.

SERC

The Regional Reliability Plan Guideline should provide the structure for the Region to explain how its members meet the industry's reliability standards. Those standards include bulk power system planning, operations, and cyber security. There is sufficient detail in these Guidelines for the Region to explain their reliability plan with respect to planning and operating requirements.

However, there is no mention of Critical Infrastructure Protection in these Guidelines. This seems to be a significant omission which should be corrected.

Therefore, SERC members suggest a section on Critical Infrastructure Protection should be added before the Guideline is completed. This CIP section should include details about how the Region and organizations within the Region meet the cyber security standards.

WECC

The detail included in the guideline is sufficient for WECC to explain the Regional Reliability Plan (RRP). The guideline should not be too prescriptive, allowing the region to detail the specifics of the plan.

Regional Reliability Plan Guideline and Task Delegation Principles — Comments

- 2. How should the Regions list the “assets”** under the purview of the Transmission Operator and Balancing Authority? (See Section 3.1.3 and similar sections that follow).

ECAR

A general geographic description would suffice. You don't want a list of every generator, circuit, transformer, breaker, relay, etc in the Regional Reliability Plan. The Region should be able to identify every asset under the purview of a Transmission Operator or Balancing Authority upon request.

FRCC

As part of the registration process for the ERO, the Regions will verify to NERC that their registration is complete. Now that all owners, operators and users of the bulk electric system are to be identified, there will be less of a need to identify particular assets of TOP's or BA's. Certification of those entities will also ensure that relationships and registration is complete. Therefore, we do not believe there is a need for a Regional Reliability Plan with identification of assets as a component.

MAIN

Assets should be categorically defined according to the Standards/functional model designations. Only where asset ownership and responsibility differ from the categorical standard should they be listed, defined and explained to ensure proper entity responsibility and resultant reliability.

NPCC

NPCC agrees that electric system assets should be identified for each entity within the Region that the entity is responsible for and that which will be monitored for compliance in regards to reliability standard requirements.

NPCC is of the opinion, however, that only a general description of assets are required for inclusion in the Regional Reliability Plan. The RRP is the “What” document and also serves as the roadmap for achieving compliance. The “How” should be reserved for the Region's supporting documentation and should provide the detailed information necessary for performing an accurate Overlap and Gap Analysis for compliance measurement.

NPCC also recognizes that while assets need to be identified to insure that there are no gaps or overlaps in responsibility within the Region for operational reliability reasons, NPCC does not believe that it is necessary to identify assets for Planning purposes.

MRO

While there are security issues involved with a detailed list it is important that a list or other method be included in the plan or maintained by the Region. It is further recommended that this list be kept at the breaker and transmission line level. One alternative could be to utilize a series of diagrams or maps that identify which entity has operational and planning responsibility over which assets.

Regional Reliability Plan Guideline and Task Delegation Principles — Comments

It is strongly recommend that the Regional Plan clearly identify those sections that are public and those sections that will be withheld from the public due to security concerns.

SERC

SERC members suggest Section 3.1.3 should be deleted. The requirement to provide a detailed list of facilities is unnecessary and extremely burdensome. Neither NERC nor the Regions have ever had the need for such information and we do not see the need for that information now. The statement is so broad as to require the reporting of every item of electrical equipment, control systems, telemetry and building that an entity owns or operates. Detailed data as may be necessary is provided pursuant to various data collection and modeling standards. No separate list as proposed here in needed. At most the Guideline should specify a general description of the boundaries between facility ownership.

WECC

Assets under the purview of the Transmission Operator and Balancing Authority should be identified using a general description. Individual facilities should not have to be listed, requiring alteration of the document each time there is an addition or change. This listing shouldn't get more prescriptive than listing the voltage range of facilities that are being monitored by the reliability coordinators. In other words, a specific list of assets should not be required in the Regional Reliability Plan. A general matrix of functions and asset descriptions could be used, where appropriate. The important information that needs to be known to all is "What entity holds responsibility?"

Regional Reliability Plan Guideline and Task Delegation Principles — Comments

3. Does Section 3.2, “Reliability Coordinator reliability process,” cover the RC plan sufficiently?

- a. How should the Regional Reliability Plan deal with plans for Reliability Coordinators that span Regions? (e.g., MISO or PJM) Does each Region submit the same information in its plan?

ECAR

There was not consensus of the ECAR Operation Panel on these questions.

FRCC

As part of our re-evaluation of the need for the Regional Reliability Plan, we now believe the only Reliability Plans that should be developed are those of the Reliability Coordinators. Each Region should have a complete Reliability Plan for how its Reliability Coordinator provides for the reliability of the bulk electric system. If there is more than one RC in a region, then the Reliability Plan should describe any differences and the coordination between them. The items in section 3.2 of the draft guideline are a good start at the components of a RC Reliability Plan. The work to ensure that these documents are consistent and complete is what should be the new focus of future work on guidelines.

MAIN

The topical outline looks adequate but content under the topics need to be reviewed to see if they cover each topic adequately. Operational and communications protocols and the identification and current updated list of personnel involved needs to be a part of the reliability process.

3a: If there is one RC per region do not the RCs still have to communicate. Therefore why only one per region? The viability of the Bulk Electric System should allow entities switching regions as well as RCs.

The same categories should be addressed in all regional plans no matter what numbers of RCs exist in a region. The same information must be addressed. How else can you coordinate all facets of operation and planning as well as communications between reliability coordinators?

If we make a rule of one RC per region do we increase the regions or reduce the number of RCs? The plan is dealt with the same whether one or more RCs exist per region.

NPCC

NPCC is of the opinion that Section 3.2 covers the RC role and responsibilities adequately for inclusion in the Regional Reliability Plan. Furthermore, NPCC believes that it is vitally important that the RRP include all aspects of the criteria that deal specifically with operations, coordination and communication between the Reliability Coordinators within the Region’s footprint. If acceptable levels of each are to be achieved on an intra and inter Regional basis, the Regional Reliability Plan must clearly delineate how this is to be accomplished.

3a: NPCC does not support the concept of Reliability Coordinators spanning NERC Regions.

Regional Reliability Plan Guideline and Task Delegation Principles — Comments

3b: Under this scenario, NPCC is of the opinion that each Region must include the same information that clearly delineates how those Regions and neighboring Regions will integrate and coordinate the operational reliability responsibilities for those Regions.

MRO

The Regional Reliability plan should contain the information necessary to ensure reliable operations. This information would include specifics of how the RC operates within the region and across regional boundaries.

Furthermore, this regional plan should include the regional differences. Each RC plan would be included in the Regional Plan. The RC should be permitted to have only one plan provided it does include all regional differences.

SERC

SERC members suggest Section 3.2 adequately covers the RC process but should allow for additional, separate sections for any RC to explain processes that are unique to that RC. Each Region should develop and submit its own Plan, explaining how its members meet the reliability standards. Therefore, each RRP should contain an explanation about how all its RCs meet the reliability standard for that Region.

WECC

Yes

Regional Reliability Plan Guideline and Task Delegation Principles — Comments

4. With respect to sections 2.1 and 3.1, where the Region designates the responsible entities, should NERC or the Region establish a “reliability relevance threshold” that would determine whether a particular organization was of such a size or location that it needed to be registered? For instance, should a utility that only operates, say, a short loop of transmission, be registered as a Transmission Operator even if it does not appear to have a reliability impact? Is a utility that only operates a 34 kV distribution system register as a Distribution Provider, or is that utility, in reality, simply a large customer?

If a threshold is appropriate, what is best approach for developing such threshold criteria:

- a. Part of the Functional Model?
- b. Part of the Regional Reliability Plan Guideline?
- c. Both?
- d. A compliance or certification standard?
- e. Something else?

ECAR

None

FRCC

We do believe that a “reliability relevance threshold” should be established. However, the threshold could be different for different requirements. Therefore, we believe that such a threshold should be established as part of the standard development process.

MAIN

The threshold should be established across NERC as uniformly and as practical as possible. Where variances exist they should be accommodated if reliability is not impaired and they should be justified with an accompanying plan. These variances should then be revisited on a timed, conditional or organizational change basis to see if they still are still reliably applicable. The venue should be determined on a NERC wide basis and be part of the standards development/functional model process.

NPCC

NPCC is of the opinion that NERC should work in concert with the Regions to develop a “reliability relevance threshold” and determine whether there is a requirement for regional diversity.

4a: NPCC is of the opinion that a reliability threshold should be addressed in the Certification Standards and should be based upon the impact to the BPS.

Additional Comments Regarding the Regional Reliability Plan Guideline

Section 2.1 NPCC agrees that the RRP should identify the responsible entities. However, NPCC is of the opinion that it is unclear at this time as to whether there can be more

Regional Reliability Plan Guideline and Task Delegation Principles — Comments

than one Planning Coordinator for a Region. Planning is reserved for those entities e.g. TP, RP, etc. where the actual responsibility for planning is developed.

Section 2.1.1 NPCC agrees that the RRP should include a diagram, as opposed to a list, that relates each TP and RP under the purview of a PC for the Region.

MRO

4a: No

4b: Yes — The region would have the best knowledge to determine “reliability relevance thresholds” for the region. However, any “regional relevance thresholds” should be reviewed by NERC for consistency among regions and include an appeals process.

4c: No

4d: No

4e: No

General Recommendation: New terms should be included in the NERC glossary.

3.13 The identification of the bulk electric assets should be covered through the utilization of a series of diagrams or maps that identify operational and planning responsibilities.

3.1.4.3 Clarify section to include IPPs and limit reporting scope to the specific region and plan.

Review and Approval Process

1. The Region will review its RRP at least annually, and update its plan as needed
 - a. The update will include a summary or list of the changes.
2. The Region will submit its updated plan to NERC for review and approval, as follows:
 - a. No more than five years from the last approval date, or
 - b. Changes in RC or BA footprints, or
 - c. Changes in RC process
 - d. Other changes that have the ability to impact plan

SERC

SERC members suggest that all responsible entities as defined in the standards should be registered and there should be no “reliability relevance threshold”. Any “reliability relevance threshold” should be developed through the reliability standards development process (administered by the SAC) as part of a specific standard and included in that specific standard.

WECC

WECC feels that thresholds are appropriate; and, if required, Interconnections should determine those reliability relevance thresholds specific to the Interconnection. The

Regional Reliability Plan Guideline and Task Delegation Principles — Comments

Interconnection can determine what threshold is appropriate. NERC should not get down to this level of specificity.

Specific comments on the “Regional Reliability Plan Guideline”

Please specify which definition of “redact” is meant in the “Introduction” section of the document.

Components Section 4.2.1 refers to “AFC”. We assume that means “Available Flowgate Capacity”. As the term “AFC” is only applicable to Eastern Interconnection, remove it from this document.

Please amend Components Section 4.1.4 to read “Transmission, including D.C. ties, and generation forced outages”

Review and Approval Process Section 2 should have changes submitted to the reliability region and not to NERC. Also, the only changes that need to be submitted should be “substantive” changes. We are not agreeable to submitting minor changes. Tie point changes should not require that changes be submitted. The phrase “Changes in footprint” needs to be clarified. “BA” should be removed from 2b; only changes in the RC footprint should be submitted in the reliability plan. It is unclear what is meant by “Changes in RC process” in Section 2c.

Planning Committee

1) Additional clarity is needed regarding item 3 under the “Summary” section. Need to further clarify the relationship between the Regional Reliability Plan and the NERC reliability standards.

2) What will the Operating Committee and Planning Committee use as a basis for reviewing and approving the completeness, feasibility, and adequacy of a Regional Reliability Plan?

3) Confusion exists as to the definition and tasks of a Planning Coordinator. It is proposed that more than one Planning Coordinator is possible in an area. Yet the region could still consider itself as a Planning Coordinator. Is it possible to delegate tasks from one Planning Coordinator to another Planning Coordinator? Are the Resource Planners and Transmission Planners both full fledged Planning Coordinators?

4) A section 2.1.2 needs to be added for generator owners that build and/or operate units in more than one region.

5) Bulk electric system assets are just as important for planning as they are for operations. These assets should be identified using a general description under both planning and operations. Sections 3.1.3 and 3.1.4 need to be included and **Attachment A**

2

expanded under the Planning section. A responsible entity should be identified with

Regional Reliability Plan Guideline and Task Delegation Principles — Comments

the assets for which they are responsible. This relationship is not necessarily one to one on the planning side and may not fit the Functional Model. Who owns an asset should not imply their compliance responsibility.

Regional Reliability Plan Guideline and Task Delegation Principles — Comments

6) The coordination of system planning with adjacent regions needs to be added to the list under section 4.2 as a separate item. This item should be additional to items 4.2.1, 4.2.2, and 4.2.3.

7) Consensus was not reached on the concept of a “reliability relevance threshold.” Some are of the opinion that there should be a reliability relevance threshold with the concept recognized in the Functional Model but the details left to the Regional Reliability Plan. Others do not support the reliability relevance threshold as presented. A level playing field is something that should be strongly supported. There is no reason to create relevance thresholds for small generators, small distribution companies, etc. when that approach isn’t applied consistently in other reliability-related issues that are brought forward for consideration.

8) The Planning Committee and Operating Committee may be out of sync regarding the Regional Reliability Plan. As part of the recommendations from the August 2003 blackout, all of the regional planning processes were reviewed and will be reported and commented on in a report to the Planning Committee and the NERC Board of Trustees by year end. Further, the Planning Committee conducts annual long-term and seasonal (summer and winter) assessments to ensure the regional plans meet the NERC standards and the respective regional planning criteria. Need to clarify how these Planning Committee activities relate to the Regional Reliability Plan.

9) Personnel certification may need to consider certifying planners in the future.

10) There is a perceived difference between the Functional Model and the reliability standards. Therefore, there may be different answers to the questions raised in the two proposed documents from the Functional Model or standards perspectives.

Item 3. Delegation Principles

Action

1. Review the comments on the draft guideline that the Regional Councils provided
2. Decide on how to revise the guideline
3. Decide on next steps for guideline approval

Attachment

Summary of regional council comments on Delegation Principles

Regional Reliability Plan Guideline and Task Delegation Principles — Comments

Task Delegation Principles

1. **What is the nature of this document?**
 - a. Part of the Functional Model?
 - b. Part of the Regional Reliability Plan Guideline?
 - c. Both?
 - d. A compliance or certification standard?
 - e. Something else?

ECAR

ECAR Response to Questions 1, 2, 5 and 6 — There was not consensus of the ECAR Operation Panel on these questions.

IESO

The IESO supports the principles enunciated in the document and believes the document must be [a], part of the Functional Model.

Delegation is a fundamental aspect of the Functional Model: given the principle that an entity can be responsible for all or none, i.e. not some, of the tasks of a given Responsible Entity; and given the diversity of practice throughout North America; delegation becomes the sole mechanism available to meet this principle within current organization structures. Inclusion of the delegation principles in the Model is therefore appropriate.

We note, however, that the principles contain a number of prescriptive elements (“must” statements). Under the Electricity Modernization Act of 2003, the ERO will have authority only with respect to standards, i.e. for developing and proposing standards and for their enforcement. As a result, if compliance with the prescriptive elements of these principles is to be assured, as it surely should be, then these elements of the principles must be incorporated in a standard.

Thus while it is appropriate for the principles to be part of the Functional Model, it is essential that the prescriptive elements of these principles also be part of the certification standards.

MAIN

The task delegation principles are difficult to assess and categorize. The standards will dictate the responsibilities of the functional entities. The entities will need to be certified that they can perform their designated functions and, if they choose, to delegate a portion of their functions to an entity that will also be required to be performance certified.

Regional Reliability Plan Guideline and Task Delegation Principles — Comments

Task delegation and contractual relationships with other functional entities and subordinate entities (as far as responsibility is concerned) cannot be adequately assessed until they are field tested and appropriate adjustments are made.

As far as functional entities are concerned they should be responsible for all entity tasks even the delegated tasks they contract for with subordinate entities. Ownership implies ultimate responsibility.

NPCC

NPCC is of the opinion that Task Delegation should be included in the Functional Model, the Regional reliability Plan and also be addressed in the compliance or certification standards as well.

MRO

1a: No

1b: Yes

1c: No

1d: No

1e: No – It is important to have requirements and obligations centrally located. Otherwise, the potential for conflicting requirements increases.

SERC

SERC members believe delegation of Functional Model tasks should be determined by the responsible entities and documented by the Regional Council. Therefore, this Delegation Principles document should be part of the Regional Reliability Plan Guideline.

WECC

1b: This document should be part of the functional model. The document should be referenced in the reliability plan, so interested parties know to go to the functional model to look at it. More standards should not be necessary as a result of delegation of tasks. Delegation should not require a separate certification process from the current process being developed.

Regional Reliability Plan Guideline and Task Delegation Principles — Comments

2. How are these principles promulgated?

- a. If they are attached to the Functional Model, then the standing committees and board would approve them.
- b. If they are a standard, then NERC's standards development process will take care of this.
- c. Some other way?

IESO

As noted, the principles should be attached to the Functional Model, especially as an interim measure, in which case there would be approval by the standing committees and the board (i.e. option [a]).

Consistent with the response to question 1, prescriptive aspects of the principles would also proceed through NERC's standard development process (i.e. option [b]).

NPCC

NPCC is of the opinion that the Task Delegation Principles are best addressed in the NERC Reliability Functional Model where the NERC Standing Committees and Board would approve them.

MRO

2b: They should be NERC standards with the Regions having the ability to define higher requirements. These Regional differences (only applicable within region and not impacting adjacent regions) would then go the NERC BOT for approval without going through the NERC standards process.

2c: No

SERC

SERC members suggest development of these Delegation Principles should be processed through the NERC standards development program so the entire industry may review and comment on them.

WECC

2c: The principles should be referred to in the Regional Reliability Plan Guideline and promulgated through the Interconnection compliance process.

Regional Reliability Plan Guideline and Task Delegation Principles — Comments

3. This document does not specify acceptable delegation levels. **Who ultimately decides the degree to which tasks can be delegated?**
 - a. The Regional Councils?
 - i. If so, must there be consistency among the Regions?
 - b. The standing committees?
 - c. The certification program?
 - d. The board?

ECAR

NERC should be flexible on task delegation. What is important is that tasks get implemented, not who does the implementation. If a task is delegated, both the entity doing the delegation and the entity accepting the delegation need to agree on who is responsible for implementing the task.

NPCC

NPCC is of the opinion that the Regional Councils should be responsible for deciding the degree to which Tasks can be delegated with the approval of both the NERC Standing Committees and NERC board.

3a: NPCC believes that there should be consistency among the regions which meet with the approval of both the NERC Standing Committees and NERC board.

MRO

3a, b, c: No

3d: Yes through the Standards process. They should be NERC standards with the Regions having the ability to define higher requirements. These Regional differences (only applicable within region and not impacting adjacent regions) would then go the NERC BOT for approval without going through the NERC standards process.

SERC

SERC members believe the individual entities responsible for specific tasks should decide the degree to which those tasks are delegated. The delegation of tasks are the result of complex contract negotiations, should remain the sole responsibility of facility owners and the delegation chain of those tasks should be clearly identifiable for operations, audit and post-event analysis.

Therefore the response to each question above is “no”.

In addition, the responsible entities should delegate tasks consistent with the delegation required by that entity’s regulator requirements.

The Regional Councils should document the task delegation of its members and review that delegation for gaps and/or overlaps.

Regional Reliability Plan Guideline and Task Delegation Principles — Comments

Finally, under no circumstances should the Delegation Principles, or the Regional Reliability Plan Guidelines, imply or be used to dictate any particular organizational structure for an owner, operator or user of the bulk electric system or for a regional reliability organization. To that end, the Delegation Principles Document must retain a high-level approach in defining the principles.

WECC

We do not agree with any of the given selections. The individual Interconnections should decide the degree to which tasks can be delegated in that Interconnection. There does not need to be consistency among the Interconnections.

Regional Reliability Plan Guideline and Task Delegation Principles — Comments

4. Regarding delegation levels,
 - a. Could an organization delegate all of its tasks to other organizations?
 - b. Should some tasks never be delegated?

ECAR

NERC should be flexible on task delegation. What is important is that tasks get implemented, not who does the implementation. If a task is delegated, both the entity doing the delegation and the entity accepting the delegation need to agree on who is responsible for implementing the task.

IESO

The IESO position is "b" and "d", but with input from the Regional Reliability Councils (RRCs).

It seems plausible that the degree of acceptable delegation will vary among Regions. Therefore, given that the principles are to be included in the Functional Model, it would be appropriate for the RRCs to make an initial determination, and provide this as input to a subsequent approval by the standing committees and the board.

As noted, the principles must also be included in a standard, where in effect it is the Registered Ballot Body that decides. Differing circumstances among Regions may warrant regional differences. Individuals involved in the certification program would properly provide input to the drafting of the standard with respect to acceptable delegation levels.

4a: With respect to question 4 (a), the IESO position is that organizations under normal circumstances should not be able to delegate 100% of their tasks, especially for Responsible Entities having a high level of authority, such as the Reliability Coordinator.

With respect to question 4 (b), the IESO position is that certain tasks should be designated “core tasks” and should not be delegated. Using the Reliability Coordinator as an example, the responsibility for the tasks associated with inter-regional reserve sharing, restoration and coordination should not be delegated.

NPCC

4a: NPCC believes that, under normal circumstances, functional entities should not be able to delegate 100% of their tasks. Using the RC function as an example, NPCC questions the extent to which an organization can be held responsible for the wide area view and intra and inter regional coordination if all of those tasks have been delegated to multiple entities.

4b: NPCC is of the opinion that certain tasks identified with the function should be considered to be “core” tasks and should not be delegated to multiple entities. Using the RC function as an example, the responsibility for the tasks associated with inter-regional reserve sharing, restoration and coordination should not be delegated to multiple entities.

Regional Reliability Plan Guideline and Task Delegation Principles — Comments

MRO

4a: No

4b: No

SERC

SERC members believe a responsible entity, or organization, should be able to delegate all of the tasks to another organization. We are unaware of any tasks that should never be delegated.

WECC

4a: While tasks other than emergency operations could be delegated, the best practice would be to not delegate.

4b: Emergency operations should never be delegated.

Regional Reliability Plan Guideline and Task Delegation Principles — Comments

NOTE: Personnel certification is subject to certification industry standards that may well decide these two issues.

5. If tasks are delegated to another organization, **under what circumstances would the personnel performing those tasks at the *delegated* organization need to be NERC-certified?**

IESO

We support the statement in section 2.3 .2 of the attached principles to the effect:

"Delegated organization. *The delegated organization must have NERC-certified personnel to perform those tasks for which the delegating organization required NERC-certified personnel."*

This ensures that the personnel performing tasks requiring certification is so certified, whether or not the tasks are delegated.

We note that the certification standard for a particular Responsible Entity can be expected to specify matters such as whether the performance of any tasks requires full certification. Therefore it is quite possible that the personnel of both the delegating and delegated organizations will be required to be certified.

Additional Comments

1. The IESO is of the opinion that a Delegation Agreement should only be required when an existing operational agreement or supporting documents between the entities does not specifically or adequately address the task being delegated.
2. IESO agrees that a task can be delegated by a Responsible Entity, but that the ultimate responsibility must remain with the delegating entity.
3. NERC has permitted more than one entity to register as a functional entity within the same geographic area and with respect to the same bulk power assets. We note that this appears to be inconsistent with the principle of single responsibility for all tasks of a function. Should this proceed, then at a minimum there is a need for a thorough review at the regional levels to ensure that:
 - Gaps do not exist where more than one entity has assumed responsibility for requirements identified in Reliability Standards that apply to that responsible entity; and
 - Overlaps of accountability for the same requirements do not exist.
4. It should be noted that there is a form of delegation in place today in jurisdictions, such as Ontario, in which regional reliability councils (RRCs) enforce reliability standards by holding the Control Area operator or Reliability Coordinator responsible all violations, including cases where the violation was caused by an entity other than the CA/RC. However, any subsequent enforcement actions against such other entity that caused the violation is addressed by the CA/RC or other authority, not the RRC. That is,

Regional Reliability Plan Guideline and Task Delegation Principles — Comments

the RRC may be considered to have delegated such secondary enforcement to the CA/RC. The IESO continues to advocate this model for Ontario under the ERO regime, and believes it has widespread potential to facilitate enforcement in other jurisdictions.

MAIN

There should be no difference in NERC-certification requirements. The task dictates the certification requirement.

NPCC

NPCC is of the opinion that the personnel performing the delegated real-time operating tasks will be required to meet all of the requirements of the NERC Reliability and Certification Standards that apply.

Additional Comments Regarding the Task Delegation Principles

NPCC is of the opinion that a Delegation Agreement should only be required when an existing operational agreement or supporting documents between the entities does not specifically or adequately address the task being delegated.

NPCC is in agreement with NERC that a task can be delegated to ensure compliance, but the ultimate responsibility must remain with the delegating Authority.

NPCC recognizes that in certain cases NERC permits more than one entity to register as a functional entity within the same geographic area. Therefore, a thorough assessment should be required at all regional levels to ensure that:

- Gaps do not exist where an entity has not assumed responsibility for a requirement identified in Reliability Standards
- Overlaps of responsibilities for the same requirements do not exist.

NPCC is also of the opinion that, upon conclusion of such assessments, the responsibility for compliance rests with the Reliability Coordinator in whose footprint the other entities reside.

MRO

Must meet the same requirements.

SERC

SERC members believe the personnel performing those tasks at the delegated organization should be NERC-certified for those tasks that require certification, but not certified for the complete function. When a registered organization is certified by the Region/NERC, the delegation arrangements will have to be known and should be part of the certification process.

Regional Reliability Plan Guideline and Task Delegation Principles — Comments

WECC

Certification would be preferable in all cases. However, development of information should not require certification, but authority to act on that information should require certification.

Regional Reliability Plan Guideline and Task Delegation Principles — Comments

- 6. If tasks are delegated to another organization, under what circumstances would the personnel who no longer perform those tasks at the *delegating* organization need to be NERC-certified?**

MAIN

The response to this question needs more specificity as to the circumstances involved. No categorical answer will apply to all circumstances. The certification process should help address such questions.

MRO

Delegating organizations do not need to maintain or be required to be NERC–certified as long as that doesn’t create an unacceptable risk that the other organization performing the tasks could walk away from those tasks and leave nobody certified to take over those tasks. The agreement delegating the tasks to another organization must contain a clause requiring suitable advance notice of termination so that the responsible (registered) organization can be certified or find another organization to take over the tasks.

SERC

SERC members believe there is no justification for requiring an entity that has delegated a task to maintain personnel certified for this task. In fact, the delegation may have been done explicitly because an entity does not have or wish to maintain such expertise. The entity maintains the standards compliance responsibility but relies on the delegated entity to perform the tasks and meet all requirements. This is the normal relationship in any business, for example between a building owner and a contractor, or between a contractor and a subcontractor.

WECC

As long as delegation of tasks does not include delegation of responsibility, we find no examples where the delegating organization would not need to be NERC-certified.

Specific Comments on the “Delegation Principles” Document

If a delegation agreement requires a signed agreement between the involved parties and not just a procedure between the parties when a task is delegated; the agreements will take a long time to put into place. The planned implementation of task delegation should allow sufficient time to implement the required agreements.

Planning Committee

In the Introduction of the Delegation Principles document, the first paragraph fails to recognize the fact that about 30% of the reliability standards apply to regional reliability organizations. The planning-based standards are not all directed away from the regional council organizations to other entities. NERC holds the regions as the responsible entities for a significant number of requirements in the reliability standards. The Introduction of the Delegation Principles document needs to address and describe this facet of the standards and responsible entities.

Regional Reliability Plan Guideline and Task Delegation Principles — Comments

Under section 2.2.1, the delegating organization should only be certified by NERC if it is performing NERC certifiable tasks, similar to 2.3.1. No consensus was achieved on 2.2.2. It was suggested that 2.2.2 should be similar to 2.3.2. Others suggest that 2.2.2 is acceptable as presented.

Perhaps the Delegation Principles should be added to the updated Functional Model document under development.

Item 4. Proposed Regional Reliability Organization Function

Action

Discuss adding this new function to the Model.

Attachment

"Regional Reliability Assurance" Function

Background

Stan Kopman drafted a new Regional Reliability Assurance function, which the FMWG has not had an opportunity to discuss. At this meeting, we need to discuss the merits of adding this function.

Some issues to consider:

1. Is this a function or an organization?
2. What is the difference between the RRO and the compliance monitor?
3. What will the RRO's look like under the new ERO structure?
4. Will some of the RRO tasks be handled through agreements with the ERO instead of in standards?

Adding the RRO as a function may have a number of merits that we've overlooked before, but we need to be able to explain them if we propose this new function.

Function



Function – Regional Reliability Assurance

Definition

Regional evaluation of sub-Regional and other identified entities using certification; readiness assessment; compliance monitoring and assessment and dispute resolution to secure the reliability of the bulk electric system within the Regional boundary.

Tasks

1. Coordinate reliability assurance activities within the Region.
2. Coordinate reliability assurance among adjacent Regions and with NERC through the development of necessary protocols and processes.
3. Develop and maintain Regionally-specific Reliability Criteria/Standards assuring they are consistent with NERC Reliability Standards.
4. Develop and maintain more stringent Regionally-specific Reliability Criteria/Standards.
5. Coordinate the development of more stringent Regionally-specific Reliability Criteria/Standards with adjacent Regions.
6. Certify Balancing Authorities and Transmission Operators to the pertinent NERC Reliability Standards and/or Regional Reliability Criteria/Standards.
7. Participate in the certification of Reliability Coordinators within the Region.
8. Perform Readiness Assessments of Regionally identified entities that have impact on reliability of bulk electric system within the Region.
9. Participate in Readiness Assessments of Reliability Coordinators, Balancing Authorities and Transmission Operators.
10. Monitor and assess compliance of sub-Regional entities as per Regional Compliance Program.
11. Assess sub-Regional Compliance Programs to assure that all necessary entities are meeting NERC Reliability Standards and Regional Reliability Criteria/Standards
12. Submit Regional compliance data as per the NERC Compliance Program.
13. Develop Regional dispute resolution process.



Responsible Entity – Regional Reliability Organization

Relationships with other Responsible Entities

1. Interact with sub-Regional entities to coordinate reliability assurance activities.
2. Implement inter-Regional and NERC protocols and process to assure the reliability of the bulk electric system within the Region and adjacent Regions.
3. Engage sub-Regional and adjacent Regional entities in the development and maintenance of Regionally-specific Reliability Criteria/Standards.
4. Work jointly with NERC in the certification of Regional Reliability Coordinators.
5. Work with Balancing Authorities and Transmission Operators to certify each of these entities.
6. Work jointly with NERC in the Readiness Assessment of Reliability Coordinators, Balancing Authorities and Transmission Operators
7. Work jointly with NERC in the Readiness Assessment with entities who have been delegated reliability activities by responsible entities.
8. Implement Regional Compliance Program of sub—Regional entities.
9. Work with NERC in the implementation of NERC Compliance Program.
10. Implement Regional dispute resolution process among parties within Region.

Deleted: Balancing Authorities, Transmission Operators and Reliability Coordinators

Deleted: . of identified entities that have an impact on the reliability of the bulk electric system

Item 5. Functional Model — Version 3

Action

Review Version 3 and decide on next steps.

Attachment

"Functional Model," Version 2 → 3 markup from Functional Model-Reliability Standards Coordination Task Force, FMWG April meeting, and public comments on Version 2

Background

This is a third draft of Version 3 that includes the changes the working group has been discussing for several months. It incorporates the changes from the Interchange Subcommittee and the Interchange Authority Implementation Task Force, and the changes to the reliability coordinator and transmission operator that the group has been discussing.

The draft is well annotated, and the working group will need to review the document carefully to make sure it includes the changes we want to make.

Specific Issues to Discuss and Agree Upon

1. New Foreword to Version 3
 - a. List of "significant changes"
 - b. Concept of Functional Model as a "guide" in last two paragraphs
2. Marked changes in the Model.
3. Completely revised Planning Coordinator, Transmission Planning Function, and Resource Planning Function
4. Consider adding Regional Reliability Organization function (Agenda item 4)

NERC Reliability Functional Model

Function Definitions and Responsible Entities

Version 3, Draft 3 (markup)

Approved by Standing Committees:
Approved by Board of Trustees:

*Prepared by the
Functional Model Working Group*

Global Changes

1. Planning Authority →
Planning Coordinator

Other changes

1. New Foreword section
2. IA revisions from IAITF and IS.
3. Revised Planning
Coordinator, Transmission
Planner, and Resource
Planner sections

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Foreword

This document replaces Version 2 of the NERC Functional Model that the Board of Trustees approved on February 10, 2004.

Comment [DMB1]: New foreword section.

Foreword to Version 3

Version 3 is a relatively minor update to the Function Model that addresses a number of issues that arose while implementing the new reliability standards. The basic structure of the Model is unchanged, though we have moved a few of the tasks from one function to another as we learn from implementing the new standards.

Significant changes to Version 3 include:

1. Changes to the Transmission Operations tasks and Transmission Operator relationships to provide more details and align better with the Reliability Authority.
2. Changes to the Interchange Authority to accommodate the current practice of Balancing Authority-to-Balancing Authority interchange scheduling.
3. Renaming the Planning Authority to the Planning Coordinator, which is a better description for that responsible entity, and revising the Transmission Planner and Resource Planner responsible entities.
4. Adding explanations of “delegation” and “authority” concepts.
5. Adding introductions to the Reliability Authority, Transmission Operator, and Planning Coordinator functions.
6. Adding responsibilities to certain responsible entities to match up with the same responsibilities in other responsible entities. For example:

Reliability Authority	Transmission Operator
10. Provides reliability analyses to Transmission Operators,...	9. Receives reliability analyses from the Reliability Authority

Aside from these specific changes, the relationship between the Functional Model and the reliability standards is also changing. The Model does not align exactly with NERC's new reliability standards. That's not surprising because those standards were mostly translations from the former Operating Policies and Planning Standards that were not written around the Model to begin with. In many cases, NERC simply removed the term “control area” and replaced it with the responsible entity that performed the tasks required in the new standard.

We expect the Model and the standards to converge as NERC revises its standards and creates new ones. The Model will continue to provide the

framework for the reliability standards, and help guide standards drafting teams and other groups who review and request updates to the NERC standards.

Comment [DMB2]: Concept of the Model as a "guide" for standards.

Foreword to Earlier Versions

Historically, Control Areas were established by vertically integrated utilities to operate their individual power systems in a secure and reliable manner and provide for their customers' electricity needs. The traditional Control Area operator balances its load with its generation, implements interchange schedules with other Control Areas, and ensures transmission reliability.

As utilities began to provide transmission service to other entities, the Control Area also began to perform the function of Transmission Service Provider through tariffs or other arrangements. NERC's Operating Policies and Standards have reflected this traditional electric utility industry structure, and ascribed virtually every reliability function to the Control Area.

Beginning in the early 1990s with the advent of open transmission access and restructuring of the electric utility industry to facilitate the operation of wholesale power markets, the functions performed by Control Areas began to change to reflect the newly emerging industry structure. These changes occurred because:

1. Some utilities were separating their transmission from their Merchant Functions (functional unbundling), and even selling off their generation,
2. Some states and provinces were instituting "customer choice" options for selecting energy providers, and
3. The developing power markets were requiring wide-area transmission reliability assessment and dispatch solutions, which were beyond the capability of many Control Areas to perform.

As a result, the current NERC Operating Policies, which are centered on Control Area operations, were beginning to lose their focus, and become more difficult to apply and enforce.

The Control Area Criteria Task Force. The NERC Operating Committee formed the Control Area Criteria Task Force in 1999 to address this problem. The Task Force began by listing all the tasks required for maintaining electric system reliability and then organizing these tasks into basic groups that it called "functions." The Task Force then attempted to assign these functions to the basic "reliability organizations" such as Control Areas or Regional Transmission Organizations. But that didn't work because the Control Areas themselves were unbundling some of the functions they traditionally performed, and the emerging RTOs and ISOs, while following structures as defined in Order 2000, were not alike.

Realizing that there was no longer a "standard" reliability organization, the Task Force decided to build a "Functional Model" consisting of the functions that ensure reliability and meet the needs of the marketplace. Then, organizations—whether they be traditional, vertically-integrated control areas, regional transmission organizations, independent system operators, independent

transmission companies or so on—can “roll up” those functions they perform, and register with NERC as one or more of the following: Generator Owners, Generator Operators, Transmission Service Providers, Transmission Owners, Transmission Operators, Distribution Providers, Load Serving Entities, Purchasing-Selling Entities, Reliability Authorities, Planning Authorities, Balancing Authorities, Interchange Authorities, Transmission Planners, Resource Planners, Standards Developers, and the Compliance Monitors. This enables NERC to rewrite its reliability standards in terms of these entities who perform the reliability functions.

*Excerpted and revised from Version 1 of the NERC Functional Model
June 12, 2001*

Introduction

The NERC Functional Model defines the set of functions that must be performed to ensure the reliability of the bulk electric system. It also explains the relationship between and among the entities responsible for performing the tasks within each function. The Model provides the foundation and framework upon which NERC develops and maintains its Reliability Standards. NERC's Reliability Standards establish the requirements of the responsible entities that perform the functions defined in this Model.

While the Model is not a standard, and does not have compliance requirements, the Reliability Standards must respect the definitions and interrelationships contained in the Model. Doing otherwise could result in Reliability Standards that conflict with one another.

The Model does not prescribe any particular organization or market structure. Organizations may perform one or more functions as they see fit, but must recognize that some functions require the organization and its personnel to be certified to perform that function. Organizations must also recognize that, as responsible entities, they are responsible for ensuring that all tasks within each function are performed. While organizations may agree to split the tasks of a particular function (for example, an RTO may perform some Transmission Operator tasks with their members performing the remainder), NERC will require that one of the organizations be the "responsible entity," ensuring that all of the tasks of the function are performed.

Functional Model maintenance. The Functional Model is maintained by the NERC standing committees and Board of Trustees. The section titled, "Functional Model Approval Procedure," in this document explains the procedures for reviewing and revising the Model.

Technical discussions. The companion document, "Functional Model – Technical Discussions," provides additional details on the functions themselves, how organizations can "roll up" those functions they wish to perform, and how organizations as "responsible entities" interrelate.

Functional Model Diagram

Function Name	Responsible Entity
Operating Reliability Function	Reliability Authority
Planning Reliability Function	Planning Coordinator
Balancing Function	Balancing Authority
Interchange Function	Interchange Authority
Transmission Service Function	Transmission Service Provider
Transmission Ownership Function	Transmission Owner
Transmission Operations Function	Transmission Operator
Transmission Planning Function	Transmission Planner
Resource Planning Function	Resource Planner
Distribution Function	Distribution Provider
Generator Ownership Function	Generator Owner
Generator Operations Function	Generator Operator
Load-serving Function	Load-serving Entity
Purchasing-Selling Function	Purchasing-Selling Entity
Market Operations Function	Market Operator (or Resource Dispatcher)
Standards Development Function	Standards Developer
Compliance Monitoring Function	Compliance Monitor

Terms used in the Functional Model

Areas

Reliability Authority Area. The collection of generation, transmission, and loads within the boundaries of the Reliability Authority. Its boundary coincides with one or more Balancing Authority Areas.

Transmission Operator Area. The collection of transmission assets under the purview of the Transmission Operator.

Balancing Authority Area. The collection of generation, transmission, and loads within the metered boundaries of the Balancing Authority. The Balancing Authority maintains load-resource balance within this area.

Transmission Planning Area. That area under the purview of the Transmission Planner.

Planning Coordinator Area. That area under the purview of the Planning Coordinator. It will include one or more Transmission Planning Areas.

General

Task. One of the elements that make up a Function in the Functional Model.

Responsible Entity. The label that NERC applies to an organization that is responsible for carrying out the tasks within a Function.

Function. A group of tasks that can not be logically subdivided into other groups.

Authority. The highest level of responsible entity for a particular function. The Reliability Authority is the highest level of all responsible entities.

Transaction. An agreement arranged by a Purchasing-Selling Entity to transfer energy from a seller to a buyer.

Transmission Arrangements. An agreement between a Transmission Service Provider and Transmission Customer (Purchasing-Selling Entity, Generator Owner, Load-Serving Entity) for transmission services.

Customer. A Purchasing-Selling Entity, Generator Owner, Load-Serving Entity, or End-user.

End-use Customer. The customer served by a Load-Serving Entity.

Purpose of the Functional Model

The purpose of the NERC Reliability Functional Model is to:

1. Functionalize the tasks being performed today for electric system reliability so that reliability organizations such as Control Areas, Regional Transmission Organizations, Independent System Operators and others can more easily and clearly identify the reliability functions they provide. A specific organization may provide one or more of the functions identified in the Functional Model.
2. Define in general terms each function and the relationships between the entities who are responsible for performing the tasks within the functions. The framework for developing the function definitions is:
 - a. The responsibility for performing a function should not be split by organizations
 - b. The functions are independent of the organization structure performing the function, and
 - c. The function definitions provide flexibility to accommodate the range of presently conceivable organization structures.
3. Provide a framework for Reliability Standards (including organization certification criteria) and compliance measures developed through the NERC Standards Development Process that will apply to certain tasks defined in the Functional Model.
 - a. It is not expected that standards will be developed for each task since the Functional Model is developed in more detail than is needed for reliability standards. However, standards may contain more detail than the associated activity in the Functional Model.
 - b. Responsibility for compliance with a standard will apply to the organizations performing that function.
 - c. Other organizations developing standards may use the NERC Functional Model in the same manner.
4. Provide linkages between business practices developed by other organizations showing how certain practices may relate to the reliability functions in the Functional Model.

Guiding Principles of the Functional Model

For further details, refer to “Functions, Tasks, Responsible Entities, and Organizations” in the Technical Discussions document.

As explained in the “Purpose of the Functional Model,” the Functional Model provides the framework on which the NERC reliability standards are based. To ensure that this framework remains viable, the Model itself is governed by a set of “guiding principles” that define a *function*, and establish the relationship between the *responsible entities* who are responsible for performing the *tasks* listed in the Model, and the NERC *reliability standards*. NERC must work within these guiding principles when revising or interpreting the Functional Model to maintain the integrity of the Model and NERC’s Reliability Standards.

1. The Functional Model defines the *functions* that must be performed and does not imply organization structure or hierarchy.
 - a. Functions comprise *tasks*.
 - b. Tasks are *what* must be done, not *how*.
2. An *organization* who registers with NERC as performing a function is considered a *responsible entity* and must ensure that all tasks are performed.
 - a. Reliability standards are those requirements that must be performed by *responsible entities*. Thus, we say that the Functional Model is the framework on which the reliability standards are based.
 - b. An organization may delegate a task to another organization, but may not delegate its responsibility for ensuring that the task is accomplished.
3. Organizations that perform certain functions must be certified as being capable of performing those functions. Organization certification requirements are a category of NERC standards
4. Some tasks in the Functional Model may not result in a reliability standard.



Function – Operating Reliability

Definition

Ensures the real-time operating reliability of the interconnected bulk electric transmission systems within a Reliability Authority Area.

Tasks

1. Monitor all reliability-related parameters within the Reliability Authority Area, including generation dispatch and transmission maintenance plans
2. Direct revisions to transmission maintenance plans as required and as permitted by agreements
3. Direct revisions to generation maintenance plans as required and as permitted by agreements
4. Develop Interconnection Reliability Operating Limits (to protect from instability and cascading outages) and ensure that the Interconnection operates within those limits.
5. Perform reliability analysis (actual and contingency) for the Reliability Authority Area
6. Approve or deny bilateral schedules from the reliability perspective
7. Assist in determining Interconnected Operations Services requirements for balancing generation and load, and transmission reliability (e.g., reactive requirements, location of operating reserves).
8. Identify, communicate, and direct actions to relieve reliability threats and limit violations in the Reliability Authority Area
9. Direct implementation of emergency procedures
10. Direct and coordinate System Restoration

Comment [DMB3]: The Reliability Authority doesn't have "enforcement" abilities.

Deleted: <#>Enforce operational reliability requirements

Deleted: <#>{

Comment [DMB4]: The Reliability Authority must be able to revise generator maintenance plans, not simply request changes.

Deleted: Request

Comment [DMB5]: Critical role of the Reliability Authority.



Responsible Entity – Reliability Authority

Comment [DMB6]: New section

Introduction to the Reliability Authority

The Reliability Authority is responsible for the real-time operating reliability of its Reliability Authority area. Its responsibilities include both transmission and balancing operations, and it has the authority to direct other responsible entities to take certain actions to ensure that its Reliability Authority area operates reliably.

For further details, refer to the Transmission Operator.

Transmission operations. With respect to transmission operations, the Reliability Authority and Transmission Operator have similar roles, but different scopes. For example, both the Reliability Authority and Transmission Operator are directly responsible for their own transmission system. However, the Reliability Authority is also responsible, in concert with the other Reliability Authorities, for the Interconnection as a whole. Thus, the Reliability Authority must have a “wide area” view and knowledge of what is happening outside its own boundaries and be capable of calculating and operating within Interconnection Reliability Operating Limits. The Transmission Operator may or may not have this wide view, but the Reliability Authority must.

Balancing operations. The Reliability Authority is also responsible for ensuring that the generation-demand balance is maintained within its Reliability Authority area, which, in turn, ensures that the Interconnection frequency remains within acceptable limits. The Reliability Authority can direct the Balancing Authorities within the Reliability Authority area to take whatever action is necessary to ensure that this balance is maintained.

Relationships with other Responsible Entities

Ahead of Time

1. Receives facility and operational data from Generator Operators, Load-Serving Entities, Transmission Owners, Generator Owners, Transmission Operators, Distribution Providers.
2. Calculates Interconnection Reliability Operating Limits based on Transmission Owners’ and Generator Owners’ specified equipment ratings.
3. **Help transmission Operators calculate and coordinate System Operating Limits.**
4. Receives generation dispatch from Balancing Authorities and issues dispatch adjustments to Balancing Authorities to mitigate congestion within the Reliability Authority Area (if not resolved through market mechanisms).
5. Receives Interchange Transactions from Interchange Authorities for reliability analysis.
6. Provides Interchange Transaction approvals to Interchange Authorities based on reliability analysis.

Comment [DMB7]: The Reliability Authority should have a role in calculating SOLs.

7. Receives generation operation plans and commitments from Balancing Authorities for reliability analysis of Reliability Authority Area.
8. Receives transmission and generator maintenance plans from Transmission Operators and Generator Operators, respectively, for reliability analysis of Reliability Authority Area.
9. Direct Generator Operators and Transmission Operators to revise transmission maintenance plans as required and as permitted by agreements.
10. Provides reliability analyses to Transmission Operators, Generator Operators, Transmission Service Providers, and Balancing Authorities in its Area as well as other Reliability Authorities.

Comment [DMB8]: Refer to change in Task 4 that refers to generator maintenance plans.

Real Time

11. Receives real-time operational information from Balancing Authority and Transmission Operator for monitoring.
12. Issues reliability alerts to Generator Operators, Load-Serving Entities, Transmission Operators, Transmission Service Providers, Balancing Authorities, Interchange Authorities, Planning Authorities, Regional Councils, and NERC.
13. Issues corrective actions (e.g., curtailments or load shedding) to Transmission Operators, Transmission Service Providers, Balancing Authorities, and Interchange Authorities.
14. Coordinates reliability processes and actions with and among other Reliability Authorities.
15. Coordinates with Transmission Planners, Planning Coordinator, and Transmission Service Providers on transmission system limitations.
16. Coordinates with Planning Authorities on reliability issues, as appropriate.

Comment [DMB9]: Replaced by intro above.

Deleted: *Special Considerations*

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 The Reliability Authority's purview must be broad enough to enable it to calculate Interconnection Reliability Operating Limits, which may be based on the operating parameters of other transmission systems beyond the Transmission Operator's vision. The Transmission Operator is responsible for the reliability of its "local" transmission system, and may not be aware that its system is violating an Interconnection Reliability Operating Limit. Therefore, the Reliability Authority may direct the Transmission Operators or Balancing Authorities to take action to mitigate Interconnection Reliability Operating Limits.



Function – Planning Reliability

Definition

Ensures a plan (generally one year and beyond) is available for adequate resources and transmission within an Interconnected Planning Coordinator Area. It integrates and assesses the plans from the Transmission Planners and Resource Planners within the Interconnected Planning Coordinator Area to ensure those plans meet the reliability standards, and develops corrective actions for plans that do not meet those standards.

Comment [DMB10]: Changed this in the PR, RP, and RP functions.

Deleted: long-term

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Tasks

1. Develop and maintain transmission and resource (demand and capacity) system models to evaluate transmission system performance and resource adequacy.
2. Maintain and develop methodologies and tools for the analysis and simulation of the transmission systems in the assessment and development of transmission expansion plans and the analysis and development of resource adequacy plans.
3. Define information required for planning purposes, consolidate and collect or develop such information, including:
 - a. transmission facility characteristics and ratings,
 - b. demand and energy forecasts, capacity resources, and demand response programs. In addition this information may be need to be further developed.
 - c. generator unit performance characteristics and capabilities, and
 - d. long-term capacity purchases and sales.
4. Assess, develop, document and report on resource and transmission expansion plans for the Interconnected Planning Coordinator Area.
 - a. Integrate the respective plans and verify that the integrated plan meets reliability standards,
 - b. Identify and report on potential transmission system and resource adequacy deficiencies, and provide alternate plans that mitigate these deficiencies.
5. Evaluate responses and plans for long-term (generally one year and beyond) customer requests for transmission service.
6. Review transmission facility plans required to integrate new (end-use customer, generation, and transmission) facilities into the interconnected bulk electric systems.
7. Review and determine TTC¹, IROL and SOL values (generally one year and beyond) as appropriate.

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Deleted: <#>Evaluate responses to long-term (generally one year and beyond) transmission service requests.¶

¹ TTC is the total transfer capability and refers to the amount of electric power that can be moved or transferred reliably from one area to another area of the interconnected

8. Monitor and evaluate transmission expansion plan and resource plan implementation including in-service dates and impact on resource and transmission adequacy.

9. Coordinate projects requiring transmission outages that can impact reliability and firm transactions.

10. Coordinate with adjoining Interconnected Planning Coordinators so that system models and resource and transmission expansion plans take into account modifications made to networks in adjacent Interconnected Planning Coordinator Areas.

Deleted: <#>Assess, develop, and document resource and transmission expansion plans.¶
a. Integrate and verify that the respective plans for the Planning Authority Area meet reliability standards.¶
b. Identify and report on potential transmission system and resource adequacy deficiencies, and provide alternate plans that mitigate these deficiencies.¶
<#>Provide analyses and reports as required on the long-term resource and transmission plans for the Planning Authority Area.¶

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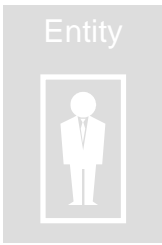
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Deleted: <#>Evaluate the impact of revised transmission and generator in-service dates on resource and transmission adequacy.¶

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transmission systems by way of all transmission lines (or paths) between those areas under specified system conditions.



Responsible Entity – Interconnected Planning Coordinator

Relationships with other Responsible Entities

1. Coordinates and collects data, as appropriate, for system modeling from Transmission Planner, Resource Planner, and or other Interconnected Planning Coordinators.
2. Provide and inform Resource Planners, Transmission Planners and adjacent Interconnected Planning Coordinators of the methodologies and tools for the simulation of the transmission system.
3. Consolidate and Collects information as appropriate, including:
 - a. Transmission facility characteristics and ratings from the Transmission Owners, Transmission Planners, Transmission Operators, and others.
 - b. Demand and energy forecasts, capacity resources, and demand response programs from Load-Serving Entities and Resource Planners.
 - c. Generator unit performance characteristics and capabilities from Generator Owners and others.
 - d. Long-term capacity purchases and sales from Transmission Service Providers.
4. Integrates the respective plans of the Resource Planners and Transmission Planners within the Interconnected Planning Coordinator Area. Verifies that the integrated plan meets reliability standards, and, in coordination with the Resource Planners and Transmission Planners, develops corrective actions for plans that do not meet those standards.
 - a. Coordinates transmission system protection and control, including special protection systems, with Transmission Planners, other Interconnected Planning Coordinators, Generator Owners, Generator Operators, Transmission Owners, Transmission Operators, Interconnected Reliability Authorities, and Distribution Providers.
5. Receives TSP's transmission service requests sent to the Transmission Planners and provides the resulting plans to Transmission Service Providers, Transmission Planners, Transmission Operators and Transmission Owners.
6. Provides transmission facility plans required to integrate new (end-use customer, generation, and transmission) facilities into the interconnected bulk electric systems to the Transmission Owners, Generator Owners, Transmission Planners and other requesters.
7. Coordinates TTC, IROL and SOL values (generally one year and beyond) with Transmission Planners, Interconnected Reliability Authority.

Comment [DMB11]: Keep "Interconnected"?

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Deleted: <#>Collects information as appropriate, including:¶
<#>Transmission facility characteristics and ratings from the Transmission Owners, Transmission Planners, Transmission Operators, and others.¶
<#>Demand and energy

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Deleted: <#>forecasts, capacity resources, and demand response programs from Load-Serving Entities and Resource Planners.¶
<#>Generator unit performance characteristics and capabilities from Generator Owners and others.¶
<#>Long-term capacity purchases and sales from Transmission Service Providers.¶
<#>Receives

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Deleted: <#>Transmission Planners and provides the resulting plans to Transmission Service Providers, Transmission Planners, Transmission Operators and Transmission Owners.¶
<#>Provides transmission facility plans required to integrate new (end-use customer, generation, and transmission) facilities into the interconnected bulk electric systems to the Transmission Owners, Generator Owners, Transmission Planners and other requesters.¶

Deleted: <#>Coordinates TTC, IROL and SOL values (generally one year and beyond) with Transmission Planners, Interconnected Reliability Authority, Transmission Owner, Transmission Operator, Transmission Service Provider and neighboring Interconnected Planning Coordinators

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Transmission Owner, Transmission Operator, Transmission Service Provider and neighboring Interconnected Planning Coordinators.

8. Collect and review reports on transmission and resource plan implementation from Resource Planners and Transmission Planners.

9. Coordinates the plans for the interconnection of facilities² to the bulk electric systems within its Interconnected Planning Coordinator Area with Transmission Planners and Resource Planners and adjacent Interconnected Coordinator Areas, as appropriate.

10. Coordinates with its related Reliability Authority(ies) and other Interconnected Planning Coordinators on reliability issues, as appropriate.

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Deleted: <#>Coordinates as appropriate with resource suppliers outside of the

Deleted: <#>Planning Authority

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<#>Coordinates transmission system protection and control, including special protection systems, with Transmission Planners, other Interconnected Planning Coordinators

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Deleted: <#>, Generator Owners, Generator Operators, Transmission Owners, Transmission Operators, Interconnected Reliability Authorities, and Distribution Providers.¶

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² Generators, transmission lines, and end-use customer equipment



Function – Balancing

Definition

Integrates resource plans ahead of time, and maintains load-interchange-generation balance within a Balancing Authority Area and supports Interconnection frequency in real time.

Tasks

1. Must have control of any of the following combinations within a Balancing Authority Area:
 - a. Load and Generation (an isolated system)
 - b. Load and Scheduled Interchange
 - c. Generation and Scheduled Interchange
 - d. Generation, Load, and Scheduled Interchange
2. Calculate Area Control Error within the Balancing Authority Area.
3. Review generation commitments, dispatch, and load forecasts.
4. Formulate an operational plan (generation commitment, outages, etc) for reliability assessment
5. Approve Interchange Transactions from ramping ability perspective
6. Implement interchange schedules by entering those schedules into an energy management system
7. Provide frequency response
8. Monitor and report control performance and disturbance recovery
9. Provide balancing and energy accounting (including hourly checkout of Interchange Schedules and Actual Interchange), and administer Inadvertent energy paybacks
10. Determine needs for Interconnected Operations Services
11. Deploy Interconnected Operations Services.
12. Implement emergency procedures



Responsible Entity – Balancing Authority

Relationships with other Responsible Entities

Ahead of Time

1. Compiles load forecasts from Load-Serving Entities.
2. Receives operational plans and commitments from Generator Operators (or Market Operators) within the Balancing Authority Area
3. Determines amount required and deploys Interconnected Operations Services to ensure balance (e.g., amount of operating reserve, load-following, frequency response) in coordination with the Reliability Authority.
4. Submits integrated operational plans (including maintenance plans from Generator Operators) to the Reliability Authority for reliability assessment and provide balancing information to the Reliability Authority for monitoring.
5. Receives reliability assessments from the Reliability Authority.
6. Receives approved, valid, and balanced Interchange Schedules from the Interchange Authorities.
7. Confirms interchange schedules with Interchange Authorities.
8. Confirms ramping capability with Interchange Authorities.
9. Implements generator commitment and dispatch schedules from the Load-Serving Entities and Generator Operators who have arranged for generation within the Balancing Authority Area. The Balancing Authority provides this commitment and dispatch schedule to the Reliability Authority.
10. Provides generation dispatch to its Reliability Authority for reliability analysis.
11. Acquires Interconnected Operations Services from Generator Owners.

Comment [DMB12]: This depends on how the market operations are set up.

Comment [DMB13]: See RA Item 10.

Real Time

12. Directs resources (Generator Operators and Load-Serving Entities) to take action to ensure balance in real time.
13. Receives real-time operating information from the Transmission Operator.
14. Directs Transmission Operator (or Distribution Provider) to reduce voltage or shed load if needed to ensure balance within its Balancing Authority Area.
15. Receives loss allocation from Transmission Service Providers (for repayment with in-kind losses).
16. Provides real-time operational information for Reliability Authority monitoring.
17. Complies with reliability requirements specified by Reliability Authority.

Comment [DMB14]: See T. Op. Item 11

Comment [DMB15]: Correct?

18. Informs Reliability Authority and Interchange Authorities of Interchange Schedule interruptions (e.g., due to generation or load interruptions) within its Balancing Authority Area.
19. Directs Generator Operators to implement redispatch for congestion management as directed by the Reliability Authority.
20. Requests operating information from Generator Operators.
21. Verifies implementation of emergency procedures to Reliability Authority.
22. Coordinates use of controllable loads with Load Serving Entities (i.e., interruptible load that has been bid in as Interconnected Operations Services).
23. Implements emergency procedures as directed by the Reliability Authority.
24. Implements system restoration plans as coordinated by the Transmission Operator.

Comment [DMB16]: See T. Op Item 8.

After the hour

25. Confirms Interchange Schedules with Interchange Authorities after the hour for “checkout.”
26. Confirms Actual Interchange with adjacent Balancing Authorities after the hour for “checkout.”



Function – Market Operations

Definition

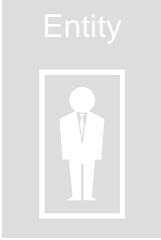
Integrates energy, capacity, balancing, and transmission resources to achieve an economic, reliability-constrained dispatch of resources. The dispatch may be either cost-based or bid-based.

Tasks

1. Administer a market that provides capacity, energy, balancing resources, and other Ancillary Services subject to system requirements and constraints.
2. Arrange resources for congestion management.
3. Provide dispatch plans.

Special Considerations

The Market Operations function, its tasks, and the interrelationships with other entities is included in the Functional Model only as an interface point with other types of industry models.



Responsible Entity – Market Operator (or Resource Dispatcher)

Relationships with other Responsible Entities

Market Operator tasks and relationships are specific to a particular Market Operator and will depend on the market structure over which the Market Operator presides.

The Resource Dispatcher performs the same dispatch duties as the Market Operator, but in a non-market environment.

Making Deals

Approve interchange transaction requests from Purchasing-Selling Entities, Generator Owners, and Load-Serving Entities based on the market structure and rules.

Ahead of Time

Provide commitment plans to Generator Operators and Balancing Authorities.

- 1.



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Comment [DMB17]: Added these tasks, which seem to be pretty common among Market Operators.



Function – Resource Planning

Definition

Develops a plan (generally one year and beyond) for the resource adequacy of specific loads (customer demand and energy requirements) within an Interconnected Planning Coordinator Area.

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Tasks

2. Maintain resource (demand and capacity) models to evaluate resource adequacy.

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3. Apply methodologies and tools for the analysis and development of resource adequacy plans.

4. Collect or develop information required for resource adequacy purposes, including:

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a. Collect or develop demand and energy forecasts, capacity resources, and demand response programs.

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b. Collect generator unit performance characteristics and capabilities, and

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c. Collect long-term capacity purchases and sales.

5. Assess, develop, document and report on a resource adequacy plan for its portion of the Interconnected Planning Coordinator Area.

Deleted: <#>collect or develop demand and resource information required for planning purposes.¶ Provide capacity resource information to planning and operating functions and service functions.

6. Assist in the evaluation of the deliverability of resources to customers.

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7. Include consideration of generation capacity from resources both within and outside of the Interconnected Planning Coordinator Area.

8. Monitor and report, as appropriate, on its resource plan implementation.

Deleted: <#>Develop and report, as appropriate, on its resource plans to others for assessment and compliance with reliability standards.¶



Responsible Entity – Resource Planner

Relationships with other Responsible Entities

1. Coordinates the resource models with its Interconnected Planning Coordinator. Deleted: Planning Authority
2. Works and coordinates with Transmission Owners and Transmission Planners on the deliverability of resources to customers.
3. Reports its resource plan to the Interconnected Planning Coordinator for assessment and compliance with reliability standards. Deleted: Planning Authority
4. Reports on resource plan implementation to the Interconnected Planning Coordinator. Deleted: Planning Authority
5. Works with Interconnected Planning Coordinator and Transmission Planners to identify potential alternative solutions to meet resource requirements. Deleted: Planning Authority
6. Coordinates with and collects data for resource planning from the Load-Serving Entities, Generator Owners, Generator Operators, Transmission Owners, Transmission Operators, and Interchange Coordinators. Deleted: Authorities
7. Coordinates with Transmission Planners, Transmission Service Providers, Interconnected Reliability Authorities, and Interconnected Planning Coordinators on resource adequacy plans as appropriate. Formatted: Numbered + Level: 1 + Numbering Style: 1, 2, 3, ... + Start at: 1 + Alignment: Left + Aligned at: 0.25" + Tab after: 0.5" + Indent at: 0.5"
Deleted: Authorities
Deleted: Planning Authority
8. Coordinates with other Resource Planners within the Interconnected Planning Coordinator Area to avoid the double-counting of resources. Deleted: Planning Authority

Special Considerations

In some markets, it may be required that the same entity perform the Resource Planning Function and the Interconnected Planning Coordinator Function. For example, the Resource Planner may also be the Interconnected Planning Coordinator in those markets where there are no entities responsible or obligated to serve load. In these cases, the Resource Planning Function becomes a resource assessment function performed by the Interconnected Planning Coordinator that identifies the need for additional resources to be provided by the market. Deleted: Planning Authority
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Function – Transmission Operations

Definition

Ensures the real-time operating reliability of the transmission assets within a Transmission Operator area.

Deleted: Operates or directs the operations of the transmission facilities.†

Comment [DMB18]: Expanded definition. Similar to Reliability Authority definition.

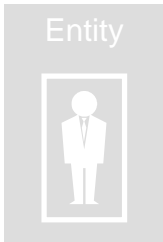
Comment [DMB19]: Rewrote all tasks to be more inclusive and align better with Reliability Authority tasks.

Tasks

1. Maintain reliability of the transmission area in accordance with Reliability Standards.
2. Provide detailed maintenance schedules (dates and times)
3. Adjust dc ties within the transmission area for those Interchange Transactions that include the dc tie in the transmission path
4. Maintain defined voltage profiles.
5. Define operating limits, develop contingency plans, and monitor operations of the transmission facilities.
6. Provide telemetry of transmission system information

1. Monitor and provide telemetry (as needed) of all reliability-related parameters within the Transmission Operator area
2. Provide transmission maintenance schedules
3. Develop System Operating Limits and ensure that the Transmission Operator area operates within those limits
4. Perform reliability analysis (actual and contingency) for the Transmission Operator area
5. Adjust dc ties and phase shifters within the transmission area for those Interchange Transactions that include these facilities in the transmission path
6. Deploy reactive resources to maintain transmission voltage within defined limits
7. Develop and implement emergency procedures
8. Develop and implement system restoration plans

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Responsible Entity – Transmission Operator

Comment [DMB20]: New section.

Introduction to the Transmission Operator

The Transmission Operator is responsible for the real-time operating reliability of the transmission assets under its purview, which is referred to as the Transmission Operator area. The Transmission Operator has the authority to take certain actions to ensure that its Transmission Operator area operates reliably.

For further details, refer to the Reliability Authority.

The Transmission Operator area. While the Reliability Authority area is defined by the bulk electric system within the metered boundaries of the RA’s Balancing Authority areas, the Transmission Operator area is defined as the *collection of transmission assets* over which the Transmission Operator is responsible for operating. The Transmission Operator Area is also defined as wholly within a Reliability Authority Area and within a Balancing Authority Area. This is because when the Balancing Authority asks the Transmission Operator to shed load in an emergency to re-establish a Balancing Authority’s area control error within compliance limits, the Balancing Authority must be assured that the load shedding is within the Balancing Authority Area.

A Transmission Operator may therefore operate more than one Transmission Operator Areas. But those areas must be identifiable and listed in the Regional Reliability Plan.

The Transmission Operator and Reliability Authority have similar roles with respect to transmission operations, but different scopes. The Functional Model assumes that the Transmission Operator scope is much narrower than the Reliability Authority, and the Transmission Operator does not necessarily “see” very far beyond its own boundaries. Therefore, the Transmission Operator can calculate System Operating Limits, but the Model assumes the Transmission Operator cannot calculate Interconnection Reliability Operating Limits, which requires a much wider scope.

Relationships with other Responsible Entities

Ahead of Time

1. Receives maintenance requirements and plans from the Transmission Owner.
2. Provides maintenance schedules and construction plans to Reliability Authority and Planning Coordinator.
3. Revises transmission maintenance plans as directed by the Reliability Authority and as permitted by agreements, recognizing that equipment maintenance must be performed as needed to ensure the life of the equipment and meet warranty requirements.
4. Defines System Operating Limits, develops contingency plans, and monitors operations of the transmission facilities under the Transmission Operator’s control and as directed by the Reliability Authority.

Comment [DMB21]: To align with Reliability Authority Task 2.

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Comment [DMB22]: Moved 2 and 3 from 5 and 6.

Comment [DMB23]: More precise.

Deleted: operating limits

5. Provides operating information to the Reliability Authority.
 6. Determines amount required and arranges for interconnected operations services from Generator Owners to ensure voltage support (e.g., reactive supply from generation resources) in coordination with (or direction of) the Reliability Authority.
 - Comment [DMB24]: This may vary from case to case.
 7. Provides Planning Coordinator information on capability to curtail (reduce) and shed load during emergencies.
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 8. Coordinates restoration plans with Balancing Authorities and Distribution Providers.
 - Comment [DMB25]: Aligns with BA and DP tasks and responsibilities.
 9. Receives reliability analyses from the Reliability Authority.
 - Comment [DMB26]: Aligns with the RA responsibility.
- Real Time**
10. Operates or directs the operations of the transmission system within System Operating Limits established by the Transmission Owners and Generator Owners, and Interconnection Reliability Operating Limits established by the Reliability Authority.
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 - Deleted: equipment and facility ratings
 - Deleted: system ratings
 11. Deploys reactive resources from Transmission Owners and Generator Owners as Interconnected Operations Services to maintain acceptable voltage profiles.
 - Comment [DMB27]: Adds clarity and aligns better with the reliability standards.
 12. Provides real-time operations information to the Reliability Authority and Balancing Authority.
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 - Comment [DMB28]: Align with BA tasks.
 13. Notifies Generator Operators of transmission system problems (e.g., voltage limitations or equipment overloads that may affect generator operations).
 14. Requests Reliability Authority to mitigate equipment overloads. (e.g., redispatch, transmission loading relief).
 15. Coordinates load shedding with, or as directed by, the Reliability Authority.
 16. Directs Distribution Providers to shed load in response to direction from Reliability Authority, Transmission Operators, or Balancing Authorities.
 - Comment [DMB29]: To align with these functions.
 17. Implements dc tie operations for those ties under the Transmission Operator's purview as directed by the Transmission Service Provider.

Function

- ☑ _____
- ☑ _____
- ☑ _____
- ☑ _____

Function – Interchange

Definition

Coordinate implementation of valid and balanced Interchange Schedules between Balancing Authority Areas, and ensures communication of Interchange Transactions for reliability assessment purposes.

Tasks

1. Consolidate evaluations of valid, balanced, Interchange Schedules (validation of sources and sinks, transmission arrangements, interconnected operations services, etc.).
2. Collect ramping capability confirmations of Balancing Authority Areas for requested Interchange Schedules
3. Coordinate (i.e., collect, consolidate, and disseminate) Interchange approvals, changes, and denials
4. Communicate Interchange Transaction approval for implementation
5. Communicate Interchange Transaction information to Reliability Assessment Systems (e.g., the Interchange Distribution Calculator in the Eastern Interconnection)
6. Maintain record of individual Interchange Schedules

These changes accommodate the current-day BA-to-BA if Formatted: Box Text scheduling practices.

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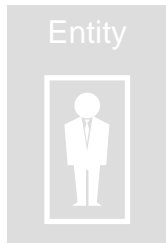
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Responsible Entity – Interchange Authority

Relationships with other Responsible Entities

Ahead of Time

1. ~~Receives requests from Purchasing-Selling Entities to implement Interchange Transactions.~~
2. Submits all Interchange Transaction requests to the Reliability Authorities, Balancing Authorities, and Transmission Service Providers for approvals.
3. Receives confirmation from Transmission Service Providers of transmission arrangement(s).³
4. Receives confirmation from Balancing Authorities of the ability to meet ramping requirements for submitted Interchange ~~Transactions.~~
5. Receives information from Balancing Authorities of expected Interconnected Operations Services deployments that result in an Interchange Transaction (for example, an Interchange Schedule that is enabled by reducing load in a Balancing Authority Area, which frees up resources.)

Communicates final approval or denial of Interchange transactions to the Balancing Authorities, Transmission Service Providers, Reliability Authorities, and Purchase Selling Entities for implementation, **Real Time**

- ~~6.~~
7. Receives curtailments and redispatch implementation from Reliability Authorities.
8. Informs Transmission Service Providers, Purchasing-Selling Entities, Reliability Authorities, and Balancing Authorities of Interchange Schedule Curtailments.
9. Receives information on Interchange Schedule interruptions due to generation loss or load interruption from the Balancing Authorities and communicates the Interchange Schedule status to Balancing Authorities, Transmission Service Providers, Reliability Coordinators and Purchase-Selling Entities.

³ Clarification is required regarding the role of the sink PSE to ensure a contiguous transmission path by including the Transmission Service Providers on the scheduling path on the Etag.

These changes accommodate the current-day BA-to-BA interchange scheduling practices.

Comment [DMB30]: Redundant to item 5 below. Accomplished by "Ahead of Time" item 5.

Deleted: <#>Verifies ramping capability for requested Interchange Schedules with Balancing Authorities.

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Comment [DMB31]: Moved to the Balancing Authority.

Comment [DMB32]: Moved to the Balancing Authority. BA-to-BA confirmation ensures the interchange schedules are balanced and valid.

Deleted: <#>Informs Purchasing-Selling Entities on implementation of load-provided Interconnected Operations Services that were bid into the market that result in an Interchange Transaction.

Deleted: <#>¶ Provides approved, valid, and balanced Interchange Schedules to the Balancing Authorities for implementation.

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Deleted: Provides Transmission Service Providers with the requested Interchange Transactions received from Purchasing Selling Entities using that Transmission Service Providers' transmission system.

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After the hour

10. Maintains and provides records of individual Interchange Transactions for the Balancing Authorities.



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Function – Transmission Planning

Definition

Develops a plan (generally one year and beyond) for the reliability of the interconnected bulk electric transmission systems within its portion of the Interconnected Planning Coordinator Area

Tasks

1. Maintain transmission system models (steady-state, dynamics, and short circuit) to evaluate transmission system performance.
2. Apply methodologies and tools for the analysis and simulation of the transmission system in the assessment and development of transmission expansion plans.
3. Collect information required for transmission planning purposes, including transmission facility characteristics and ratings.
4. Assess, develop, document and report on a transmission expansion plan which
 - a. Verify that plans meets reliability standards for its portion of the Interconnected Planning Coordinator Area.
 - b. Identify and report on potential transmission system deficiencies and provide alternate plans that mitigate these deficiencies
5. Evaluate and plan transmission service requests generally one year and beyond.
6. Evaluate and plan for all requests required to integrate new (end-use customer, generation, and transmission) facilities into the interconnected bulk electric systems.
7. Support the development of TTC⁴, IROL and SOL values, as appropriate.
8. Monitor and report, as appropriate, on its transmission expansion plan implementation.
9. Notify others of any planned transmission changes that may impact their facilities.

~~Deleted: long-term~~

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~~Develops a long-term (generally one year and beyond) plan for the reliability (adequacy) of the interconnected bulk electric transmission systems within a portion of the Planning Authority Area.¶~~

~~Deleted: and apply appropriate tools for the development of transmission plans.~~

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~~Deleted: Develop plans within defined voltage and stability limits and within appropriate facility thermal ratings.~~

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⁴ TTC is the total transfer capability and refers to the amount of electric power that can be moved or transferred reliably from one area to another area of the interconnected transmission systems by way of all transmission lines (or paths) between those areas under specified system conditions.

10. Define system protection and control needs and requirements, including special protection systems (remedial action schemes), to meet reliability standards.

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Deleted: Notify others of any planned transmission changes that may impact their facilities.¶
<#>Evaluate and plan for all interconnection requests and transmission service requests

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Deleted: <#>Develop and report, as appropriate, on its transmission expansion plan for assessment and compliance with reliability standards.¶

Deleted: <#>Monitor and report, as appropriate, on its transmission expansion plan implementation.¶
<#>Support the development of TTC⁶, IROL and SOL values, as appropriate.¶

⁷ TTC is the total transfer capability and refers to the amount of electric power that can be moved or transferred reliably from one area to another area of the interconnected transmission systems by way of all transmission lines (or paths) between those areas under specified system conditions.



Responsible Entity – Transmission Planner

Relationships with other Responsible Entities

1. Coordinates and collects data as appropriate for system modeling from Load-Serving Entities, Generator Owners, and Distribution Providers with other Transmission Planners, Transmission Owners, and Transmission Service Provider. Coordinates its transmission models with its Interconnected Planning Coordinator.
 - a. Coordinates its transmission models with its Interconnected Planning Coordinator.
2. Coordinates the methodologies used for evaluation of transmission expansion plans with Transmission Service Providers, Transmission Owners, Interconnected Reliability Authorities, Interconnected Planning Coordinators, Resource Planners and other Transmission Planners.
3. Provides transmission information, as appropriate, to Interconnected Planning Coordinator.
4. Coordinates with its Interconnected Planning Coordinator, other Interconnected Planning Coordinators, and other Transmission Planners within its Interconnected Planning Coordinator Area on reliability issues, as appropriate, including
 - a. Verify that plans meets reliability standards for its portion of the Interconnected Planning Coordinator Area.
 - b. Identify and report on potential transmission system deficiencies and provide alternate plans that mitigate these deficiencies.
5. Coordinate with Transmission Service Providers to evaluate and plan for transmission service and interconnected requests beyond one year.
6. Coordinate with Transmission Owners, Generator Owners and LSE the evaluation and plans for all requests required to integrate new (end-use customer, generation, and transmission) facilities into the interconnected bulk electric systems.
7. Coordinate with Transmission Planners, Interconnected Reliability Authority, Transmission Owner, Transmission Operator, Transmission Service Provider and neighboring Interconnected Planning Coordinators the development of TTC', IROL and SOL values, as appropriate.
8. Coordinate its transmission expansion plan implementation with Transmission Owners, Transmission Operators and Interconnected Planning Coordinator.
9. Notify adjacent Transmission Owners, Transmission Operators, Interconnected Planning Coordinators and other entities that may be impacted of any planned transmission changes.

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Deleted: Interconnected Planning Coordinator.¶ <#>Notifies Generator Owners and Transmission Owners of any planned transmission changes that may

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Deleted: <#>affect the operation of their facilities.¶ Coordinates with Resource Planners on the deliverability of new and proposed generation facilities, as appropriate.

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10. Working with Transmission Owners define system protection and control needs and requirements, including special protection systems (remedial action schemes), to meet reliability standards.



Function – Transmission Service

Definition

Administers the transmission tariff. Provides transmission services to qualified market participants under applicable transmission service agreements (for example, the *pro forma* tariff).

Tasks

1. Receive transmission service requests and process each request for service according to the requirements of the tariff.
 - a. Maintain commercial interface for receiving and confirming requests for transmission service according to the requirements of the tariff (e.g., OASIS).
2. Approve or deny transmission service requests
3. Approve Interchange Transactions from transmission service arrangement perspective
4. Determine and post available transfer capability (ATC⁸) values.
5. Allocate transmission losses (MWs or funds) among Balancing Authority Areas.

⁸ In this document, we use the term “ATC” in the generic sense to refer to the amount of transmission transfer capability that is offered under regulatory requirements.



Responsible Entity – Transmission Service Provider

Relationships with other Responsible Entities

Making Deals

1. Approves or denies transmission service requests from Purchasing-Selling Entities, Generator Owners, and Load-Serving Entities

Ahead of Time

2. Receives transmission expansion plans identified by the Planning Coordinator to help determine ability to accommodate long-term transmission service requests
3. Coordinates ATC with Reliability Authority (who may adjust operating reliability limits) and other Transmission Service Providers
4. Confirms Transmission Service requests to Interchange Authorities.

Real Time

5. Receives Interchange Transaction implementation and revisions from the Interchange Authorities



Function – Transmission Ownership

Definition

Owns and maintains transmission facilities.

Tasks

1. Install and maintain transmission facilities according to prudent utility practice
2. Establish ratings of transmission facilities.
3. Develops interconnection agreements.

Responsible Entity – Transmission Owner

Entity



Relationships with other Responsible Entities

1. Coordinates with Transmission Planners and the Planning Coordinator and those entities (Generator Owners, other Transmission Owners, and Load-Serving Entities) desiring to interconnect facilities with the bulk electric systems.
2. Considers transmission expansion plans identified by the Planning Coordinator
3. Provides transmission expansion plans and changes to the Planning Coordinator and Transmission Planners.
4. Develops agreements or procedures with the Transmission Service Providers.
5. Develops operating agreements or procedures with the Transmission Operators and Reliability Authorities.
6. Provides transmission facility ratings to Transmission Operators, Reliability Authorities, Transmission Service Providers, Transmission Planners, and Planning Coordinator.
7. Provides construction plans to the Reliability Authority and Planning Coordinator
8. Provides maintenance plans to the Transmission Operator.
9. Develops agreements with adjacent Transmission Owners for the design, construction and operation and maintenance of joint transmission facilities.



Function – Distribution

Definition

Provides and operates the “wires” between the transmission system and the end-use customer.

Tasks

1. Provide the interface between the transmission system and the end-use customer.
2. Provide voltage reduction and load shedding as necessary



Responsible Entity – Distribution Provider

Relationships with other Responsible Entities

Ahead of Time

1. Coordinates with Load-Serving Entities, Transmission Planners and their related Planning Coordinator on transmission expansion (e.g., coordination of system protection, special protection systems, load shedding, etc).
2. Works with end-use customers to identify new facility connection needs.

Real Time

3. Implements voltage reduction and sheds load as directed by Transmission Operators.
4. Implements system restoration plans as coordinated by the Transmission Operator.

Comment [DMB33]: Align with the Transmission Operator.

Special Considerations

The Distribution Provider provides the physical connection between the end-use customer and the electric system. For those end-use customers who are served at transmission voltages, the Transmission Owner also serves as the Distribution Provider. Thus, the Distribution Provider is not defined by a specific voltage, but rather as performing the Distribution function at any voltage.

The Distribution Provider is responsible for “local” safety and reliability. The Distribution Provider knows which customers are “critical” loads that should be shed only as a last resort, and provides the switches and reclosers for this emergency action.



Function – Generator Operation

Definition

Operates generating unit(s) and performs the functions of supplying energy and Interconnected Operations Services.

Tasks

1. Operate generators to provide energy or Interconnected Operations Services (or both) per contracts or arrangements
2. Formulate daily generation plan
3. Report operating and availability status of units and related equipment, such as automatic voltage regulators.
4. Develop annual maintenance plan for generating units and performs the day-to-day generator maintenance



Responsible Entity – Generator Operator

Relationships with other Responsible Entities

Ahead of Time

1. Provides generation commitment plans to the Balancing Authority after notification by Purchase-Selling Entities or Load Serving Entities of transaction approvals.
2. Provides Balancing Authority and Transmission Operator with requested amount of Interconnected Operations Services.
3. Provides operating and availability status of units to Reliability Authority and Balancing Authority for reliability analysis.
4. Reports annual maintenance plan for generating units to Balancing Authority.
5. Reports status of automatic voltage regulators to Transmission Operators.
6. Provides long-term unit maintenance schedules and unit retirement plans to Resource Planner and Planning Coordinator.

Real Time

7. Implements, upon direction by Balancing Authority, redispatch and interchange schedules
8. Provides real-time operating information to the Transmission Operator and Balancing Authority (to both the “host” Balancing Authority in which the Generator is physically located and the sink Balancing Authority in case the generation is dynamically transferred between Balancing Authority Areas).



Function – Generator Ownership

Definition

Owns and maintains generating units.

Tasks

1. Establish generating unit ratings, limits and operating requirements.
2. Maintain its generation facilities according to prudent utility practices.
3. Verify generating unit performance characteristics



Responsible Entity – Generator Owner

Relationships with other Responsible Entities

1. Provides generator ratings, limits, and models to Transmission Planners and Planning Authorities.

Real Time

2. May deal directly⁹ with either Load Serving Entities or Purchase-Selling Entities via bilateral contracts for energy, capacity, and Interconnected Operations Services products
3. Provides voltage support to Transmission Operators

⁹ The Generator Owner can serve as its own Purchasing-Selling Entity, or be affiliated with a Load-Serving Entity.



Function – Purchasing-Selling

Definition

Purchases or sells energy, capacity and all necessary Interconnected Operations Services as required. Purchasing-Selling Entities may be Marketers or Merchant Affiliates.

Tasks

1. Purchase and sell generation or capacity
2. Arrange Interchange Transactions
3. Arrange for transmission service (as required by tariffs)
4. Purchase and sell Interconnected Operations Services
5. Request implementation of Interchange Transactions



Responsible Entity – Purchasing-Selling Entity

Relationships with other Responsible Entities

Making Deals

1. Assists Load Serving Entities (LSE) define Interchange Transactions in meeting the LSE's needs.
2. Assists Load Serving Entities and other Purchasing-Selling Entities in supplying the Interconnected Operations Services needs of the Load-Serving Entities. (E.g., supplying regulation service via Interchange Transactions).
3. Arranges for transmission service from Transmission Service Providers and makes arrangements for Interconnected Operations Services with Generator Owners or Load-Serving Entities as applicable for Interchange Transactions.

Ahead of Time

4. Submits requests to Interchange Authorities to implement Interchange Transactions.
5. Notifies Generator Operators and Load Serving Entities if Interchange Transaction requests are approved or denied.

Real Time

6. Notifies Interchange Authorities of Transaction Cancellations or Terminations.



Function – Load-Serving

Definition

Secures energy and transmission service (and related Interconnected Operations Services) to serve the end-use customer.

Tasks

1. Collect individual and develop overall load profiles and forecasts of end-user energy requirements. (Daily, weekly, monthly, annually etc...)
2. Identify and provide facilities for load curtailment
3. Identify and provide facilities for self-provided Interconnected Operations Services
4. Negotiate agreements for needed energy, transmission service, and Interconnected Operations Services
5. Manage resource portfolios to meet demand and energy requirements of end-use customers.



Responsible Entity – Load-Serving Entity

Relationships with other Responsible Entities

Making Deals

1. Assists end-use customers develop and submit load profiles, plans, and forecasts as needed to the Balancing Authorities, Generator Owners, Generator Operators, Purchasing-Selling Entities, Planning Coordinator, Resource Planners, Transmission Planners, and Market Operator(s).
2. Assists Purchasing-Selling Entities in arranging for the delivery of energy to a specific metering point for loads via bilateral contracts
3. Assists Generator Owners and Generator Operators on behalf of end-use customers in securing energy and Interconnected Operations Services needed via bilateral contracts. (In this role the Load Serving Entity is acting like the Purchasing-Selling Entity.)

Ahead of Time

4. Arranges for transmission service via Transmission Service Providers.
5. Provides generation (affiliated and non-affiliated) commitments and dispatch schedules to the Balancing Authority.
6. Works with end-use customers to identify new facility connection needs
7. Works with Resource Planners to ensure planned purchases that cross Planning Coordinator Area boundaries are properly reported for system modeling and reliability assessments
8. Coordinates with Transmission Planner and the Planning Coordinator on data requirements for system modeling and transmission expansion.
9. Works with the Balancing Authorities and Transmission Operators for implementing load shedding during emergency conditions and to provide load interruption capability as an Interconnected Operations Service.

Real Time

10. Assists Distribution Providers in implementing load shedding during emergency conditions and Balancing Authorities to provide load interruption capability as an Interconnected Operations Service



Function – Compliance Monitoring

Definition

Monitors, reviews, and ensures compliance with Reliability Standards and administers sanctions or penalties for non-compliance to the standards.

Tasks

1. Audit and document compliance of all registered Responsible Entities to Reliability Standards
2. Recommend sanctions or penalties for non-compliance with Reliability Standards



Responsible Entity – Compliance Monitor

Relationships with other Responsible Entities

1. Receives oversight direction from the Standards Developer for consistency
2. Monitors all responsible entities as required by Reliability Standards and Certification Criteria.
3. Provides compliance information to the Standards Developer and others as appropriate



Function – Standards Development

Definition

Develops, maintains, and implements Reliability Standards to ensure the reliability of the interconnected bulk electric transmission systems in the United States, Canada, and Baja California Norte, Mexico.

Tasks

1. Develop Reliability Standards for the planning and operation of the interconnected bulk electric transmission systems that serve the United States, Canada, and Baja California Norte, Mexico.
2. Develop compliance measurement and enforcement procedures for each Reliability Standard.
3. Develop Criteria and Certification Procedures for Balancing, Interchange, and Reliability Authorities, Transmission Operators, and others as needed.
4. Provide for appeals and dispute resolution procedures.

Entity



Responsible Entity – Standards Developer

Relationships with other Responsible Entities

Coordinates with other standards-approving organizations

Functional Model Approval Procedure

Changes to the Functional Model are approved by the standing committees and the board of trustees. The Functional Model is the framework for the Reliability Standards, and the functions, their definitions, and interrelationships must be considered as SARs and Standards are drafted. Doing otherwise would cause conflicts among the Reliability Standards as they are developed over time.

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The Functional Model Working Group considers all requests to revise the Functional Model, and manages the revision process:

1. Functional Model Working Group reviews the proposed revision to the Model, considering current Reliability Standards, and SARs and Standards being drafted. The Working Group will work with the individual or group requesting the change to the Model.
2. Working Group posts revision for public comment for 45 days.
3. Working Group submits revision to the standing committees for review and approval. (The revision will include an implementation date for the revisions.)
4. Working Group submits standing committee-approved revision to the NERC Board of Trustees for approval.
5. NERC staff posts revised Functional Model.

Item 6. Technical Document

Action

Discussion. The working group has discussed the Technical Document on many occasions, and needs to settle on what it should contain.

Suggested Table of Contents

1. Explanation of certain functions
 - a. Reliability Authority
 - b. Balancing Authority
 - c. Transmission Operator
 - d. Interchange Authority
 - e. Planning Coordinator
 - f. Others?
2. Topics
 - a. Reliability Coordinator versus Reliability Authority
 - b. "Authority" concepts
 - c. Delegation Principles
 - d. Interchange concepts
 - i. Losses
 - ii. Future concepts — the Interchange Authority and direct source to sink scheduling
 - e. Market Operations (dispatch)
 - f. Interface between the Functional Model and other business models
3. Functional Model concepts
 - a. Responsible entities
 - b. Rolling up responsible entities into organizations

Item 7. Working Group Action Plan

Action

Review and update action plan.

Attachment

"Recommendations from the Functional Model-Reliability Standards Coordination Task Force and the Interchange Authority Implementation Task Force," revised November 3, 2005

Background

At its first meeting, the Functional Model Working Group discussed the action plan that the Functional Model-Reliability Standards Coordination Task Force had recommended. The working group then decided how it wanted to approach each of the items, revised the action plan, and then adopted it.

It's time the working group review this plan to see where it is and what needs adjusting.

Recommendations from the Functional Model-Reliability Standards Coordination Task Force and the Interchange Authority Implementation Task Force

<i>Item</i>	<i>Comments and Action from First FMWG Meeting</i>	<i>As of November 3, 2005</i>
Functional Model		
<p>1. Developing standards to meet reliability objectives. Reliability standards should be developed to meet justifiable reliability objectives, not solely to codify the functions and tasks defined in the Functional Model. The Functional Model represents a set of guiding principles for the development of reliability standards. It provides definitions and interrelationships to be taken into account in the development of standards. The Functional Model does not itself establish a minimum set of reliability requirements or define who should be responsible for reliability requirements. (Rec 1)</p>	<p>This concept is covered in the Guiding Principles of the Functional Model.</p> <p>Action: Review Guiding Principles of the Functional Model to ensure this concept is clearly explained. Also, we need to consider ways to more broadly advertise the relationship between the model and the standards.</p> <p><u>Prepare paper that explains these concepts. Then decide what to do with that paper. It may be incorporated into the Purpose and Principles – or something else. Technical doc?</u></p> <p><u>Need long-term goal for advertising the model and its relationship to the standards, compliance, regional plans.</u></p> <p><u>Connect the “dots” (4 boxes)?</u></p>	<p>The FMWG has agreed that the Model is a “guide,” and that the Model and the standards will converge over time.</p> <ul style="list-style-type: none"> • The Working Group agrees with this concept. • The Forward to Version 3 explains it. • We need to explain this when presenting the Model to the committees and Board. Also explain the “Putting It All Together” concept that connects the dots.
<p>2. Revising standards and the model. The Functional Model and reliability standards may need to be revised from time to time to maintain an appropriate degree of consistency. (Rec 2)</p>	<p>Do we need some kind of formal process for these reviews? Standards are supposed to be reviewed every five years.</p> <p><u>The Working Group intends to post specific changes to the Functional Model based on these recommendations and its own discussions.</u></p>	<p>Same.</p>
<p>3. Responsible entity titles. Titles of responsible operating entities described in the Functional Model should be revised to emphasize both the wide-area role of the</p>	<p>Action: Consider changes to the Reliability Authority and Transmission Operator names, tasks, and interrelationships. Also, review Technical Document for additional clarifying descriptions.</p>	<p>Done.</p> <p>Working Group agreed to keep all names as is except for:</p> <p>Planning Authority → Planning Coordinator</p>

Recommendations from FMRSTF and IAITF

<i>Item</i>	<i>Comments and Action from First FMWG Meeting</i>	<i>As of November 3, 2005</i>
<p>reliability authority and the authority of the transmission operator for reliability within its responsibility area. For example, the reliability authority should be an "interconnection reliability authority" and the transmission operator should be a "transmission authority". (Rec 4)</p>	<p><u>Discuss "interconnection" vs. "interconnected."</u> <u>Make sure the RC tasks are included in the regional plan programs.</u></p>	
<p>a. Reliability Authority. The Interconnection Reliability Authority definition, tasks and interrelationships in the Functional Model should be revised to focus on interconnection reliability and coordination of reliability among its transmission authorities. The concept of 'highest authority' as it appears in the Functional Model should be modified to recognize multiple responsible entities can have 'an' authority to direct actions to operate reliably within their area and scope of responsibility. For example, the transmission authority may have authority to direct actions to protect its own system. It is important that this shift not be seen as diminishing the authority of the interconnection reliability authority from directing actions to preserve the reliability of the</p>	<p>Action: Review defining of the RA and revise as needed to incorporate these concepts. <u>Change to "Interconnected."</u></p>	<ul style="list-style-type: none"> • Working Group did not change the name of the Reliability Authority. • Working Group added more detail to the Transmission Operator function to explain its authority role. • Consider including "Authority Concepts" paper in Technical Documents reference.

Recommendations from FMRSTF and IAITF

<i>Item</i>	<i>Comments and Action from First FMWG Meeting</i>	<i>As of November 3, 2005</i>
<p>interconnection. This authority must remain explicit in the Functional Model. It should also be explicit that other responsible entities must follow these interconnection reliability authority directives, subject to safety, equipment, environmental, statutory and regulatory requirements. (Rec 5)</p>		
<p>b. Transmission Operator. The transmission authority definition, tasks and interrelationships in the Functional Model should be revised to strengthen its authority and responsibilities to manage reliability within its area, subject to oversight by the interconnection reliability authority looking at interconnection-related issues. (Rec 6)</p>	<p>Action: Review defining of the Transmission Operator and revise as needed to incorporate these concepts.</p> <p><u>Review FMRSTF recommended revisions.</u></p>	<p>Done.</p>
<p>4. Interchange Authority. The interchange authority should remain in the Functional Model but should be renamed the “interchange coordinator”. The interchange coordinator should be implemented in stages as driven by reliability need or business justification. The interchange coordinator definition, tasks and interrelationships should be modified to allow more flexibility and should be less prescriptive of a</p>	<p>Action: Consider changes to the Interchange Authority. Also, review Technical Document for additional clarifying descriptions.</p> <p><u>See “Near Term” recommendations a., b., and e. Review all recommendations from the IAITF report below. Need to consider short-, mid-, and long-term recommendations.</u></p> <p><u>Try to minimize changes to the model and consider where we may want to go.</u></p> <p><u>Western Interconnection working on IC procedure.</u></p>	<p>Done.</p> <p>The Working Group did not change the name of the Interchange Authority, but did incorporate the recommendations from the Interchange Authority Implementation Task Force. This includes a return to the “daisy-chain” BA-to-BA scheduling procedures.</p>

Recommendations from FMRSTF and IAITF

Item	Comments and Action from First FMWG Meeting	As of November 3, 2005
particular business model. (Rec 15)	Review need for certification of the IA or IC.	
<p>a. Rename the IA. Rename the Interchange Authority to Interchange Coordinator. The formal change in name from IA to IC may remove some concern with the use of the word "authority" and may more closely reflect actual practice and expectations.</p>		<p>Done. The Working Group did not change the name of the Interchange Authority.</p>
<p>b. Revise IA definition. Revise the definition of the IA to remove the term "authority" and replace it with the term "coordinate". Modify the definition of Interchange Authority in the Functional Model as follows: Authorizes <i>Coordinates and communicates</i> implementation of valid and balanced Interchange Schedules between Balancing Authority Areas, and ensures Interchange <i>is</i> Transactions are properly identified for reliability assessment purposes. In addition, the tasks of the IA should be modified to more closely reflect this definition as outlined in Appendix A. The relationship of the IA with other functional entities should be modified as shown in Appendix B.</p>		<p>Done. The Working Group incorporated the changes that the Interchange Subcommittee and Interchange Authority Implementation Task Force requested.</p>

Recommendations from FMRSTF and IAITF

<i>Item</i>	<i>Comments and Action from First FMWG Meeting</i>	<i>As of November 3, 2005</i>
<p>c. Including IA tasks into the BA. Modify the Functional Model (as identified in Appendix A & B) to include the revised IA tasks under the Balancing Authority. (Note: This may not require a wholesale change to the Functional Model. Mapping of tasks to the BA can be done with an explanatory note without removing the IA from the Functional Model.)</p>	<p>Need to use caution here.</p>	<p>Done. The Working Group revised the BA to enable the “daisy-chain” BA-to-BA scheduling.</p>
<p>d. Separating the IA. The current interchange functions bundled with the balancing authority in the new standards should be separated and made to apply to the interchange authority (coordinator) when these standards are next revised. (Rec 16)</p>	<p>From the FMRSTF, and would accommodate the “Mid-Term” recommendations of the IAITF.</p>	<p>The Interchange Subcommittee needs to consider this as it revises the standards on interchange scheduling.</p>
<p>5. Planning Authority. The planning authority in the Functional Model should be revised to be named an “interconnection planning coordinator”. The definition, tasks and interrelationships of the interconnection planning coordinator, transmission planner, resource planner, and transmission owner should be modified as necessary to recognize that transmission planners, resource planners, and transmission owners have certain authorities in the</p>	<p>Action: Consider changes to the Planning Authority. Also, review Technical Document for additional clarifying descriptions. <u>Review how the PA, TP, and RP fit together.</u> <u>Decide on name change.</u></p>	<p>Done. The Working Group agreed to change the name to the Planning Coordinator, and has reworked the PC, TP, and RP tasks and interrelationships.</p>

Recommendations from FMRSTF and IAITF

<i>Item</i>	<i>Comments and Action from First FMWG Meeting</i>	<i>As of November 3, 2005</i>
<p>planning process. The interconnection planning coordinator description should be revised to emphasize the wide-area oversight, coordination, and integration of transmission and resource plans across systems. (Rec 8)</p>		
Regional Reliability Plan Outlines		
<p>6. Regional reliability plans. Regional reliability organizations should be tasked to document how reliability responsibilities are assigned and integrated within the region to achieve reliable planning and operation of bulk electric systems. Initially these plans should include balancing authorities, transmission authorities, interconnection reliability authorities, interconnection planning coordinators, transmission planners, resource planners, and transmission owners. These plans should identify the interrelationships between the various responsible entities providing these functions. Regional reliability process plans need to be consistent and meet certain criteria necessary for interconnection reliability, but also should be flexible in meeting the regional reliability and organizational needs. Identification of responsible entities within the plans should evolve over time to remain current with actual</p>	<p>Action: Develop Regional Reliability Process Plan requirements and specifications. We'll need to pick up the work of the RCPTF. Intent is to explain how the tasks are covered and coordinated in the Regions.</p>	<p>Working Group is discussing this.</p>

Recommendations from FMRSTF and IAITF

<i>Item</i>	<i>Comments and Action from First FMWG Meeting</i>	<i>As of November 3, 2005</i>
<p>authorities, responsibilities and relationships. These plans should subsume previous regional reliability plans focused on reliability coordinators, as well as efforts to develop responsible entity templates. The plans should be maintained current and should be periodically reported. (Rec 7)</p>		
<p>7. Boundary constraints. Mandatory boundary constraints between responsible entities should be set at the minimum threshold necessary for the reliability of the interconnections. Otherwise there should be no restrictions on boundary conditions between responsible entities. These criteria should be set through an open process and adopted into organization certification standards. (Rec 9)</p>	<p>Need to define in the Organization Certification standards, and address in the Regional Reliability process plan outlines.</p>	<p>Will be covered in the Regional Reliability Plans.</p>
<p>8. Accountability linked to assets. Accountability for operating and planning tasks should be clearly linked to bulk electric system assets. Each bulk electric system asset should be addressed by a single responsible entity for each function. These accountabilities should be documented in the regional reliability process plans. (Rec 10)</p>	<p>Address in the Regional Reliability <u>Process</u> Plans outlines. Links to #7</p>	<p>Will be covered in the Regional Reliability Plans.</p>

Recommendations from FMRSCF and IAITF

<i>Item</i>	<i>Comments and Action from First FMWG Meeting</i>	<i>As of November 3, 2005</i>
Compliance and Accountability		
<p>9. Accountability. Responsible entities should be held accountable for compliance with reliability standards. Compliance monitoring should be measured against the reliability standards. This should not preclude using the Functional Model as a guide for identifying entities that should be accountable for meeting reliability standards. All responsible entities for a particular function must be held to a consistent set of performance criteria with no regard to the size of the responsibility area or facilities within that area. (Rec 3)</p>	<p>Is this the current direction of the compliance program? FMWG+ generally agrees with these recommendations Action: Discuss this with the VP of Compliance.</p>	<p>NERC staff has had these discussions and it appears that the compliance program is based on the reliability standards. However, the certification standards as currently drafted, are <i>closely related to the standards</i>, but may include additional requirements. The NERC staff has discussed this with the SAC, who has formed a SAR drafting team to review the industry comments on the draft certification standards.</p>
<p>a. Goals. A goal is that all responsible entities should be accountable for compliance with all reliability standards applicable to that responsible entity. (Rec 11)</p>	<p>Recommendation 3 makes a point that compliance is measured by standards, not by the FM. Recommendation 11 gets at the question of whether you have to comply with all standards as, for instance, a TOP or just the tasks that you perform. The FMRSCF recommends you need to meet all standards for a TOP. They also apply this goal to all entities, e.g. LSE, PA, TP, etc.</p>	
<p>b. Certification. All entities having primary responsibility for reliable operation of the bulk electric systems should be certified in accordance with an associated organization certification standard. Initially, the interconnection reliability authority, the balancing</p>	<p>Action: Discuss this with the VP of Compliance.</p>	

Recommendations from FMRSTF and IAITF

<i>Item</i>	<i>Comments and Action from First FMWG Meeting</i>	<i>As of November 3, 2005</i>
<p>authority, and the transmission authority should be certified. Each such responsible entity should be certified to have the capability to perform all requirements assigned to the function(s) it serves, as defined in the certification standards. (Rec 12)</p>		
<p>10. Documenting delegation. Delegation or division of responsibilities among responsible entities should be documented in writing, such as through formal agreements, market protocols, interconnection and service agreements, procedures, standing orders, etc. (Rec 13)</p>	<p>Where does this belong? Standards? Organization certification (based on standards)?</p> <p>Belongs in Regional Reliability Process Plans and in the certification requirements for the RA, BA, TA</p>	<p>The Working Group is developing a set of Delegation Principles.</p>
<p>11. Reliability relevance thresholds. Reliability relevance thresholds should be considered as standards are developed, as well as in compliance monitoring. Assigning applicability and a burden for compliance monitoring should have a positive benefit for bulk electric system reliability. When possible, any applicability thresholds should be documented in the standards themselves. (Rec 14)</p>	<p>Compliance measures?</p> <p>Discuss with Dave Hilt.</p>	<p>The Working Group asked the Regional Councils to comment on this as part of the Regional Reliability Plan Guideline.</p>

Item 8. Next Meeting

Action

1. Prepare "to-do" list for the next meeting
2. Decide on next meeting dates and locations.

Suggested Things To Do

1. Prepare Version 3 for PC and OC approval.
 - a. Decide on how we'll present these to the committees. Joint sessions? Individual committees? Both?
2. Prepare Technical Document and decide on approval.
3. Prepare Regional Reliability Organization Guideline document for PC and OC approval.
4. Decide on where Delegation Principles go and how they are approved.
5. Set up timelines for all these items.