Introduction
Acting Chairman LaFleur, Commissioners, staff, and fellow panelists. My name is Tom Burgess and I am the Vice President and Director, Reliability Assessment and Performance Analysis (RAPA) at the North American Electric Reliability Corporation (NERC). The RAPA organization and associated stakeholders serve to provide a solid technical foundation for understanding reliability and performance across North America. Those insights provide a unique perspective that shapes insights, guidance and directional efforts to ensure and enhance the reliable operation of the bulk power system (BPS). The independent integrity of the assessments and performance analyses are core strengths, clearly benefiting from wide industry engagement about reliability. Support, unique expertise and engagement from industry are essential ingredients that support the overall mission. My focus today is on the efforts underway to effectuate the implementation of the new Bulk Electric System (BES) Definition as well as highlight NERC’s Risk-Based Registration (RBR) Initiative, including the status and alignment with other NERC practices and initiatives.

Bulk Electric System Definition
The BES definition is a key foundation to providing conformity across all regions and across North America, to provide clarity and certainty around the required elements of the BES, which is essential for reliable operation. The clarity and certainty of Commission Orders surrounding the BES have been instrumental to effective deployment and implementation, and timely certainty for registered entities and Regional Entities. RAPA has taken the lead, in concert with other NERC and Regional Entity staff, in putting in place business processes and tools, including IT infrastructure, to ensure a smooth transition. A communications, training and outreach campaign has been underway for quite some time and will continue as the transition is made to the new BES definition. These efforts are intended to provide stakeholders with certainty regarding the implementation of the new BES definition. The BES definition is a cornerstone of reliability, and, as such, it is an integral part of NERC’s mission as the Electric Reliability Organization (ERO) and fundamental to the Commission’s responsibilities under Section 215 of the Federal Power Act.

The revised BES definition was developed over several years through the NERC Standards Development Process for inclusion in the NERC Glossary. The BES definition provides a common platform for the application of Reliability Standards. It does not include the prior definition’s language allowing for regional discretion. Rather, it establishes a bright-line threshold that includes all facilities operated at or above 100 kV. The revised BES definition also identifies specific categories of facilities and configurations as inclusions and exclusions to the BES. Changes in classification of BES elements resulting from the implementation of the revised BES definition (e.g., newly identified inclusions or
exclusions) will be processed by NERC and the Regional Entities through the BES Notification and Exceptions Tool (BESnet) to be made available by NERC by July 1, 2014.

In order to support efficient processing of notifications and exception requests, an ERO enterprise-wide software application has been developed. The BESnet application provides industry, in concert with an overall sophisticated deployment and implementation that includes extensive reference, communication, and outreach efforts, a sound platform to achieve a uniform method to notify the Regional Entities of resulting changes to the status of elements and facilities. This tool also provides a consistent method for the Regional Entities and NERC to efficiently process exception requests.

The BESnet application is currently open for entity registration, and will begin accepting self-notifications and exception requests on July 1, 2014. Staff from NERC and the Regional Entities have been very involved in the development and testing of the application. Training on the use of the application has been provided to additional NERC and Regional Entity staff that will be responsible for using the application to process notifications and exceptions. NERC opened the BES application for initial Entity Administrator registration on May 12, 2014, and encouraged an initial “slow roll” approach to allow for steady and measured progress at the start of the registration period. As of May 23, 2014, nearly 350 Entity Administrators have been registered, along with about 30 regional administrators. NERC opened the BES application for user registration on May 30, 2014, and has continued encouragement of a “slow roll” approach, so NERC can more easily monitor the application and analyze progress.

The BESnet tool is the first ERO enterprise wide application implemented to provide a common platform to manage implementation of the BES that all registered entities can use. Regional Entities and NERC can manage conforming processing of self determination notification and exception requests. The BESnet tool provides a methodical technical basis for decisions regarding BES elements and those necessary for reliable operation of the BES.

As an overview, there is currently an effective operational understanding of the range of the BES elements needed to support reliable operation of the system. NERC anticipates some transitional changes resulting from the use of a common definition and alignment to the new bright-lines across the Regional Entities. Additional elements may be identified as necessary for reliable operation through a multi-layer technical approach and associated review. Importantly, adequate due process provisions are in place in the current NERC Rules of Procedure. However, overall limited exceptions to application of the BES definition to elements are anticipated as a result of the clarity and certainty provided by the FERC orders and NERC oversight on implementation. Generally, changes are expected to represent refinements rather than a wholesale restructuring of the BES landscape.

In terms of implementation experience, significant work has been done with respect to advance user access testing and training. In order to provide the type of certainty and clarity surrounding the BES elements needed, a dual layer approach to ensuring these objectives has been put into place to enable consistent, sound technical determinations to be provided to the registered entities. Technical review panels contemplated by the exception process will provide the type of oversight assurance of good quality results and determinations. Guidance and reference materials have been developed and are publicly available. Webinars, workshops and training are ongoing. These are discussed below.
The development of the BES definition represents one of NERC’s many successes as the ERO. NERC’s open and inclusive processes enabled this joint and collaborative effort, involving NERC, the Regional Entities, the Commission, and industry stakeholders. The participation of Commission staff in the NERC standard development process was another hallmark of this success and facilitated early identification and resolution of issues and necessary technical support.

**Preparation for July 1, 2014**

Based on information to date, NERC agrees with the Commission’s observations, in Order No. 773, that the revised BES definition is not expected to result in material changes to what is considered part of the BES today. That is, it is not expected to result in a significant number of new assets or removal of existing assets. NERC also does expect the revised BES definition to result in significant registration or deregistration of entities.

To ensure industry awareness and preparedness, NERC and the Regional Entities have implemented a comprehensive change management approach to address the overall deployment across North America, including education and outreach to reliability stakeholders. Each Regional Entity has either offered or is offering one or more special sessions for its stakeholders dedicated to reviewing and discussing the BES definition. Additionally, some Regional Entities have provided or will provide demonstrations of the BESnet application. The Regional Entities have diligently worked to ensure successful implementation of the new BES definition.

With regard to broader outreach and activities, NERC held a web-based kickoff meeting in early May. NERC has held and scheduled a number of Question and Answer (Q&A) sessions, which include web-based sessions or in-person sessions. NERC is also providing a series of web-based training sessions on using the BESnet application, and in fact at the opening kickoff webinar there were more than 900 participants in the session reflecting a high level of interest and desire to implement the BES definition appropriately and to understand the potential steps needed. In addition to the interactive sessions, NERC is developing a series of computer-based training modules for the implementation BES definition. There are ten training modules that discuss the BES definition and its application in detail, and there are eight additional modules that explain how to use the BESnet tool to perform various tasks and functions.

An extensive library of written reference materials and associated self-help documentation has been developed, available at the following link, to support the ready accessibility at any time and ensure a smooth transition of the implementation, and is available on-line. This documentation includes:

- A detailed reference document that provides explanations and examples of how the BES definition and associated inclusions and exclusions should be applied
- A list of answers to Frequently Asked Questions (also called a FAQ) that is regularly updated
- A guideline describing how notifications of self-determined inclusion and exclusion should be reviewed
- A guideline describing how exception requests are evaluated
- A set of diagrams illustrating the BES Exception Process flow.
- A set of instructions for using the BESnet application

All of this and more can be found on NERC’s website, and NERC’s BES Definition Notification and Exception Process Project Page at: [http://www.nerc.com/pa/RAPA/Pages/BES.aspx](http://www.nerc.com/pa/RAPA/Pages/BES.aspx).
Notification of Self-Determination Process

Registered entities are obligated to inform the Regional Entity of any self-determination that an element is no longer part of the BES. However, if nothing has changed in an element’s BES status after applying the revised BES definition, an entity does not need to submit a BES self-determined notification. The BESnet application will be available to receive BES self-determined notifications on July 1, 2014. A checklist is included in the BES Notification Review Guideline and is available at: http://www.nerc.com/pa/RAPA/Pages/BES.aspx.

In order to ensure consistency and to ensure that the BES definition has been correctly applied, the Regional Entities will review self-determinations. NERC also will exercise oversight authority of the reviews through random sampling or individual review, as warranted, in order to ensure that the BES definition is being implemented correctly and consistently throughout North America.

Self-determined notifications for newly included elements must be submitted through the BESnet application to the Regional Entity during the 24-month implementation period for the BES definition, beginning July 1, 2014. Similarly, newly identified exclusions of elements that were previously part of the BES under the prior definition require similar self-determined exclusion notification through the BESnet application to the Regional Entity. These notifications alert NERC and the Regional Entities to a change in status of BES elements and allow them to validate proper application of the BES definition and determine next steps and any resultant compliance obligations that may arise. Registered entities must review their assets and determine any status changes. The reference documents, training and the tools that have been developed are part of a methodical well-structured approach to implementing the BES definition.

In addition, even after proper application of the BES definition, an entity may choose to submit an exception request to exclude an element that meets the BES definition or include one that no longer qualifies, as discussed below.

Exception Request Process

The exception process is important because it provides a mechanism to add or remove elements even if they do not meet the BES definition. This ensures that all elements that can have a material impact on the reliable operation of the system are included and affected users, owners and operators of the system are subject to and complying with applicable mandatory Reliability Standards. The following entities may submit an exception request:

- Owner of the Element(s)
- Regional Entity
- Entity with scope of responsibility for the Element(s) under consideration:
  - Regional Entity
  - Planning Authority
  - Reliability Coordinator
  - Transmission Operator
  - Transmission Planner
  - Balancing Authority
NERC encourages entities to coordinate with their Reliability Coordinator and Balancing Authority prior to submitting a BES exception request. The main steps in the exception process are as follows:

- Exception Request Submittal
- Regional Entity Initial Review
- Regional Entity Substantive Review and Recommendation
- NERC Review and Final Decision

Exception requests for elements that cross multiple Regional Entity boundaries should identify all Regional Entities involved. This will aid in promoting awareness of requests to add or remove elements and, therefore, consistency in review and determinations of the exception requests. The Regional Entities will designate a lead Regional Entity that will coordinate the exception request.

NERC has instituted oversight and appeal mechanisms to ensure uniformity in due process and consistency in outcomes. NERC intends to release information on a rolling basis with respect to best practices and lessons learned. A Frequently Asked Question document also will be updated on a rolling basis to ensure timely dissemination of information to all reliability stakeholders.

Upcoming Activities
NERC has conducted five workshops and webinars to date and there are roughly a dozen more upcoming educational and outreach events scheduled, which are designed to assist registered entities with the transition to the revised BES definition.

Registration Changes
NERC’s objective in implementing the revised BES definition is to ensure a common BES foundation for elements that serves to provide assurances that the proper entities are registered and responsible for Reliability Standards that are necessary to ensure the reliability of the BPS. In Order No. 773 (at P 55), the Commission stated that, “[w]e do not expect there to be significant numbers of entities either needing to register or deregister due to the change in definition.” NERC shares the Commission’s expectation that only a small number of entities will require changes to their NERC registration as a result of the revised BES definition.

An entity seeking to modify its current registration, including de-registration or deactivation, must inform its applicable Regional Entity of this change in status. In turn, the Regional Entity will notify NERC of such changes. All changes to registration are processed by the NERC registration and certification department, in accordance with the NERC Rules of Procedure. NERC’s Risk-Based Registration Initiative is underway and will help inform registration determinations going forward.

Reliability Standards Applicability
As a result of the implementation of the new BES definition, some individual entities or classes of entities may warrant consideration and eligibility for compliance with tailored Reliability Standard applicability. Such an approach was successfully implemented with respect to generator owners and operators that also were transmission owners and operators by strict application of the threshold criteria.
A sub-set of applicable Reliability Standards was developed and put in place, while work was underway in parallel that ultimately resulted in changes to the applicability section that were effectuated through the Standards Development Process. This occurs through the NERC Organization Registration process, in concert with the respective Regional Entity. To initiate a request for a sub-list of applicable Reliability Standards, an entity must inform its Regional Entity contact. Through the NERC-led centralized process being developed as part of the Risk-Based Registration Initiative, NERC and the Regional Entities will develop sub-sets of applicable Reliability Standard requirements for certain functional entities.

**Risk-Based Registration Initiative (RBR)**

NERC launched the RBR Initiative in early 2014, following the successful reforms in the Reliability Standards program, as well as the Compliance Monitoring and Enforcement programs. Each of these reforms, individually and collectively, is moving NERC from its nascent state to a mature end state.

The overall objective of RBR is to ensure that the right entities are subject to the right set of applicable Reliability Standards through the use of a consistent approach to risk assessment and registration across the ERO. The goal is to develop enhanced registry criteria, including the use of thresholds and specific Reliability Standards applicability, where appropriate, to better align compliance obligations with material risk to the BES reliability.

To inform the RBR efforts, NERC established a Risk-Based Registration Advisory Group (RBRAG) to provide input and advice for the RBR design and implementation plan. RBRAG is comprised of NERC staff, the Regional Entities, FERC, and U.S. and Canadian industry representatives. An RBRAG technical Task Force (RBRAG Task Force), comprised of subject matter experts from NERC staff, the Regional Entities and industry, is providing technical support to RBRAG with respect to the proposals under consideration. RBRAG provided a draft white paper to the Member Representatives Committee in April and posted a draft design framework and implementation plan, as well as certain associated draft rule changes, in May. An industry survey also was concurrently posted to obtain information relevant to the proposed reforms.

As noted above, in late May a draft design framework, implementation plan and certain rule changes were posted for a 21-day comment period. During the third quarter of 2014, work will continue to finalize the design and implementation plan in order to present it to the NERC Board of Trustees at the November Board meeting for approval. NERC will file with the Federal Energy Regulatory Commission and other applicable governmental authorities any rule changes that are needed to implement the registration reforms. Outreach, training and roll-out will continue into late 2014. Full implementation is expected in 2015.

NERC recognizes that the proposed revisions must be very carefully examined for potential unintended consequences or material reliability gaps that might follow from such modifications. Work is underway to develop sound technical justifications and support with respect to specific threshold criteria changes.

**RBR Reforms and BES Definition**

The new design framework includes: (i) refined thresholds, (ii) reduced Reliability Standard applicability, where warranted, and (iii) clearly defined terms, criteria and procedures. The reforms are risk-based, aligned with the new BES definition and are designed to ensure reliability of the BPS.
The proposed enhancements are expected to benefit all reliability stakeholders and to ensure reliability while avoid causing or leading to instability, uncontrolled separation, or cascading failures.

The revised thresholds reflect and complement the new BES definition that goes into effect on July 1, 2014. The BES definition and exception process establish whether a particular element is BES or not, and whether specific elements are not necessary for the reliable operation of the BES.

In contrast, the RBR process is a way to identify those organizations that should be registered for their functions as a user, owner or operator of the BES-based on their risk or contribution to reliability. Therefore, registration decisions are separate and distinct from application of the BES definition, including the BES exception process.

Under both the current registration program and the proposed revisions, if an entity meets the threshold criteria, it is deemed to have a material impact on the reliability of the BPS. The entity then is in a pool of eligible candidates that NERC and the Regional Entities may identify for registration. NERC and the Regional Entities may exercise discretion not to register an entity, if the entity is not material to reliability. In addition, NERC and the Regional Entities may grant a sub-set of applicable Reliability Standards to particular entities.

Where registration is pursued, an entity that meets the threshold criteria may demonstrate through a new materiality test that it is not material to reliability and should not be registered. In addition, the new materiality test may be used to establish that an entity that does not meet threshold criteria should be registered because it does have a material impact on reliability. The materiality test is based on the BES exception process in that it applies a bright-line, but allows exceptions to occur (both above-the-line and below-the-line).

A NERC-led panel, comprised of NERC and Regional Entity staff, will be established to address questions or issues that arise with respect to threshold application, materiality, or Reliability Standard requirement applicability. This will ensure consistency in determinations across the ERO.

**Refined Thresholds Based on Sound Technical Analysis and Support**

As a result of the reviews within the RBR initiative, BES definition thresholds are the thresholds for TOs, TOPs, GOs and GOPs. For these functions, the BES definition thresholds are risk-based, because they set thresholds at levels to reflect which TOs, TOPs, GOs and GOPs, among all candidate entities, have a material impact on BES reliability. These thresholds were established after significant work over several years.

With respect to the distribution provider function, there are several proposed revisions to the threshold criteria. First, language is clarified to refer to the entity’s system being “directly connected” to the BES. In addition, the threshold is potentially increased to 75 MW (pending studies of the aggregate impact of such change) while retaining or adding other criteria for registration such as owning or operating protection systems important for reliability (SPS, UVLS and transmission protection systems), responsibility for operating a cranking path, providing load forecast information, or responsibilities for providing services to a nuclear plant. In addition, a UFLS-Only distribution provider registration is proposed for those entities 75 MW or below that have UFLS protection systems required for a UFLS program designed for the protection of the BES. Such UFLS-Only distribution provider would only be responsible for complying with PRC-006-1 as distribution providers, but not the other standards applicable to a distribution provider.
NERC also has preliminarily identified three functional categories that could be eliminated as part of the RBR redesign: 1) PSEs, 2) LSEs, and 3) IAs. Further examination is required before any function can be eliminated and that work is ongoing. Ultimately, in the event a particular function is determined not to be material to reliability going forward, NERC will evaluate the associated Reliability Standard requirements to determine if accountability for those requirements should be assigned to another function or process, or consider elimination of the requirement with assessment with NERC’s Standards Committee, similar to the Paragraph 81 effort.

The proposed changes include revising references from BPS to BES in specific threshold criteria; however, such changes would not apply when discussing NERC and FERC jurisdiction over the BPS or the ability to register users, owners and operators that have a material impact on reliability.

Under the current draft reforms, there are no changes in criteria with respect to the following seven functional categories: BAs, PAs/PCs, RCs, TPs, RPs, RSGs and TSPs.

**Clearly defined terms, criteria and procedures that are risk-based and ensure reliability of the BPS**

**Risk-Based Review.** Only those entities that are registered and listed on the NERC Compliance Registry are held accountable for compliance with NERC Reliability Standards. Historically, entities have been registered for one or more fifteen functional categories depending on whether it is a user, owner or operator of the BPS. Going forward, entities will continued to be registered by function not facilities, according to the proposed revised thresholds in the Registry Criteria. The ERO risk assessment also includes a review of individual and aggregate system-wide risks and considerations that include the inherent or structural risk to reliability of the BPS, as anchored in the new BES definition.

**One-time Attestations.** In addition, with respect to self-certifications and other compliance monitoring activities, registered entities will be permitted to record a one-time attestation of “not applicable” to a given Reliability Standard requirement. These attestations are necessary where there is an existing physical or technical limitation, or where the requirement is not applicable for another reason. For example, if the registered entity does not own or operate UFLS or UVLS assets, it should simply use the “not applicable” designation.

The Regional Entity will then carry forward this declaration from year-to-year, without requiring the registered entity to repeat the attestation each year, unless circumstances materially change requiring the need for the registered entity to notify the appropriate Regional Entity. NERC or the Regional Entity would have the ability to audit to verify the recordation is correct, on an as needed basis, but this should be infrequent. In addition, NERC and the Regional Entities should allow multi-Regional registered entities (MRRE) to use a single, one time attestation, updated as needed in such a case, NERC and the Regional Entities would have the opportunity to audit to verify the single attestation is true and correct.
Common registration form. The Registration Functional Group is currently developing a common registration form to help drive consistency in registration. The use of a common form will facilitate uniformity in the information being collected from registration candidates regardless of where they are located in North America relevant to an assessment of an entity’s inherent risk. Inherent risk is a function of an entity’s various registrations and other relevant factors like its system design, configuration, size, etc.

Business processes and tools. The RBR redesign also will address potential impacts on business processes and tools needed to support RBR both within the ERO and in industry. RBR is exploring use of a single, web-based design. In the interim, changes to the portals and various electronic forms used by NERC and the Regional Entities will need to be adapted to take into account Reliability Standard applicability classes. This will affect compliance monitoring and enforcement activities and will need to be addressed as part of the implementation plan.

Oversight. NERC retains responsibility and oversight to ensure that a Regional Entity implements the Registration program in a consistent manner. Toward this end, the RBR redesign ensures that NERC is periodically performing programmatic reviews of the Regional Entities’ registration activities to ensure uniformity in due process and consistency in application. This will include development of enhanced controls to ensure consistency.

Reduced Reliability Standard Applicability Based on Sound Technical Analysis and Support
RBR allows sub-sets of applicable Reliability Standards based on individual review of a specific entity as well as common characteristics of a class of entities, as applicable. From Order No. 693 to date, FERC has long-recognized that NERC and the Regional Entities have the ability to apply sub-sets of Standards to registered functions. Tailoring Reliability Standard obligations has been successfully implemented in both the registration appeal context and Project 2010-07: Generator Requirements at the Transmission Interface (the GO/TO project). In addition, historically, some Regional Entities have addressed the challenges of Reliability Standard applicability to entities through their compliance monitoring activities, such as adjusting the scope of audits. The redesigned framework builds on the use and experience to date. For example, with respect to the proposed UFLS-Only distribution provider, certain requirements would not apply to a registered entity, based on uniform characteristics.

An initial list of the sub-set of otherwise applicable requirements that could be applied to a low-risk TOP has been identified, and provisions are made for future consideration of targeting requirements for certain GO/GOPs.

Implementation Plan
The implementation plan has been developed to have an appropriate pace for completion by the end of 2015 to ensure a smooth transition to the new registration program. Possible rule changes have been identified with respect to the NERC Rules of Procedure Section 500, Appendix 5A, and Appendix 5B to implement risk-based registration. For example, the opportunities for change include modification of the registry criteria, and improving procedures, Reliability Standard requirement applicability classes, determinations and associated appeals. Other changes are appropriate to memorialize practices in place today and to implement other improvements to these sections.
Ties to the BES Definition and Reliability Standard Risk and Applicability Evaluations

The RBR builds on other ERO initiatives that similarly prioritize and differentiate facilities based on how critical they are to the reliable and secure operation of the BPS. Tiering is determined based on the risk posed. Therefore, it is appropriate that the approach depend on a particular context with common application to similarly situated entities or characteristics.

The BES definition is important to the RBR for two reasons. First, the structure of the BES definition, approved by FERC, is a useful model for the RBR. It begins with a bright-line threshold that identifies most facilities that are part of the BES, and then layers on clear exclusions and inclusions that address the most common configurations not adequately captured by the bright-line threshold. Combined, the bright-line, exclusions, and inclusions address the vast majority of elements that should be part of the BES, but elements can be included or excluded from the BES through a case-by-case exception process. The reformed registration process should similarly include revised thresholds, with a case-by-case process to adjust registration (by inclusion or exclusion) where warranted based on a materiality determination that takes into account circumstances not captured by the revised thresholds.

As a result, instead of evaluating the criteria for registration, the concept here is to tier Reliability Standard applicability to risk. There are already several examples of this “tiering” concept implemented in different fashions within the Reliability Standards:

- CIP V5 tiers requirements to High, Medium and Low risk based on bright-lines, which evolved from the prior critical or non-critical designation.
- FAC-003 and PRC-023 adopt a 200 kV or greater bright-line.
- The GO/TO effort identified a subset of TO/TOP requirements that are applicable to a generator lead transmission line.

The method proposed is to implement a tiered approach that will be further guided by analysis yet to be completed. There are several alternatives to accomplish this “tiering”:

1. Reliability Standards development process to create the tiers within the applicability portion of the Reliability Standards.
2. Case-by-case treatment of individual owners or operators where the Regional Entity and NERC, working with the entity and other affected entities (e.g., neighboring TOPs, the RC), determine which Reliability Standards and requirements are appropriate to that entity commensurate with that entity’s risk to reliability, and publish/post the agreed upon Reliability Standards/requirements in a “CFR-like” format.
3. Determine categories/tiers of owners/operators based on criteria and implement #2 above on groups of owner/operators instead of case-by-case treatment.

Establishing sub-sets of applicable Reliability Standards for a given entity or class of entities has been successfully implemented in both the registration appeal context and Project 2010-07: Generator Requirements at the Transmission Interface (the GO/TO project). NERC will continue to build on these experiences in its ongoing efforts.
Conclusion

BES and the Risk-Based Registration are two significant initiatives underway that represent an evolution in the maturity and growth of the ERO. As we have grown we have learned risk prioritization and experiences to date continue to shape and inform these efforts. We look forward to the successful implementation of these efforts. I wish to thank the Commission for your support and assistance with these efforts.