

NERC

NORTH AMERICAN ELECTRIC
RELIABILITY CORPORATION

ERO Enterprise Registration Procedure

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RELIABILITY | RESILIENCE | SECURITY



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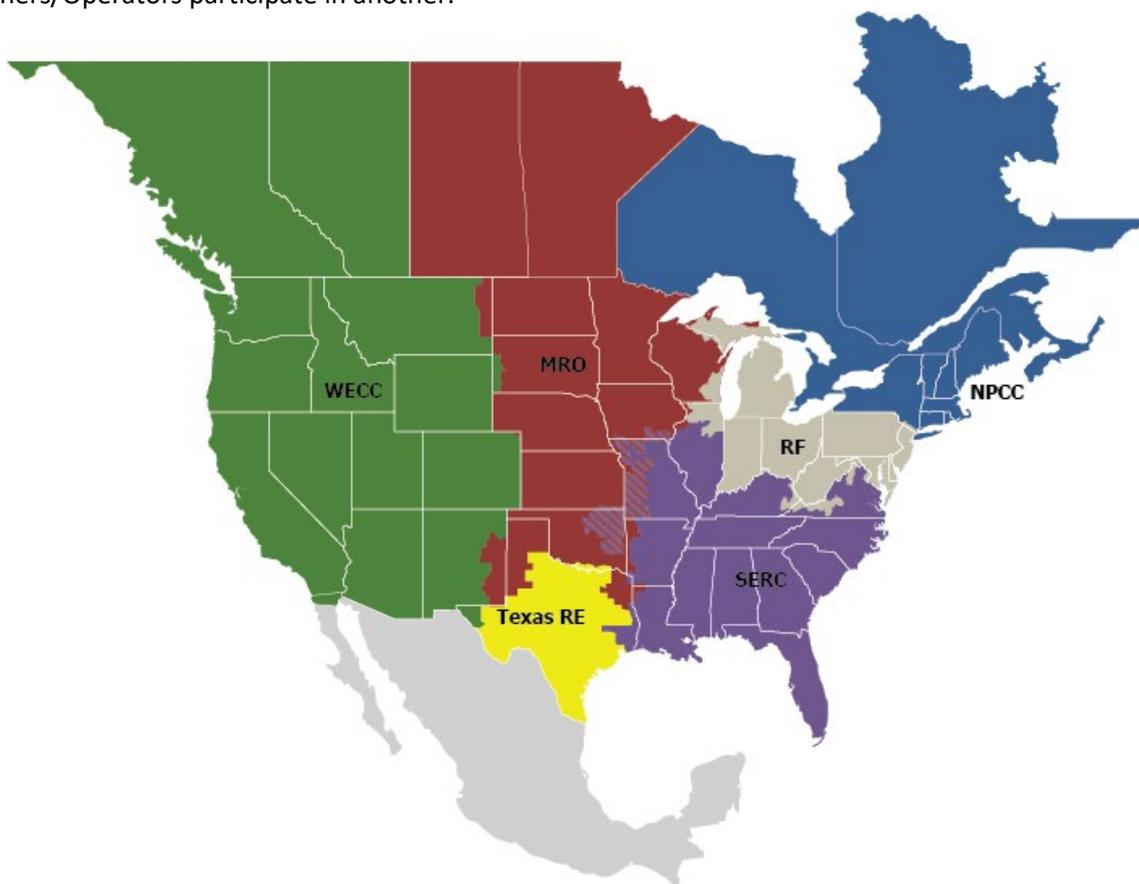
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Preface

Electricity is a key component of the fabric of modern society and the Electric Reliability Organization (ERO) Enterprise serves to strengthen that fabric. The vision for the ERO Enterprise, which is comprised of the North American Electric Reliability Corporation (NERC) and the six Regional Entities (REs), is a highly reliable and secure North American bulk power system (BPS). Our mission is to assure the effective and efficient reduction of risks to the reliability and security of the grid.

Reliability | Resilience | Security
Because nearly 400 million citizens in North America are counting on us

The North American BPS is made up of six RE boundaries as shown in the map and corresponding table below. The multicolored area denotes overlap as some load-serving entities participate in one RE while associated Transmission Owners/Operators participate in another.



MRO	Midwest Reliability Organization
NPCC	Northeast Power Coordinating Council
RF	ReliabilityFirst
SERC	SERC Reliability Corporation
Texas RE	Texas Reliability Entity
WECC	WECC

Introduction

The purpose of this document is to help new entities who are candidates for registration with NERC understand key terminology, how the Registration process works, and initial requirements for the entities, NERC, and REs. NERC together with the six REs form the ERO Enterprise. In accordance with the regional delegation agreement (RDA), the REs have been assigned the responsibility of initiating the process for registering entities functioning as owners, operators, and users of the BPS. The document also contains information regarding certain registration processes that are relevant to existing registered entities.

Organizations that are registered are included on the NERC Compliance Registry (NCR) and are responsible for knowing the content of and complying with all applicable reliability standards.

Registered entities are not and do not become members of NERC or a RE by virtue of being listed on the NCR. Membership in NERC is governed by Article II of NERC's bylaws; membership in a RE or regional reliability organization is governed by that entity's bylaws or rules.

The NERC organization registration procedures and criteria are incorporated into the NERC Rules of Procedures (ROP) as Section 500, Appendix 5A, *Organization Registration and Certification Manual*, and Appendix 5B, *Statement of Compliance Registry Criteria*.

Chapter 1: Registration Related Terminology

This chapter contains a list of some common registration related terminology used in the NERC registration process.

Activation

Adding a new registered entity on the NCR or adding additional functions to an existing registered entity's NCR ID indicates that the entity is subject to mandatory compliance with the applicable NERC Reliability Standards that have been approved by the Federal Energy Regulatory Commission (FERC or Commission) for all applicable functions.

Alternate Compliance Contact (ACC)

Employee identified by the registered entity who will be cc'd on all electronic compliance communication between the ERO Enterprise and the registered entity.

Centralized Organization Registration ERO System (CORES)

CORES is a consolidated application for collecting registration information for both new and currently registered entities. CORES provides a single location for registered entities to review registration data, update registration data, and enter new registration data.

Coordinated Functional Registration (CFR)

CFR means where two or more entities (parties) agree in writing upon a division of compliance responsibility among the parties for one or more Reliability Standard(s) applicable to a particular function and/or for one or more Requirement(s)/sub Requirement(s) within particular Reliability Standard(s).

Deactivation

Deactivation, as used in Appendix 5A with respect to the registration processes, refers to removal of an entity from the NCR for a specific functional category. As a result of deactivation, the entity is no longer subject to any prospective compliance obligations with respect to Reliability Standards applicable to that functional category.

Deregistration

A deregistration from the NCR indicates that an entity is no longer subject to mandatory compliance for all of its registered functions.

ERO Portal

An ERO Portal account is necessary to access certain NERC applications, such as CORES. In order to access the ERO Portal, users must first register for a portal account with NERC. New users can request an account for the ERO Portal and set up the multi-factor authentication required for access. NERC provides additional guidance on using the ERO Portal in the ERO Portal End User Guide: Portal Users.

Effective Registration Date

The date that a registered entity is subject to mandatory compliance with the applicable NERC Reliability Standards.

Joint Registration Organization (JRO)

JRO means when two or more entities (parties) agree in writing upon a division of compliance responsibility where an entity registers in the Compliance Registry for one or more function type(s) for itself and on behalf of one or more other parties to such agreement for function type(s) for which such parties would otherwise be required to register.

Multi-Region Registered Entity (MRRE)

A registered entity—or two or more registered entities that are corporate affiliates—that performs Bulk Electric System (BES) functions in two or more REs.¹

NERC Compliance Registry (NCR)

NCR, Compliance Registry, or NCR means a list that is maintained by NERC pursuant to Section 500 of the NERC ROP and Appendix 5B, the NERC Statement of Compliance Registry Criteria of the owners, operators, and users of the BPS as well as the entities registered as their designees that perform one or more functions in support of reliability of the BPS and that are required to comply with one or more requirements of Reliability Standards.

NERC Identification Number (NCR ID)

NERC Identification Number or NCR ID means a number given to NERC registered entities that will be used to identify the entity for certain NERC activities.

NERC Notification Letter

This is a letter sent electronically that provides notice in accordance with Section 500 of the NERC ROP and confirms an entity's registration status.

Open Enforcement Action (OEA)

This is any outstanding noncompliance currently undergoing review by the applicable compliance enforcement authority or that has not as yet resolved or completed its mitigation.

Primary Compliance Contact (PCC)

This is an employee identified by the registered entity who will be used for all compliance communication between the ERO Enterprise and the registered entity.

Primary Compliance Officer (PCO)

This refers to an employee identified by the registered entity at the officer level responsible for Reliability Standards compliance activity within the organization. This contact will receive key compliance communications from the ERO Enterprise. Examples are Notices of Alleged Violation, Notice of Regional Confirmation of Violation, and escalated requests from the ERO Enterprise for data, information, or other reports (including mitigation plans) by the required due date, pursuant to Attachment 1 of the Uniform Compliance Monitoring and Enforcement Program (Appendix 4C to the ROP).

Reactivation

Reactivation refers to reregistration pursuant to the NERC ROP Section 500 and Appendices 5A and 5B of an entity to the NCR for a specific functional category or the revocation of, or additions to, a subset list of Reliability Standards (which specifies Reliability Standards and Appendix 2 to the NERC ROP 18 Effective: January 19, 2021 may specify Requirements/sub-Requirements) that has been granted to an entity. Reactivation may be initiated by NERC, a RE or an entity with respect to such entity's own functional categories or subset list of Reliability Standards (which specifies Reliability Standards and may specify requirements/sub-requirements).

Registered Entity

Registered entity means an owner, operator, or user of the BPS, or the entity registered as its designee for the purpose of compliance that is included in the NCR.

¹ Refer to the [ERO Enterprise Guide for the Multi-Region Registered Entity Coordinated Oversight Program](#) for more information about becoming a MRRE and the Coordinated Oversight Program.

Registration

Registration or organization registration means the processes undertaken by NERC and REs to identify which entities are responsible for reliability functions within the RE's areas.

Reliability Standard

Reliability Standard means a requirement, approved by the United States Federal Energy Regulatory Commission under Section 215 of the Federal Power Act, or approved or recognized by an applicable governmental authority in other jurisdictions, to provide for reliable operation of the BPS. The term includes requirements for the operation of existing Bulk Appendix 2 to the NERC ROP.

Requirement

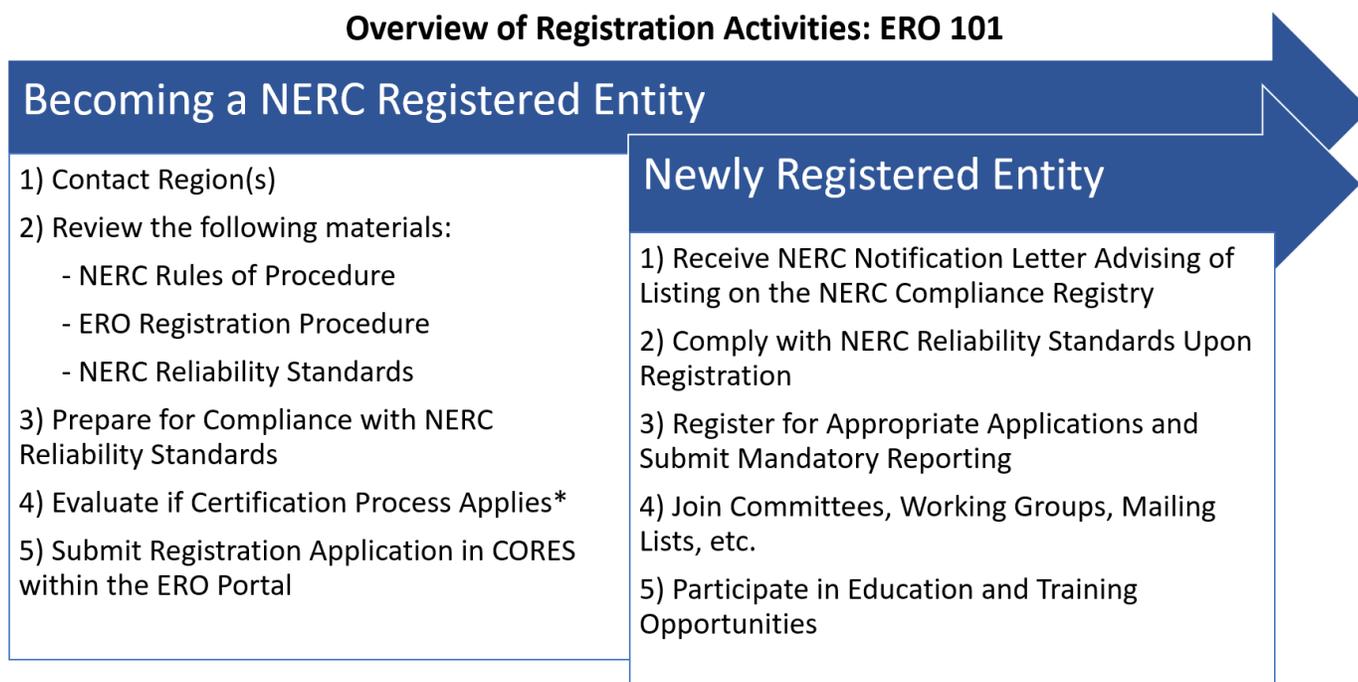
Requirement means an explicit statement in a Reliability Standard that identifies the functional entity responsible, the action or outcome that must be achieved, any conditions achieving the action or outcome, and the reliability-related benefit of the action or outcome. Each requirement shall be a statement with which compliance is mandatory.

Chapter 2: Overview for Becoming a New Registered Entity

This chapter is intended to provide an overview of the initiation of the registration process to assist new entities with becoming a NERC registered entity.

Specific requirements and criteria of the Organization Registration Program are embodied in Section 500 (Organization Registration and Certification) and Appendices 5A and 5B of the FERC-approved NERC ROP.

The chart below shows a framework of the steps that need to be completed to start the registration process and tasks an entity should take shortly after the registration process has been completed.



* Future Balancing Authorities, Reliability Coordinators, and Transmission Operators need to complete the certification process prior to registering for these specific functions.

The first step to becoming a NERC registered entity is to contact your applicable RE about the registry criteria and the registration process.

Regional Entity | Registration Website | Email Address

Midwest Reliability Organization (MRO) | [Website](#) | [Contact by Email](#)

Northeast Power Coordinating Council (NPCC) | [Website](#) | [Contact by Email](#)

Reliability First (RF) | [Website](#) | [Contact by Email](#)

SERC Reliability Corporation (SERC) | [Website](#) | [Contact by Email](#)

Texas Reliability Entity (Texas RE) | [Website](#) | [Contact by Email](#)

Western Electricity Coordinating Council (WECC) | [Website](#) | [Contact by Email](#)

Registering for an ERO Portal Account

An ERO Portal account is required to access certain NERC applications, such as CORES, CFR, the Misoperation Information and Data Analysis System (MIDAS), NERC membership, and Align. As a result, it is important that all users who need access to any of these applications set up an ERO Portal account.

To set up an ERO Portal account follow these steps:

- Navigate to <https://eroportal.nerc.net>
- Select “Register” in the upper left corner
- Complete the registration form and click “Submit”

Users are also required to complete the steps for multi-factor authentication that automatically appear when attempting to log into the ERO Portal for the first time. If you cannot login successfully after attempting to access the ERO Portal with your existing credentials, contact the ERO Help Desk (<https://support.nerc.net/>) by completing and submitting a ticket for assistance.

Submitting a Registration Application in CORES

CORES was established to provide consistency and alignment across the ERO for registration activities. CORES enables entities to manage their registration information, contact information, and functional relationships from one application.

All entities seeking to submit a new registration will need to register for an [ERO Portal](#) account to access CORES. Entities are also required to complete the steps for multi-factor authentication that automatically appear when attempting to log into the ERO Portal for the first time.

To ensure timely updates to the NCR, it is recommended that entities contact their RE as soon as possible prior to submitting a new entity registration request. Generally, a minimum of 45 days prior to the requested effective registration date is needed to allow REs sufficient time for review and scheduling.

Please note, for those requesting to be registered as a BA, RC or TOP, Certification is also required and, it is therefore recommended that entities contact their respective Regional Entity, one (1) year in advance of their proposed effective registration date, at a minimum.

To obtain more information on how to submit an application in CORES, review the [CORES Video Library](#) or the [Centralized Organization Registration ERO System \(CORES\) End User Guide](#).

After a registration application is submitted through CORES, the applicable RE will review the request. The RE may request additional information or supporting documentation to make a registration decision.

Once the RE makes a registration decision, the entity will be notified of the status of their registration application by CORES email. The RE will forward their registration recommendation to NERC for final review and approval.

Listing on the NERC Compliance Registry

Once the registration application is accepted by the RE and NERC in CORES, NERC will issue a NERC Notification Letter advising of Listing on the “NERC Compliance Registry” that will include your entity’s NCR ID number, the registration effective date, and states that all registered entities are subject to compliance with all applicable NERC Reliability Standards. The current NCR is posted on the [NERC website](#).

Registration Effective Date Associated with New BES elements

The Registration effective date associated with new generation and transmission elements² is as follows:

New Generation Resources

The effective registration date for new or existing Generator Owners and Generation Operators with new BES generation resources³ (per the NERC BES definition, including its Inclusions I2, I3, and I4) shall be effective upon the commercial operation date (COD) of the BES generation resource.⁴ The COD is defined as the date after which all initial testing and commissioning has been completed and is the initiation date on which the Generator Owner and Generation Operators can start producing electricity for sale.⁵

Generation resources that initiate commercial operations in stages or phases are required to register when the BES generation resources (synchronous generators, wind turbines, solar PV, battery storage, etc.) achieves commercial operation for an aggregate amount of generating resource(s) (gross nameplate rating) that is greater than the applicable threshold in the BES definition.⁶ The entity should initiate the registration process when this occurs so that the registration effective date coincides with the COD for that phase of the generation resource that exceeds the applicable threshold. Upon the registration effective date (i.e., COD), all BES generating resources are expected to be 100% compliant with all applicable Reliability Standards.

New Transmission Elements

The registration effective date for new or existing Transmission Owners (TO) with new BES transmission elements (per the NERC BES definition) shall be effective after testing and commissioning has been completed and the BES element is placed into service.

² Refer to the [Bulk Electric System Definition Reference Document](#) for guidance on how to apply the BES definition to generation and transmission assets.

³ Refer to Appendix 5A, Section III (A) (11) regarding an entity's notice obligations to the RE and/or NERC about changes (such as adding new assets) that effect the entity's responsibilities with respect to the Reliability Standards.

⁴ Note that in all instances the NERC ROP controls. See Section 501(1.3.1) (stating "NERC shall notify each organization that it is on the NCR. The Registered Entity is responsible for compliance with all the Reliability Standards applicable to the functions for which it is registered from the time it receives the Registration notification from NERC."); See also, Appendix 5B, Summary, Pg. 1 (providing "NERC and Regional Entities will not monitor nor hold those not in the Compliance Registry responsible for compliance with the Reliability Standards.").

⁵ This excludes the sale of test power during initial testing.

⁶ Any additional stages/phases of generation to the existing generating resource should be submitted to the RE.

Chapter 3: Options for an Existing Registered Entity

Registration Alternatives for Existing⁷ Registered Entities

The following programs are alternative options that entities can use to meet their registration responsibilities. None of these options are mandatory and entities should consider whether the options are relevant and applicable.

Coordinated Functional Registration

Details regarding the registration-related requirements and steps to be taken when you currently are or are considering becoming a party to a CFR can be found at the following:

- **Section 508 of the NERC ROP** describes provisions related to CFR agreements.
- The **Entity Registration CFR End User Guide** provides detailed instructions for entities to create and maintain CFRs using the ERO Portal CFR tool.
- Additionally, the CORES Video Library and the **CORES End User Guide** provide an overview of the CFR process.
- NERC maintains a **CFR Member Listing** on its website.

The applicable RE will accept the CFR within CORES once the RE receives all requested documentation that includes a CFR matrix that clearly delineates compliance responsibility for each standard/requirement that is applicable to that function for that CFR. NERC or the RE may request clarification of any list submitted to it that identifies the compliance responsibilities of the CFR. A confirming email is generated upon regional acceptance of the CFR.

Once NERC receives notification from the RE that the CFR Matrix has been accepted in CORES, a *Notice of Listing of a Coordinated Functional Registration on the NERC Compliance Registry* letter is generated and provided to the RE to confirm accuracy. Once confirmed by the Regional CFR Administrator, an email will be sent to the Lead Registered Entity's POC, Entity Participant's primary contacts, all participating entity PCCs (including that of the lead entity), all regional users of the impacted regions, and all NERC users.

Joint Registration Organization (JRO)

Details regarding the registration-related requirements and steps to be taken when you currently are or are considering becoming a party to a JRO can be found at the following:

- **Section 507 of the NERC ROP** describes provisions related to JRO agreements.
- The CORES Video Library and the **Centralized Organization Registration ERO System (CORES) End User Guide** provide an overview of the JRO process.
- NERC maintains a **JRO Member Listing** on its website.

The applicable RE will accept the JRO within CORES once the RE receives all requested documentation that includes a copy of the JRO agreement. NERC or the RE may request clarification of any JRO submission.

Once NERC receives notification from the RE that the JRO agreement has been accepted in CORES, a Notice of Listing of a Joint Registration Organization on the NCR letter is generated and provided to the RE to confirm accuracy. Once confirmed, it is sent to the JRO entity via email.

Third-Party Agreements

A registered entity may delegate the performance of a task to another entity, including a non-registered party, using

⁷ In some cases, these processes can also be applicable to an entity becoming a newly registered entity

a third-party agreement. However, the registered entity may not delegate its responsibility for ensuring the task is completed. In all cases, NERC and the REs will hold the registered entity accountable for compliance responsibilities and violations thereof. Third-party written agreements are determined on a case by case basis between the registered entity and the third-party.

NERC and the REs have summarized obligations retained by the registered entity when entering third-party agreements as follows:

- If a registered entity delegates tasks to a non-registered third-party entity, the registered entity remains solely responsible for compliance and is accountable for violations even with respect to tasks performed by the non-registered third-party on its behalf.
- To maintain a reasonable understanding of compliance and transparency, the registered entity should put mechanisms in place that allow it to do the following:
 - Ensure that non-registered entities performing reliability tasks on its behalf comply with the applicable NERC Reliability Standard requirements
 - Ensure that non-registered entities provide evidence of such compliance, at a minimum, upon request to the registered entity or compliance enforcement authority (This may arise with respect to, but is not limited to, audits, compliance investigations, or other compliance monitoring activities and could include on-site visits to the non-registered entity locations.)
 - Provide self-certifications, self-reports, or other information to the compliance enforcement authority, as required by the Compliance Monitoring and Enforcement Program in regards to tasks performed by non-registered entities
- The registered entity should notify NERC and REs of any registrations that involve a third-party entity performing reliability tasks on its behalf for the ERO Enterprise's awareness.

Processes for Changing an Existing Registration

The process for making changes to an existing registration is similar to the process applicable to an entity that is applying to become a new registered entity as described in the section above. Entities should contact their applicable RE before making any registration change requests in CORES.

Deactivating a Function(s)

An existing registered entity may request the deactivation of a function(s) it is no longer performing or will not be performing in the near future. The RE will review the validity of the request and also ensure no OEAs applicable to the deactivating function exist before approving or rejecting the change.

Once these requirements have been satisfied the "Notice of Deactivation on the NERC Compliance Registry" letter is generated and sent via email (with cc to the RE) to the entity's PCC.

Deregistration

An existing registered entity may request deregistration if it is no longer performing or will not be performing in the near future all of its prior registered functions. The RE will review the validity of the request and also ensure no OEAs exist before approving or rejecting the change.

Once these requirements have been satisfied the "Notice of Deregistration on the NERC Compliance Registry" letter is generated and sent via email (with cc to the RE) to the entity's PCC.

Name Change

NERC allows entity name changes without reregistration.

Once the name change data has been received, the “Notice of Entity Name Change on the NERC Compliance Registry” letter is generated and sent via email (with cc to the RE) to the entity PCC.

Activation of New Function(s)

An existing entity is required to register for a new function type⁸ it will be performing in the near future. The RE will review the validity of the request. If the new function is Balancing Authority (BA), Reliability Coordinator (RC), or Transmission Operator (TOP), NERC will confirm that this entity has been certified for the appropriate function. If the entity is not certified for the new function, NERC notifies the RE’s certification contact and RE’s registration contact, advising that the certification process must be completed prior to registration.

Upon receiving registration data for the addition of a new Function(s) for a previously registered entity, the notice of functional registration change on NCR letter is generated and sent via email (with cc to the RE) to the entity PCC.

The effective registration date is based on the function type and circumstances of the registration request and is stated in the NERC Notification letter. The effective registration date is the date that a registered entity is subject to mandatory compliance with applicable NERC Reliability Standards.

Consolidation of Registrations under Common NERC Compliance Registration (NCR)

Corporate entities with multiple existing registered entities under their governance may consolidate these NCRs under a single common NCR if desired. The entity should develop a list of all the registrations that will be consolidated under a common NCR. This list should include the following:

- The name of each registered entity
- Each NCR number
- The effective date of each registration and function
- Determination if there are any open enforcement actions (OEA) for each of the registrations.

If the registered entity desires to consolidate all their facilities under the one registration at once, this may be done regardless of OEAs. However, any registrations with OEAs shall remain on the NCR until the OEAs have been processed. Once the OEAs have been resolved, the registration can be closed effective the date of the consolidation.

⁸ Function types are referred to as “Entity Scopes” in CORES.

Appendix A: Sale or Transfer of Assets

Registered entities must be aware of registration and compliance responsibilities when engaging in existing BES asset transactions that involve the transfer of BES assets from one entity (seller) to another entity (buyer). These entities must know which transactions must be reported to applicable REs. The change of ownership or control of such BES assets must be identified due to the possible impact to a registered entity's compliance responsibilities with NERC Reliability Standards or the entity's registration on the NERC Compliance Registry (NCR).

General Guidance for Sellers and Buyers of Existing Assets

Registry Changes

When a sale or transfer of BES assets occurs such that the previous owner no longer performs any registered functions, the seller's registration may be deactivated for the applicable function(s) following the deactivation procedure. The new owner's registration is added or modified on the NCR following the registration procedure, including a new NCR ID if needed.

Seller

A seller is encouraged to coordinate with the buyer so that the buyer is properly registered as of the intended date of the transfer. The seller will remain responsible for compliance with relevant standards that may relate to the particular asset until it is deactivated from the NCR for the applicable function(s) and the buyer is subject to compliance responsibility. The seller will remain on the NCR until any outstanding settlement and enforcement issues associated with the asset in question are resolved.

Buyer

When a transfer of asset(s) occurs and the buyer is registered for a function related to that asset, the buyer becomes responsible for compliance with all applicable standards relevant to the asset on the date of the asset transfer. The buyer may use its existing NCR ID and add the newly acquired assets to the scope of its existing registration. In this case, a change to the NCR is not required, but changes to the entity profile may be required in CORES, such as compliance contacts and upstream holding company, as appropriate. Contact your RE regarding what is the appropriate NCR ID for the newly acquired assets.

JRO/CFR

Buyers and sellers must make the applicable and necessary changes to any existing JRO or CFR agreements or enter into a new JRO or CFR that incorporates the transferred asset.

For more information relative to compliance implications of outstanding OEAs related to the assets being purchased or consolidated, contact your RE.

Appendix B: NERC-led Registration Review Panel

If an entity does not agree with a registration determination, it may request a NERC-led registration review panel evaluation in accordance with Section III (D) of Appendix 5A. Entities should seek a determination from the NERC-led registration review panel prior to making an appeal in accordance with NERC ROP Section 500 and Section VI of Appendix 5A.

For more information on the NERC-led registration review panel, refer to Section III (D) of Appendix 5A. For more information on the registration appeals process, refer to Section VI of Appendix 5A.

Determination of Material Impact

The criteria for the determination of material impact on the BES, as described in Appendix 5B, is a non-exclusive list of factors referred to as the “materiality test.”

There are additional factors that may be considered when determining material impact, including, but not limited to, the following:

- Does the registered entity have unique characteristics in relation to the electrical characteristics of the system, the system topology, critical Loads or facilities, or facilities associated with a major metropolitan area (e.g., New York City, Washington D.C., etc.) that could potentially have an adverse reliability impact resulting from intentional or inadvertent operations, misoperations, or malicious use on the entity’s assets?
- Does the entity have real-time authoritative control of BES Elements?
- Will the aggregate effect of eliminating functional registrations and/or reducing the compliance obligations (i.e., subset list of Standards/Requirements) for an entity within a portion of the BES result in a potential adverse reliability impact to that portion of the BES (e.g., where multiple entities considered individually are not necessary for the reliable operation of the system, but in aggregate the entities are material)?
- Will the aggregate effect of eliminating functional registrations and/or reducing the compliance obligations (i.e., subset list of standards/requirements) for an entity across the BES result in a potential adverse reliability impact to the BES (e.g., where all or many of a particular functional entity type would affect the reliable operation of the system during a wide-area disturbance)?
- Is the registered entity a participant in any of the following:
 - JRO agreement
 - CFR agreement
 - Operating, delegation, or third-party agreements
- Is the registered entity currently registered under other functional registrations?
- Has the submitting entity received and provided supporting letters/data (agreement or disagreement) from the applicable RE(s), RC, BA, planning authority, and TOP that have (or will have upon registration of the entity) the entity whose registration status is at issue within their respective scope of responsibility?

Appendix C: Functional Mapping Requirements

The CORES application has an area called functional mapping that is used to track the functional relationships between registered entities. The ERO Enterprise performed a review of functional relationships identified by the NERC ROP, certain Reliability Standards, and important entity relationships. A list of functional mapping relationships that should be tracked in CORES was developed. This list is not all-inclusive of all functional relationships.

The table below represents the functional mapping data the ERO Enterprise is asking to be provided in CORES. For example, a TOP will submit mapping data in CORES indicating their BA and RC. In addition, a TOP will validate data entered from GOs, TOs, DPs and GOPs. There is also a color key that shows the purpose of the functional mapping requirement.

		Entities required to validate functional mapping data							Color Key
		BA	GOP	PC	RC	TO	TOP	TP	
Entities required to submit data for functional mapping	BA				X				ROP
	DP	X		X	X		X		NERC Standards
	DPUF			X					Important Relationships
	GO	X	X	X	X	X	X	X	
	GOP	X			X		X		
	PC				X				
	TO			X	X		X	X	
	TOP	X			X				
	TP			X	X				

Functional Mapping Identified in the ROP

The ROP requires all BAs and TOPs to be under the responsibility of one RC. Therefore, BAs and TOPs are asked to identify their RC.

The ROP requires all transmission facilities be under the responsibility of one Transmission Planner (TP), Planning Coordinator (PC), and TOP. Therefore, TOs are asked to identify their respective TP, PC, and TOP.

The ROP requires all Loads and generators be under the responsibility of one BA. Therefore, Distribution Providers (DPs) representing loads and Generator Owners representing generators are asked to identify their associated BA.

Functional Mapping Identified through Reliability Standards

DP – PC, DP UFLS - PC

PCs are required by NERC Standard PRC-006 to develop an underfrequency load shedding (UFLS) plan and notify UFLS entities (DPs and TOs) of their obligations. TOs are already asked to map to their PCs per the ROP requirements. Therefore, DPs and DP-UFLS are the only entities asked to identify their PC per NERC Standard PRC-006.

GO –TOP, DP - TOP

TOPs are required by TOP-003 to maintain a reliability data specification and distribute the specification to certain entities, including DPs and Generation Owners (GOs), who are required to satisfy the obligations of the TOP's data specification. Therefore, GOs and DPs are requested to identify their TOP.

TP – PC, GO - TP

TPs are required by NERC Reliability Standard TPL-001 to maintain system models and coordinate planning assessments with their PC. Therefore, the TP is asked to identify their PC. Also, the TP is required by NERC Reliability Standard MOD-032 to establish modeling data requirements and reporting procedures for applicable entities, such as GOs. Therefore, all GOs are asked to identify their TP.

GO–TO

Every Generator has an interconnection with the Transmission System owned by the TO. To establish the interconnection, the GO must go through the interconnection agreement process and establish the relationship with the TO to ensure the facility ratings, Protection System Settings, and operating procedures are established in coordination and continue to be coordinated after any changes. In the absence of this relationship, coordination could be affected, leading to potential reliability and security issues within the interconnection.

There are several NERC Reliability Standards that require the relationship between GO and TO to be established, including FAC-008 which requires each GO to provide Facility Ratings to its associated TO.

GO–PC

A Planning Coordinator is responsible for coordinating and integrating transmission facilities and service plans, resource plans, and Protection Systems. To perform its function, a PC requires modeling and planning data from the GOs. In the absence of this information, the PC may use old data or no data, which can cause gaps in planned system behaviors from actual system behaviors. This can lead to reliability and security issues, specifically in the operating horizons and in short-term planning horizons.

There are several NERC Reliability Standards that require the relationship between GO and PC to be established. FAC-002 requires PCs to study the impact of interconnecting new generation and requires the GO to coordinate and cooperate on studies with its PC. FAC-008 requires the GO to provide Facility Ratings to its associated PC. MOD-032 requires GOs to provide modeling data to PCs. PRC-002 and PRC-023 also require GOs to provide data to PCs.

GOP-BA

A BA is responsible for resource plans ahead of time, maintains load-interchange-generation balance within its area, and supports Interconnection Frequency in real-time. To perform this function effectively, a BA is required to communicate with the GOPs. It is important for a BA to identify and have a communication channel established with all GOPs within its Balancing Area for communicating during emergencies.

There are several NERC Reliability Standards that require the relationship between GOP and BA to be established. COM-001 requires GOPs to have Interpersonal Communications capability with their BAs. TOP-001 requires GOPs to coordinate with Operating Instructions from the BA.

GOP-TOP

A GOP is responsible for operating the generating Facility(ies) and supplying energy and Interconnected Operations Services. Similarly, a TOP is responsible for the reliability of its local transmission system and operates or directs the operations of the transmission Facilities. Since the Generation and Transmission Facilities are interconnected, it is important for these two functions to collaborate to maintain system voltage and ensure the BES Elements are appropriately operated. There are several instances (e.g., voltage schedule, operating instructions, blackstart operations) in which a TOP and GOP are required to establish communication.

There are several NERC Reliability Standards that require the relationship between GOP and TOP to be established. GOPs are required to coordinate with TOPs on Operating Instructions under TOP-001 and Voltage Schedules under VAR-001.

RC – GO/TO/TP/PC/DP/GOP

The RC is the highest level of authority that is responsible for the reliable operation of the BES, has the wide-area view of the BES, and has the authority to prevent or mitigate emergency operating situations in both next-day analysis and real-time operations. To perform this function, the RC must know the functions that entities are performing so it can ensure the appropriate data is collected and that a communication channel is established for mitigating emergencies and maintaining its wide-area view. The RC must also enable the calculations of Interconnection Reliability Operating Limits (IROL) considering the operating parameters of the transmission system. To do that, it must have data from TPs and PCs.

There are several NERC Reliability Standards that require the relationships between the RC and the above functions to be established.

- **GO–RC**
Under PRC-002 R11, PRC-023 R3, R4 and FAC-008, a GO is required to provide data directly to the RC either upon change or as requested by the RC for reliability reasons.
- **TO–RC**
EOP-004 requires TOs to have an event reporting plan for reporting to the RC. FAC-008 requires a TO to provide requested information to its RC. Under PRC-012, TOs that own a RAS must provide information to the RC where the RAS is located, and under PRC-023, TOs must provide relay information to the RC.
- **TP–RC**
FAC-014 requires TPs to provide System Operating Limits (SOL) to their RC. IRO-017 requires each TP to provide Planning Assessments to impacted RCs. Under TPL-007, TPs coordinate with PCs to provide data to the RC.
- **PC–RC**
MOD-033 requires each RC to provide actual system behavior to the PC for performing data validation. FAC-014 requires each RC to provide its SOLs to adjacent RCs and RCs who indicate a reliability-related need for those limits, and to the TOPs, TPs, TSPs, and PCs within its RC area. Under PRC-002, the RC is required to identify BES Elements for which Disturbance Data Recorder (DDR) data is required from generating resources and specific BES Elements.
- **DP–RC**
EOP-004 requires DPs to have an event reporting plan for reporting to the RC. IRO-001 requires DPs to comply with the RC's Operating Instructions and, if applicable, inform the RC of its inability to perform the Operating Instruction issued.
- **GOP–RC**
The RC is required to issue Operating Instructions to the GOP, and the GOP is required to follow these Operating Instructions per IRO-001 R2 and R3.

Functional Mapping: Important Relationships

Entities registered for multiple functions are asked to map to the functions they are registered to perform. For example, an entity registered for both the GO and GOP functions are asked to provide functional mapping from the GO to GOP function.

GOs not registered as GOPs under the same NCR ID are asked to map to the GOP. This relationship is not identified through the ROP or reliability standards; however, this is a critical relationship in maintaining the reliability of the BPS.

Revision History

Revision Table		
Revision Number	Date	Description
0	7/17/2013	Original Date
1	2/4/2014	Included additional wording for JRO and CFR registration processes.
2	5/12/2014	Added Revision Table
3	5/19/2014	Format Change and review content to ensure current process is reflected.
4	6/6/2014	Included language to describe processes laid out in ROP
5	6/17/2014	Replaced replace “Director of Compliance Operations” with “Senior Director of Compliance Analysis and Certification” in procedure and flowchart
6	12/14/2015	Updated Registration Group titles and incorporated Risk-Based Registration changes
7	11/5/2021	Updated to incorporate a variety of previously issued materials into a single document and to conform to revised ROP
8	2/3/2022	Revised Appendix C, Functional Mapping Requirements to include additional functional mapping