NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

2017 Business Plan and Budget

Final

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RELIABILITY | ACCOUNTABILITY




3353 Peachtree Road NE
Suite 600, North Tower
Atlanta, GA 30326
404-446-2560 | www.nerc.com

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About NERC

Overview

The North American Electric Reliability Corporation (NERC) is a not-for-profit entity organized under the New Jersey Nonprofit Corporation Act. NERC's mission is to improve and ensure the reliability of the Bulk Power System (BPS)[1] in North America. NERC's area of responsibility spans the continental United States and portions of Canada and Mexico. Entities under NERC's jurisdiction are the users, owners, and operators of the BPS—a system that serves the needs of over 340 million people, includes installed electricity production capacity of approximately 1,200 gigawatts, operates 475,000 miles of high-voltage transmission (100 kV and above), and is comprised of assets worth more than one trillion dollars.

Electric Reliability Organization (ERO)

The Federal Energy Regulatory Commission (FERC or Commission) certifies and has oversight of NERC as the electric reliability organization (ERO) within the United States to establish and enforce reliability standards for the U.S. portion of the BPS, pursuant to Section §215 of the Federal Power Act (§215). As of June 18, 2007, FERC granted NERC the legal authority to enforce reliability standards with all U.S. users, owners, and operators of the BPS and made compliance with those standards mandatory and enforceable. Equivalent relationships have been sought and, for the most part, realized in Canada and Mexico.

International Relations

Prior to adoption of §215 in the United States, the Canadian provinces of Ontario (in 2002) and New Brunswick (in 2004) adopted all NERC reliability standards that were approved by the NERC Board of Trustees (Board) as mandatory and enforceable within their respective jurisdictions through market rules. Reliability legislation is in place, or NERC has memoranda of understanding with, provincial authorities in Ontario, New Brunswick, Nova Scotia, Québec, Manitoba, Saskatchewan, British Columbia, and Alberta, and with the National Energy Board of Canada (NEB). NERC's standards are mandatory and enforceable in Ontario and New Brunswick as a matter of provincial law. Manitoba has adopted legislation, and standards are also mandatory. In addition, NERC has been designated as the "electric reliability organization" under Alberta's Transmission Regulation, and certain reliability standards have been approved in that jurisdiction; others are pending. NERC reliability standards are now mandatory in British Columbia and Nova Scotia. NERC and the Northeast Power Coordinating Council (NPCC) have been recognized as standards-setting bodies by the Régie de l'énergie of Québec, and Québec has the framework in place for reliability standards to become mandatory. NEB has made reliability standards mandatory for international power lines between the U.S. and Canada.

In Mexico, the Comisión Federal de Electricidad has signed the Western Electricity Coordinating Council's (WECC's) reliability management system agreement, which applies only to Baja California Norte.

Membership and Governance

An 11-member Board of Trustees (the Board), comprised of 10 independent trustees and NERC's president and chief executive officer serving as the management trustee, governs NERC. The Board has formed several committees to facilitate oversight of the organization in the areas of finance and audit, governance and human resources, compliance, standards oversight and technology, nominations and, most recently, enterprise-wide risk.

[1] NERC's standards, compliance and enforcement activities are focused on the Bulk Electric System (BES), which is comprised of certain BPS facilities.

Membership in NERC is open to any person or entity that has an interest in the reliability of the North American BES. Membership is voluntary and affords participants the opportunity to engage in the governance of the organization through election to the Member Representatives Committee (MRC).[2] More than 600 entities and individuals are members of NERC.

Scope of Oversight

As the international, multijurisdictional ERO in North America, NERC is authorized to:

- Propose, support the development of, monitor compliance with, and enforce mandatory reliability standards for the North American BPS, subject to regulatory oversight and approvals from FERC in the United States and applicable authorities in Canada;
- Conduct near-term and long-term reliability assessments of the North American BPS;
- Certify BPS operators as having and maintaining the necessary knowledge and skills to perform their reliability responsibilities;
- Maintain situational awareness of events and conditions that may threaten BPS reliability;
- Coordinate efforts to improve physical security and cybersecurity for the BPS of North America;
- Conduct detailed analyses and investigations of system disturbances and unusual events as well as measure ongoing system trends to determine root causes, uncover lessons learned, and issue relevant findings as advisories, recommendations, guidelines, and essential actions to the industry to mitigate and control risks to reliability; and
- Identify and prioritize risks to reliability and use a broad toolkit to mitigate and control risks to reliability, including the potential need for new or modified reliability standards, improved compliance monitoring and enforcement methods, or other initiatives.

Delegated Authorities

In executing its responsibility, NERC delegates certain authorities to eight regional reliability entities (Regional Entities or the Regions) to perform aspects of the ERO functions described through delegation agreements. FERC has approved delegation agreements between NERC and the eight Regional Entities (Florida Reliability Coordinating Council (FRCC), Midwest Reliability Organization (MRO), Northeast Power Coordinating Council, Inc. (NPCC), ReliabilityFirst, SERC Reliability Corporation (SERC), Southwest Power Pool Regional Entity (SPP RE), Texas Reliability Entity, Inc. (Texas RE), and the Western Electricity Coordinating Council (WECC)). These agreements describe the authorities delegated and responsibilities assigned to the Regional Entities in the United States to address, among other things: (1) developing regional reliability standards, (2) monitoring compliance with and enforcement of mandatory reliability standards (both North American-wide and regional), (3) certifying registered entities and registering owners, operators, and users of the BES, (4) assessing reliability and analyzing performance, (5) training and education, (6) event analysis and reliability improvement, and (7) situation awareness and infrastructure security. NERC expects Regional Entities whose territories and geographic footprints extend into Canadian provinces and Mexico to perform equivalent functions in those jurisdictions.

[2] The Member Representatives Committee (MRC) comprises 28 voting representatives elected from the 12 membership sectors. The MRC elects the independent trustees and, along with the Board, votes on amendments to the Bylaws. The MRC also provides policy advice and recommendations to the Board on behalf of stakeholders with respect to annual budgets, business plans, and other matters pertinent to the purpose and operation of the organization.

ERO Enterprise Operating Model

The collective network of leadership, experience, judgment, skills, and technologies shared among NERC and the eight Regional Entities is referred to as the ERO Enterprise (the Enterprise). In 2014, a common operating model, Improving Coordinated Operations across the ERO Enterprise,[3] was developed to define how NERC and the Regional Entities achieve excellence in the oversight and execution of statutory functions by collaborating to mitigate reliability risks. The model also defines the division of the roles and responsibilities for NERC and the Regional Entities to efficiently and effectively execute services performed as the collective Enterprise. In 2015, implementation of this model progressed with oversight plans developed for Compliance Monitoring and Enforcement programs, and Registration. Further, NERC and the Regional Entities deepened their coordination activities to identify, prioritize and address risks to reliability.

NERC has unique responsibilities within the Enterprise to design the oversight of program areas; develop operational oversight and leadership; set qualifications and expectations for the performance of delegated activities; and assess, train, and give feedback to corresponding regional programs. NERC also reviews and provides input to the annual Regional Entity business plans and budgets, including but not limited to review of resource allocations, staffing capacity assessments, and program performance assessments. NERC input and review occurs before regional board approval.

Similarly, the Regional Entities have a mirrored set of responsibilities that include being responsive to the design of the operational model, providing input into the overall development of each ERO program area, providing training and development to meet ERO qualifications, being receptive to feedback from the ERO, and making responsive adjustments. Regional Entities also have an obligation to meet professional standards of independence and objectivity, and provide the best available expertise for addressing risks.

With due recognition and awareness of the distinction between individual roles, responsibilities, and corporate status, NERC and the Regional Entities are continually refining their individual and collective operating and governance practices in support of an agreed-upon set of strategic goals and objectives that are designed to ensure the ERO fulfills its statutory obligations.

Statutory and Regulatory Background

NERC's authority as the ERO in the United States is based on Section 215 of the Federal Power Act, as added by the Energy Policy Act of 2005,[4] and the Commission's regulations and orders issued pursuant to Section 215. In Canada, NERC's authorities are established by the memoranda of understanding and regulations previously mentioned.

Funding

Section 215 of the Federal Power Act and the Commission's regulations specify procedures for NERC's funding in the United States. NERC's annual business plan and budget is subject to Commission approval in the United States. Once approved, NERC's annual funding is provided through assessments to load-serving entities. These assessments are allocated on a net-energy-for-load (NEL) basis. Equivalent funding mechanisms are provided in Canada, subject to the specific laws and regulations of each province.

The Regional Entities' funding requirements are addressed separately in their respective business plans and budgets, which must be reviewed and approved by NERC and FERC in the United States. Assessments for the Regional Entity budgets are included in the overall NERC assessments to load-serving entities.

[3] Improving Coordinated Operations Across the ERO Enterprise

[4] This was codified in section 215 of the Federal Power Act, 16 United States C. 824o.

Introduction and Executive Summary

TOTAL RESOURCES (in whole dollars)	2017 Budget	U.S.	Canada	Mexico
Statutory FTEs	189.88			
Non-statutory FTEs				
Total FTEs	189.88			
Statutory Expenses	$ 66,921,632			
Non-Statutory Expenses	$ -			
Total Expenses	$ 66,921,632			
Statutory Inc (Dec) in Fixed Assets	$ 2,680,543			
Non-Statutory Inc (Dec) in Fixed Assets	$ -			
Total Inc (Dec) in Fixed Assets	$ 2,680,543			
Statutory Funding of Reserves	$ 530,402			
Non-Statutory Funding of Reserves				
Total Working Capital Requirement	$ 530,402			
Proceeds from Financing Activities	$ 19,083			
Total Statutory Funding Requirement	$ 70,151,660			
Total Non-Statutory Funding Requirement	$ -			
Total Funding Requirement	$ 70,151,660			
	TOTAL	**US**	**CANADA**	**MEXICO**
Statutory Funding Assessments	$ 59,856,314	$ 54,326,337	$ 5,353,026	$ 176,951
Non-Statutory Fees				
NEL	4,514,633,135	3,983,687,261	518,227,758	12,718,116
NEL%	100.00%	88.24%	11.48%	0.28%

Strategic Goals and Metrics

The ERO Enterprise strategic plan[5] and framework is informed by the following activities completed in 2015: (1) NERC's State of Reliability Report; (2) the Reliability Issues Steering Committee's (RISC's) ERO Reliability Risk Priorities Report and Supplemental Technical Summary, which includes identified risk profiles; and (3) input from the NERC Board and Regional Entity Boards. In 2015, these inputs were used by ERO Enterprise leadership to:

- **Update ERO Enterprise Longer-term Strategic Planning Considerations** – The ERO Enterprise makes any necessary adjustments to its longer-term strategic planning considerations, which takes into consideration Bulk Electric System (BES) reliability issues over a 5 to 15-year planning horizon.
- **Update the Three-year ERO Enterprise Strategic Goals** – The ERO Enterprise makes any necessary adjustments to its strategic goals for the next three years.
- **Develop Annual ERO Enterprise Metrics** – The ERO Enterprise develops annual metrics to measure the ERO Enterprise's progress in attaining the strategic goals.
- **Develop Annual Business Plans and Budgets** – Working collaboratively, NERC and each of the Regional Entities develop annual business plans and budgets (BP&Bs) that reflect the resources necessary to support achievement of the goals set forth in the strategic plan.

Evolving Reliability Risks

Over the past five years, NERC has transformed its activities towards being more risk-based, ensuring that the right activities are focused on the most pertinent risks to the reliable operation of the bulk power system. The RISC is an advisory committee to the Board, providing key insights, priorities, and high-level leadership for issues of strategic importance to BPS reliability. The 2015 RISC report presents the results of their continued work to define and prioritize risks, and offer recommendations to the Board to inform the development of NERC's risk strategy. The report recommendations are considered as the Strategic Plan, Goals and supporting activities are updated for the coming years. In 2015, the RISC recommended a high level of focus and priority in the following areas:

- **Regulatory Uncertainty (Markets, states, and federal/provincial)**
  These risks arise where the impacts from regulatory initiatives are uncertain in their extent, timing, and potential reliability considerations. These uncertainties are accentuated by the interplay among these three arenas, each of which reflects policy, regulatory, and legislative dimensions which may not include sufficient reliability coordination.

- **Resources (Changing resource mix, inadequate planning coordination, and ineffective resource planning)**
  This set of evolving risks reflects interdependent aspects from the continued and accelerated rapid transformation of the resource mix. As part of the increased and accelerated integration of new types of variable, renewable, and distributed energy resources, planners must ensure that sufficient Essential Reliability Services (ERSs) and operator flexibility are available to maintain reliability.

- **Resiliency: Cyber security**
  These risks reflect aspects of resilience related to potential cyber disruptions of the BPS. As cyber aspects evolve, they require more assertive and flexible approaches to provide adequate assurances of reliability.

[5] ERO Enterprise Strategic Plan 2016-2019

2016-2019 Strategic Goals

The ERO Enterprise has five strategic goals, adopted by the NERC Board in November 2015, enabling the Enterprise to successfully carry out its mission as further described in the Strategic Plan For each goal, a detailed description and activities that contribute to its success are provided below, followed by additional information about the allocation of NERC's resources toward achievement of the goal. The associated metrics in support of these goals have been approved for 2016[6]; updated strategic goals and associated metrics will be finalized later in 2016 for the 2017 year, with opportunities for stakeholder feedback prior to their approval. At this time it is not anticipated that these updates will have a material impact on NERC's overall budget or resource allocation among operating areas for 2017. However, the updates may potentially affect priorities and workload within particular departments and will inform resource planning and allocation for the 2018 budget year.

Goal 1
Timely and Risk-Responsive Reliability Standards

Reliability standards establish threshold requirements for assuring the BES is planned, operated, and maintained to minimize risks of cascading failures, avoid damage to major equipment, or limit interruptions of bulk electric supply. Reliability standards are clear, timely, responsive to reliability risks and cost-effective.

Contributing Activities

- Conduct periodic reviews and assessment of whether the reliability standard is properly structured for emerging risks.
- Assess reliability standards compared to the BES risk profile; address the most important unmitigated risks, including applicable high-impact, low-frequency risks.
- Develop and implement ERO Enterprise feedback loops to identify and address gaps or ambiguities in reliability standards, including the evaluation of significant BES events (including all category 3 and above).
- Develop and implement procedures for assessing the cost impact of reliability standards.

Goal 2
Objective and Risk-informed Compliance Monitoring, Enforcement, and Organization Certification and Registration

The ERO Enterprise is a strong enforcement authority that is independent, without conflict of interest, objective, and fair, and promotes a culture of reliability excellence through risk-informed compliance monitoring, enforcement, certification, and registration. The ERO Enterprise retains and refines its ability to use standards enforcement when warranted and imposes penalties and sanctions commensurate with risk.

Contributing Activities

- Consistently register and deregister entities based on risk to the BES and the BES definition.
- Evaluate the certification program for effectiveness and implement consistently across the ERO Enterprise.
- Develop Compliance Oversight Plans for registered entities that address the relevant risks.

[6] See 2016 ERO Enterprise and Corporate Metrics for details.

- Focus Compliance Monitoring and Enforcement activities on the most significant risks to the BES.
- Process non-compliance using the appropriate method, considering the risk to the BES.
- Implement Compliance Monitoring and Enforcement consistently, timely, and transparently to industry.

Goal 3
Identification and Mitigation of Significant Current Risks to Reliability

The ERO Enterprise identifies the most significant risks to reliability, provides assurance for mitigating reliability risks, and promotes a culture of reliability excellence. The ERO Enterprise supports the Electricity Information Sharing and Analysis Center (E-ISAC), the Cybersecurity Risk Information Sharing Program (CRISP), reliability assessments, situational awareness, and physical security and cybersecurity preparedness.

Contributing Activities

- Perform reliability data-grounded analyses and sustain independent, technical assessments of proposed regulatory rules or proposed statutes (state, provincial, or federal) as well as significant market rules to determine potential impacts to reliability.
- Maintain a BES risk profile to prioritize and rank reliability risks.
- Develop project plans and business case assessments for high-priority risks including cost and practicality of assessment; implement or facilitate initiatives to address high-priority risks.
- Integrate risk data sources, such as event analysis, Transmission Availability Data System, Generating Availability Data System, and relay misoperations as well as other occurrences (e.g., AC equipment failures) to provide lessons learned, recommendations, identified risks, and their mitigation to promote reliability.
- Analyze system performance and significant events (e.g., sampling of Category 2 events in addition to assessing all Category 3 and above) to identify gaps in reliability standards, compliance effectiveness, registration, and risk controls effectiveness, as well as the development of lessons learned or other information sharing activities that promote BES reliability.
- Enhance communications among the E-ISAC, the Telecommunications Information Sharing and Analysis Center, and Natural Gas Information Sharing and Analysis Center.
- Facilitate the availability, sharing and value of physical security and cybersecurity threat and vulnerability information, analytics, and analysis.

Goal 4
Identification and Assessment of Emerging Risks to Reliability

The ERO Enterprise identifies, evaluates, studies and independently assesses emerging risks to reliability.

Contributing Activities

- Develop sufficiency/adequacy guidelines for ERS including emerging risks. Include consideration of the range of reliability attributes based on a diverse resource mix and load behavior, such as ramping, fast regulation, reserve services, and interdependent sector performance.
- Enhance reliability assessments to reflect changing resource mix behavior, including distributed energy resources and ERS, with probabilistic approaches, considering the variable and energy-limited nature of the resource shifts.

- Evaluate the impacts on BES recovery and restoration plans including consideration of distributed resources.

Goal 5
Effective, Efficient, and Collaborative ERO Enterprise

The ERO Enterprise improves transparency, consistency, quality, efficiencies, cost-effectiveness, and timeliness of results and operates as a collaborative enterprise.

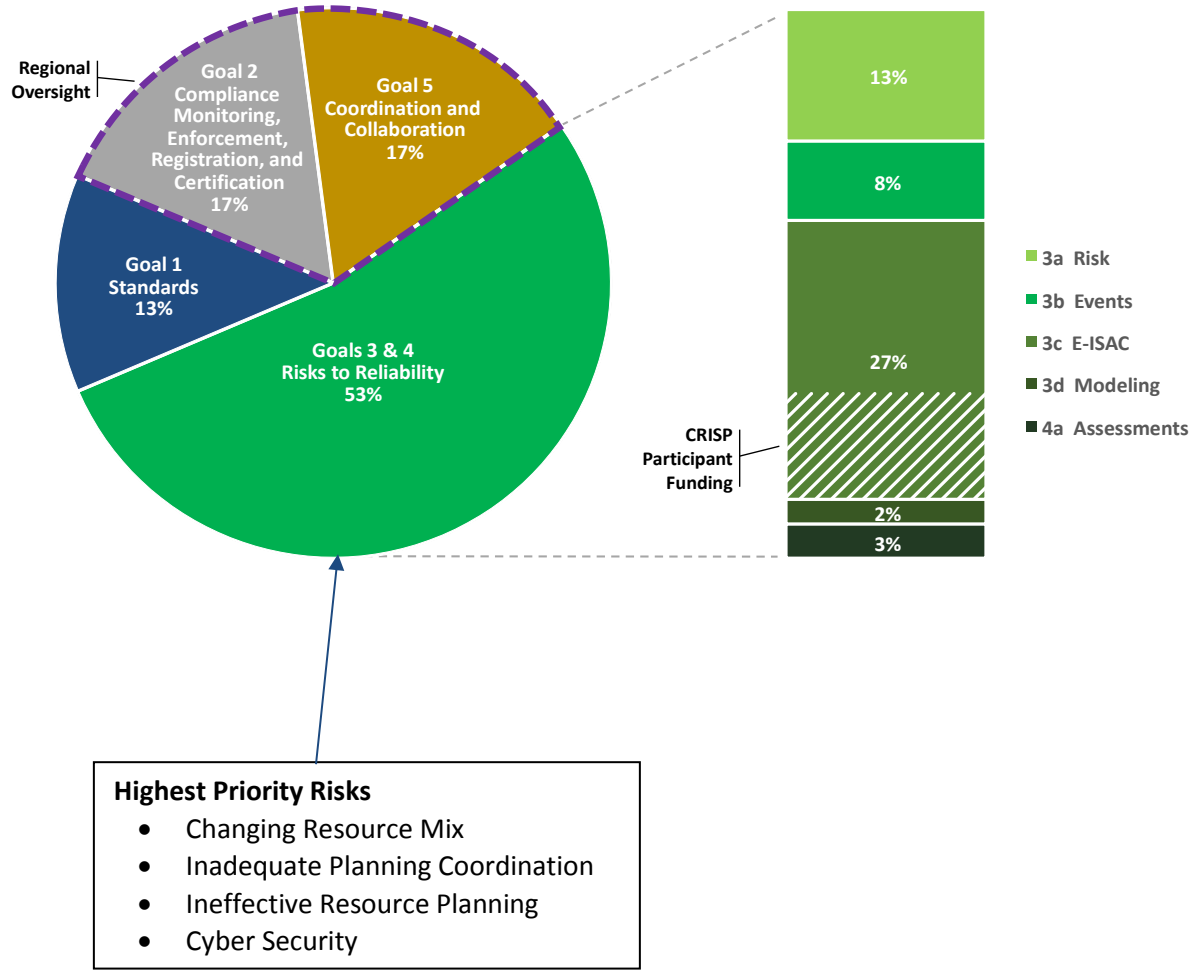
Contributing Activities

- Articulate a shared vision of reliability excellence and support and inspire stakeholders continent-wide, including in international jurisdictions, in working to attain that vision.
- Engage the support and expertise of stakeholders in prioritizing and resourcing reliability initiatives.
- Communicate expectations clearly and foster collaboration to deliver important results in advancing system reliability.
- Acquire, engage, and retain highly qualified talent with requisite technical expertise to execute the ERO Enterprise's statutory functions.
- Understand and manage ERO Enterprise internal risks.
- Processes and procedures are consistent, effective, and efficient.
- Clearly delineate ERO Enterprise roles and responsibilities using the ERO Enterprise Operating Model to mature the collaborative processes.

Allocation of NERC Resources to Strategic Goals and Risk Priorities

The charts below provide an overview of the allocation of NERC's 2017 resources associated with each strategic goal, as well as the RISC priorities. Using FTEs and funding as a guide, the charts reflect the relative amount of total NERC resources (people and dollars) focused on supporting each of the five strategic goals noted above. Obviously many NERC departments work on multiple activities that further multiple goals, and precision in forecasting all activities supporting each goal is not feasible. However, these charts provide a general picture regarding how the company's resources are allocated.

NERC Resource Allocation to Strategic Goal Areas



Ongoing Focus on Cost Control and Efficiency

NERC and the Regional Entities continue to work collaboratively to improve efficiency, evaluate resources, and leverage combined skillsets to improve various ERO Enterprise activities and control costs. This collaboration and the resulting efficiencies can be found in a number of areas, including but not limited to:

- **ERO Enterprise IT Investments:** NERC and the Regional Entities, working collaboratively under the oversight of NERC's Standards Oversight and Technology Committee, have developed a long-term enterprise information technology program resulting in a number of enterprise tools. The goals is to enhance operations and reduce costs at the regional and registered entity level. For example, enterprise tools have helped and will further facilitate efficiency of registration and data submittals, improved consistency in registered entity resources devoted to compliance, and improved overall reliability through information sharing on Events Analysis and Situation Awareness.
- **Enforcement**: NERC has worked closely with Regional Entities to streamline enforcement staff in connection with the development of more efficient and risk-based enforcement mechanisms.

- **Standards:** As standards development has matured, NERC management has reallocated Standards staff towards more critical activities like cyber security and analytical capabilities.
- **Legal:** As a result of the aforementioned efficiencies and the maturity of NERC's and ERO Enterprise's business processes, the legal department has reduced its resource requirements, reallocating limited resources to more critical priorities without increasing the company's overall staffing requirements.
- **Forums**: As further described in the quarterly forum reports to the NERC Board of Trustees, NERC and the Regional Entities continue to leverage the transmission and generation forums to jointly address risks to reliability to mitigate their impacts on the reliable operation of the BES.
- **Industry:** The Enterprise continues to collaborate with, and rely on, industry resources and expertise through the various standing committees, working groups and task forces which are critical to both identifying and supporting key initiatives and priorities.

2017 Key Business Planning Assumptions

As part of the annual business planning process, NERC and the Regional Entities developed a set of common business planning assumptions supporting the development their respective business plans and budgets. The Regional Entities used these assumptions to evaluate their projected workloads and determine resource levels and allocation required to complete necessary tasks and meet the obligations of their Regional Delegation Agreements. These common business planning assumptions are set forth in Exhibit A.

Application of Section 215 Criteria

In its order approving NERC's *2013 Business Plan and Budget*, FERC required NERC to establish criteria for determining whether its proposed activities are eligible for funding under Section 215. In an order dated April 19, 2013, FERC approved NERC's proposed criteria, with certain modifications.[7] Exhibit B summarizes the major activities NERC proposes to undertake in 2017 and the approved Section 215 criteria applicable to such activities.

Overview of 2017 Budget and Funding Requirements

NERC's 2017 combined expense and fixed asset (capital) budget is approximately $69.6M, which represents an increase of approximately $2.4M (3.6%) from the 2016 budget. Total expenses are increasing approximately $1.0M (1.5%) over 2016. The total fixed asset (capital) budget, excluding depreciation,[8] is approximately $4.4M, an increase of $461k over 2016. Approximately $8.3M (11.9%) of NERC's 2017 budget is related to CRISP. In the absence of CRISP, the 2017 budget would increase $2.1M (3.5%) over 2016. As further explained in Section A – Electricity Information Sharing and Analysis Center (E-ISAC), the majority of the NERC CRISP budget will be funded by participating utilities, with only a small portion funded through assessments. A comparative statement of activities presenting NERC's 2017 budget with and without CRISP is set forth later in this section.

NERC's proposed 2017 assessment is approximately $59.9M, which represents an increase of approximately $2.8M (4.9%) from 2016 and reflects the proposed release of $1.1M of funds from the Assessment Stabilization Reserve to reduce 2017 assessments. The balance in the Assessment Stabilization Reserve, from which NERC proposes to release $1.1M to reduce 2017 assessments, includes $500k of Penalty collections during the 12 months ended June 30, 2016, which NERC proposes to deposit

[7] North American Electric Reliability Corporation, Order on Compliance, 143 FERC ¶ 61,052 (2013).

[8] NERC and the Regional Entities budget Depreciation as an Operating Expense with an equal and offsetting credit against budgeted Fixed Asset Additions; as a result, the budgets do not include depreciation in the funding requirements.

in the Assessment Stabilization Reserve. Without the proposed release of funds from the Assessment Stabilization Reserve to offset assessments (as further discussed below), NERC's total average assessments would increase $3.9M (6.8%) over 2016. One of the primary differences between NERC's current 2017 budget increase of 3.6% and the 6.8% 2017 assessment increase (unadjusted) results from eliminating the one-time application of the Penalty funds collected during the 12 months ended June 30 preceding the budget year to offset U.S. assessments in 2017; instead, NERC proposes that these Penalty funds be deposited in the Assessment Stabilization Reserve and that a larger amount, $1.1M, be released from the Assessment Stabilization Reserve to reduce assessments. This loss of penalty offsets from the Penalties collected during the 12 months ended June 30, 2016 will not impact Canadian or Mexican assessments since U.S. penalty funds are only used to reduce U.S. assessments.[9] Other factors contributing to the difference between the proposed assessment increase and the unadjusted assessment increase include debt assumptions and projected reserve requirements, all of which impact assessments in the United States, Canada, and Mexico.

As a long-term strategy to stabilize assessments and align budget and assessment increases more closely, NERC has undertaken a multi-year strategy to manage assessment increases. NERC's policy *Accounting, Financial Statement and Budgetary Treatment of Penalties Imposed and Received for Violations of Reliability Standards* and NERC Rule of Procedure (ROP) §1107.2 specifies that penalties received during the period July 1 through the following June 30 are to be used in the subsequent budget period to offset assessment billings. However, ROP §1107.4 provides for exceptions or alternatives to this treatment if approved by the Commission. In February 2015, NERC's Board approved an amendment to the company's Working Capital and Operating Reserve Policy. [10] Among the approved changes to this policy was the creation of an Assessment Stabilization Reserve.[11] This reserve was established to address the strategic goal of more closely aligning annual budget and assessment increases and to provide resources to better manage year-to-year assessment increases. The eventual goal is to narrow the gap between annual percentage changes in NERC's budget and annual changes in assessments, that results from year-to-year variations in penalty collections.

NERC proposes (1) to deposit the $500k of Penalties collected during the period July 1, 2015 – June 30, 2016, in the Assessment Stabilization Reserve, and (2) to release $1.1M from the Assessment Stabilization Reserve to reduce 2017 assessments. As a result, NERC proposes an overall average 2017 assessment increase of 4.9%, which reflects the proposed release of $1.1M from the Assessment Stabilization Reserves to offset U.S. assessments. The allocation of assessments to Canadian entities will depend on the final determination and allocation of certain compliance and enforcement costs to Canadian entities pursuant to NERC's policy on the allocation of compliance costs.[12]

[9] Accounting, Financial Statement and Budgetary Treatment of Penalties Imposed and Received for Violations of Reliability Standards, December 8, 2008 and as amended August 15, 2013

[10] NERC's Working Capital and Operating Reserve Policy. NERC filed a petition with FERC on March 6, 2015 for approval of this policy; the Commission conditionally approved the revised policy in an order issued June 18, 2015, in Docket No. RR15-8-000. *North American Electric Reliability Corporation, Order Conditionally Accepting Revisions to Working Capital and Operating Reserve Policy*, 151 FERC ¶ 61,225 (2015). On August 14, 2015, NERC submitted a compliance filing to the June 18, 2015 order with a modification to the policy, which the Commission accepted by letter order dated September 18, 2015 (Docket No. RR15-8-001).

[11] In accordance with the approved Working Capital and Operating Policy, this reserve may be funded with penalty funds and surplus operating reserves. The actual amount of the contribution, as well as releases from the fund to reduce assessments, is determined annually as part of NERC's business plan and budget process, based on recommendation by the Board's Finance and Audit Committee and requiring both Board and FERC approval.

[12] Expanded Policy on Allocation of Certain Compliance and Enforcement Costs, July 29, 2008.

The following table provides a high-level year-over-year comparison of the major categories of expenses, total budget, and FTEs.

Statement of Activities and Fixed Assets Expenditures 2016 and 2017 Budgets
STATUTORY

	2016 Budget	2016 Projection	Projection v 2016 Budget Over(Under)	2017 Budget	2017 Budget v 2016 Budget Over (Under)	% Over (Under)
Funding						
NERC Assessments	$ 57,081,445	$ 57,081,445	$ (0)	$ 59,856,314	$ 2,774,868	4.9%
Penalty Sanctions	1,439,000	1,439,000	-	1,100,000	(339,000)	
Third-Party Funding (CRISP)	6,830,738	7,335,757	505,019	6,990,447	159,709	
Testing Fees	1,867,972	1,867,972	-	1,921,900	53,928	
Services & Software	50,000	50,000	-	50,000	-	
Workshops	230,000	269,201	39,201	230,000	-	
Interest	3,000	35,898	32,898	3,000	-	
Total Funding (A)	**$ 67,502,155**	**$ 68,079,475**	**$ 577,320**	**$ 70,151,660**	**$ 2,649,505**	**3.9%**
Expenses						
Personnel Expenses	$ 37,283,807	$ 37,288,967	$ 5,161	$ 38,641,331	$ 1,357,525	3.6%
Meeting Expenses	3,620,286	3,646,564	26,278	3,372,886	(247,400)	-6.8%
Operating Expenses	24,903,515	25,947,939	1,044,424	24,800,690	(102,825)	-0.4%
Other Non-Operating Expenses	110,000	100,668	(9,332)	106,725	(3,275)	-3.0%
Total Expenses	**$ 65,917,608**	**$ 66,984,139**	**$ 1,066,531**	**$ 66,921,632**	**$ 1,004,024**	**1.5%**
Fixed Assets						
Depreciation	$ (2,641,943)	$ (2,558,606)	$ 83,336	$ (1,691,457)	$ 950,486	
Computer & Software CapEx	2,447,000	2,362,402	(84,598)	2,572,000	125,000	
Equipment CapEx	1,464,000	1,545,797	81,797	1,800,000	336,000	
Inc(Dec) in Fixed Assets	**1,269,057**	**1,349,593**	**80,535**	**2,680,543**	**1,411,486**	
TOTAL BUDGET	**$ 67,186,665**	**$ 68,333,732**	**$ 1,147,067**	**$ 69,602,175**	**$ 2,415,510**	**3.6%**
FTEs	**192.5**	**188.6**	**(3.9)**	**189.9**	**(2.6)**	**-1.3%**

NERC's 2017 budget and funding requirements reflect the resources necessary to support achievement of the goals and objectives set forth in the Strategic Plan. The 2017 budget is comprised of both operating and capital (fixed asset) costs. Operating costs generally include personnel, consulting, office space, software licensing, third-party data management, and communications and other customary services to support office operations. Fixed asset (capital) costs primarily reflect investments in equipment and software to support operations, including investments in the development of software applications and infrastructure to facilitate improved business processes and efficiency.

Key Budget Assumptions

Key assumptions used in the development of NERC's 2017 budget include the following:

- Maintaining FTEs at a similar level as 2016. Management routinely reviews resource allocation to ensure that the appropriate amount and type of resources are being dedicated to key priorities and activities. As operations in some areas become more efficient and/or major initiatives are completed, resources are redeployed to priority areas. For example, as work on reliability standards reduced as regulatory obligations were addressed, it was possible to reallocate some of those resources to support additional compliance assurance, reliability risk assessment, and security needs without increasing the company's overall FTE budget.
- Applying a 6.0% reduction to FTEs (vacancy rate) to account for attrition and hiring delays. This assumption is based on a review and analysis of historic attrition and vacancy rates, as well as the time it takes to recruit and onboard new staff. This is reduction in the historical vacancy rate

assumptions and reflects the ongoing management focus on recruiting and retaining appropriate resources.

- Market-based compensation for personnel. Executive and staff compensation and benefits are established based on guidelines established by NERC's Corporate Governance and Human Resources Committee and comprehensive market compensation and benefit information provided by a leading nationally recognized compensation and benefits consulting firm, as well as other available data. An updated market study was completed in late 2015 under the oversight of NERC's Corporate Governance and Human Resources Committee.
- Anticipating market increases in medical and dental benefit plan costs. Medical and dental premium cost estimates are based on market data provided by the company's benefits consultant. Current 2017 budget estimates are in the upper end of the range provided by NERC's benefits consultant. This estimate will continue to be evaluated prior to finalization of the recommended 2017 budget. No other changes to retirement or other benefit plans have been assumed for 2017.
- In 2015, the Electricity Subsector Coordinating Council (ESCC)[13] presented its recommendations resulting from a review of the E-ISAC operations performed that year. These recommendations included a request to evaluate and potentially enhance the user interface and underlying functionality of the E-ISAC portal. In 2015, the ESCC established a Member Executive Committee (MEC) to provide guidance with respect to various E-ISAC matters, including improvements to the E-ISAC portal. As part of an approved 2016 work plan, the E-ISAC staff worked closely with the MEC to develop a business case and funding estimates for these improvements. A power point presentation summarizing the business case, funding estimate and additional detail regarding the portal improvement project is attached as Exhibit F.

  The 2017 E-ISAC budget includes $1M for the portal enhancements ($250,000 of which is allocated to CRISP) for the portal project. The annual impact of the proposed $1M investment on assessments will be approximately $250,000 since projects of this nature are typically financed through NERC's capital financing program and funded over a three year period. The MEC has provided written comments in support of this investment.[14]
- Meeting and travel expenses are being held flat based on a review of 2015 and 2016 costs. The company has undertaken a number of significant efforts over the past several years to reduce travel and meeting expenses. For example, the company has worked closely with Regional Entities to share meeting space where possible, which has helped reduce meeting costs.
- Contractor and consulting expenses are developed on a department-by-department basis and reflect both known and anticipated expenses, based on historic and current information.

[13] The Electricity Subsector Coordinating Council (ESCC) serves as the principal liaison between the federal government and the electric power sector, with the mission of coordinating efforts to prepare for, and respond to, national-level disasters or threats to critical infrastructure. The ESCC includes utility CEOs and trade association leaders representing all segments of the industry. Its counterparts include senior Administration officials from the White House, relevant Cabinet agencies, federal law enforcement, and national security organizations.

[14] MEC's comments are available on NERC's website

The following table summarizes total year-over-year contractor and consulting costs by department.

Consultants & Contracts	2016 BUDGET	2017 BUDGET	2017 vs 2016 Budget
Compliance Assurance	200,000	50,000	(150,000)
Event Analysis	56,000	-	(56,000)
Compliance Investigation, Registration and Certification	50,000	-	(50,000)
Reliability Assessments and System Analysis	575,000	525,000	(50,000)
Performance Analysis	509,039	528,082	19,044
Situation Awareness	1,211,475	1,295,850	84,375
E-ISAC	663,335	899,835	236,500
CRISP	5,888,594	5,888,594	-
System Operator Certification	327,600	219,800	(107,800)
Continuing Education, Training & Education	348,200	360,800	12,600
General & Administrative	95,000	15,000	(80,000)
Information Technology	2,094,671	2,312,787	218,116
Human Resources	550,000	575,000	25,000
Finance and Accounting	297,000	457,000	160,000
TOTAL CONSULTANTS AND CONTRACTS	**12,865,914**	**13,127,749**	**261,835**

The Compliance Assurance department will require ongoing, though significantly reduced, consulting support for implementation of compliance assurance reform initiatives. Contract and consulting expenses for Reliability Assessment and System Analysis and for Performance Analysis are largely for software and services supporting reliability data management and analysis. Situation Awareness costs are primarily related to licenses and services supporting Situation Awareness for FERC, NERC, and the Regional Entities (SAFNR), and other reliability information and notification (e.g., alerts) systems.

E-ISAC consulting costs for 2017 include support for GridEx and analytical tools. Approximately $6M of the total E-ISAC contract and consulting costs are CRISP related (as shown separately in the table above) and funded by CRISP participants.

Training, Education, and Operator Certification contract and consulting costs include the cost of operator certification, training, and continuing education programs, and training NERC personnel. It also includes cost for supporting compliance and enforcement (risk-based CMEP) and other training initiatives.

Information Technology (IT) contract and consulting support is primarily for systems and software maintenance and support services, including costs for enhancements to and maintenance of enterprise applications. Costs associated with IT security programs and the ongoing implementation and support of a document management program are also included. Software development costs are primarily budgeted under fixed (capital) assets and are discussed further below.

Human Resources contract and consulting costs are primarily for employee training, various surveys, compensation studies, and consulting services to support improvements in human resource information systems.

Finance and Accounting costs are primarily for audit and consulting services to support the Enterprise Risk Management and Internal Control audit plan and Compliance and Certification Committee (CCC) audit plan, as well as consulting services to implement new financial reporting tools and review insurance strategy and solutions.

Fixed Asset (Capital) Budget and Capital Financing

NERC's 2017 capital budget is approximately $4.4M (excluding depreciation), which represents an increase of approximately $461k from 2016. The table below provides a summary of the major capital budget components.

NERC CAPITAL BUDGET	2016	2017
ERO Application Development	$ 1,500,000	$ 700,000
E-ISAC Portal Development		1,000,000
Document Management	465,000	335,000
Hardware (Storage, servers, laptops)	955,000	991,000
Other Equipment	535,000	885,000
Disaster Recovery	200,000	150,000
NERC Software licenses	256,000	311,000
Total Capital Budget	**$ 3,911,000**	**$ 4,372,000**

NERC has budgeted $2.2M (both operating expenses and capital expenditures) in 2017 for services related to the planning, design, and implementation of software applications supporting the development of enterprise tools for common NERC and Regional Entity operations. These ERO Enterprise related costs include $700k in capital expenditures and $1.5M in other IT operating costs. Senior management from NERC and the Regional Entities refined and updated the ERO Enterprise's long-term IT architecture and data management plans and the specific applications that will be under development in 2017. Section A, Information Technology department, below, offers further detail regarding updates to the Enterprise IT Strategy; the current status of the development of Enterprise IT applications; and projects that will be under development in 2017. The proposed $2.2M budget for 2017 related to enterprise application development and support is less than the 2017 projection presented in NERC's *2016 Business Plan and Budget* due primarily to the decision to delay the development of a replacement for the current compliance monitoring and enforcement reporting and tracking system (CRATS) to 2018. Further information regarding the ERO Enterprise application development plan and budget is contained in Section A – Information Technology department. NERC's 2017 capital budget also includes ongoing funding for IT security, disaster recovery, data storage, replacement of servers and laptops, and software license costs.

The 2017 budget projection assumes that approximately $1.5M of the total $4.4M capital budget will be financed through the capital financing program that was described and put in place as part of NERC's *2014 Business Plan and Budget*. Further information regarding capital financing may be found in Exhibit D.

Working Capital and Operating Reserves

Management is proposing an overall reserve budget of $7.8M for Working Capital, the four categories of Operating Reserves and the Assessment Stabilization Reserve under the company's Working Capital and Operating Reserve Policy. This represents a decrease of $1.1M (11.9%) from the total reserve amounts included in NERC's approved 2016 budget. While individual categories reflect increases and decreases resulting from operating needs and uses, the 2017 budget does not reflect additional working capital requirements in total. Pursuant to the company's Working Capital and Operating Reserve Policy, funds reserved for future liabilities are now budgeted under a separate reserve category entitled Future Obligation Reserve. This reserve is primarily comprised of existing funds and is budgeted to be $2.6M for 2017. The second category of operating reserves is the System Operating Certification Reserve. The 2017 System Operator Certification Reserve is budgeted at $714k and comprised of existing funds. The third category of operating reserves is the CRISP Operating Reserve, which represents funds dedicated to support CRISP. Similar to 2016, these reserves are established pursuant to a CRISP budget agreed to and funded entirely by utilities participating in CRISP. These reserves have no impact on assessments and they are segregated from other reserves pursuant to the terms of the CRISP agreements. The CRISP reserves are projected to be $500k in the 2017 budget.

The fourth category of operating reserves is the Operating Contingency Reserve. This reserve includes funds for expenditures that were not anticipated at the time the company's budget was prepared or for which the timing was uncertain. NERC's current policy on Operating Contingency Reserves requires a reserve target of 3.5–7.0%, except as otherwise approved by the Board after review and recommendation by the NERC Finance and Audit Committee. This percentage is calculated against NERC's total budget for operating and capital expenditures, less those costs related to CRISP and System Operator Certification, each of which has a separate reserve category. For this draft of the 2017 budget, management is recommending an Operating Contingency Reserve of approximately $2.2M, or 3.7% of total budgeted operating and capital costs, excluding CRISP and System Operator costs, which is slightly less than the minimum recommended in the policy but within the discretion of the NERC Board of Trustees to approve, upon review and recommendation of NERC's Finance and Audit Committee.

In addition to the four categories of operating reserves and as previously discussed, the company's amended Working Capital and Operating Reserve Policy also provides for an Assessment Stabilization Reserve. To date, this reserve has been funded entirely by previously received penalties and is projected to have a balance of $2.7M as of January 1, 2017, including the proposed deposit of $500k of Penalties received during the period July 1, 2015 – June 30, 2016 (subject to requisite approvals). For purposes of the company's *2017 Business Plan and Budget*, management proposes the release of $1.1M in Assessment Stabilization Reserve funds to offset assessments. The use of $1.1M to offset assessments in 2017 yields an average increase of 4.9% over the 2016 assessments. The remaining balance of $1.7M in the Assessment Stabilization Reserve will be used to reduce assessments in one or more future periods, subject to review and approval by the NERC Board and the Commission in the applicable year's business plan and budget. A further discussion of the use of this remaining Assessment Stabilization Reserve balance may be found below in the section entitled 2018-2019 Projections.

Department Budget and FTE Comparisons

The following tables set forth a 2016–2017 total budget comparison by department. The amounts shown below reflect all direct and indirect departmental costs, including fixed asset costs. Costs incurred for general and administrative and other overheads are considered indirect, and are allocated to the statutory departments based on the ratio of that department's budgeted FTEs to total budgeted FTEs.

2016–2017 Total Budget by Department

Total Budget	Budget 2016	Budget 2017	Change 2017 Budget v 2016 Budget	% Change
Reliability Standards	**8,193,116**	**8,100,282**	**(92,834)**	**-1.1%**
Compliance Assurance	**9,420,903**	**7,858,599**	**(1,562,305)**	**-16.6%**
Compliance Analysis, Certificaton and Registration	**4,632,871**	**3,646,289**	**(986,582)**	**-21.3%**
Compliance Enforcement	**5,293,298**	**5,800,647**	**507,349**	**9.6%**
Reliability Assessments and Performance Analysis				
Reliability Assessments and System Analysis	**6,342,917**	**7,535,594**	**1,192,677**	**18.8%**
Performance Analysis*	**3,575,811**	**4,908,855**	**1,333,044**	**37.3%**
Reliability Risk Management				
Event Analysis	**5,355,795**	**5,446,206**	**90,411**	**1.7%**
Situation Awareness	**3,692,197**	**4,032,862**	**340,664**	**9.2%**
E-ISAC	**16,767,525**	**18,515,341**	**1,747,816**	**10.4%**
Training, Education and Operator Certification	**3,912,231**	**3,757,501**	**(154,731)**	**-4.0%**
Total Budget	**67,186,665**	**69,602,175**	**2,415,511**	**3.6%**

**Internally managed under Reliability Risk Management Department*

The decreases in the Compliance Analysis, Certification and Registration, and Compliance Assurance departments' costs are primarily due to the transfer of resources from these departments as part of the ongoing process of internal reorganization to better align resources to support strategic goals and risk priorities. The increase in the Reliability Assessment and Performance Analysis program area[15] and Event Analysis department budget are due to the reallocation of resources to those areas to further support increased reliability risk assessment and analysis resource priorities. The increase in the Situation Awareness department budget is primarily due to enhancement or modification of reliability-related situation awareness and monitoring tools. The increase in the E-ISAC department budget is primarily due to planned enhancements to the E-ISAC portal and to the 2017 GridEx (which was not held in 2016).

The following table presents a 2017 versus 2016 comparison of budgeted FTEs by department and reflects 2016 personnel additions, interdepartmental transfers, and attrition assumptions. The number of FTEs represents the number of employees employed full time during the year, plus the number of employees employed part time (less than full schedule) or during a portion of the year converted to a full-time basis. Headcount represents the total number of personnel employed during the year, regardless of the length of their employment during that year. FTEs will be less than headcount, unless there are no part-time employees or employees who are employed less than a full year. The company's 2017 personnel budget is based upon existing headcount and associated compensation and benefit costs, as well as assumptions on the number and cost of new hires and the assumed vacancy rate, all within an overall FTE budget. An average vacancy rate is applied to each position and its associated costs to arrive at an overall personnel cost budget. The vacancy rate represents an adjustment, which is applied in the calculation of budgeted personnel costs to account for attrition and for variations from the budget assumptions on the timing of new hires.

[15] The Reliability Assessment and Performance Analysis program area has been reorganized into two separate departments: (1) Reliability Assessments and System Analysis; and (2) Performance Analysis. The Performance Analysis department is internally managed by the Vice President of Reliability Risk Management.

2016–2017 Year-Over-Year Comparison of FTEs by Department

Total FTE's by Program Area	Budget 2016	Budget 2017	Change from 2016 Budget	% Change from 2016
STATUTORY				
Operational Programs				
Reliability Standards	17.98	17.16	(0.8)	-4.6%
Compliance Assurance	19.36	15.51	(3.9)	-19.9%
Compliance Analysis, Certification and Registration	10.14	7.52	(2.6)	-25.8%
Compliance Enforcement	12.22	13.16	0.9	7.7%
Reliability Assessments and System Analysis	11.75	14.10	2.3	20.0%
Performance Analysis	6.92	9.40	2.5	35.9%
Event Analysis	11.06	11.28	0.2	2.0%
Situation Awareness	5.53	5.64	0.1	2.0%
E-ISAC	18.90	19.74	0.8	4.4%
Training, Education and Operator Certification	7.38	7.05	(0.3)	-4.4%
Total FTEs Operational Programs	**121.24**	**120.56**	**(0.7)**	**-0.6%**
Administrative Programs				
General & Administrative	17.52	16.92	(0.6)	-3.4%
Legal and Regulatory	12.22	11.28	(0.9)	-7.7%
Information Technology	22.13	23.27	1.1	5.1%
Human Resources	2.77	2.82	0.0	1.8%
Finance and Accounting	16.60	15.04	(1.6)	-9.4%
Total FTEs Administrative Programs	**71.23**	**69.33**	**(1.9)**	**-2.7%**
Total FTEs	**192.47**	**189.88**	**(2.5)**	**-1.3%**

*Reflects 2017 additions and transfers between departments, anticipated timing of 2017 hires, and assumes 6% attrition in all programs

Total FTEs in the Administrative Programs is decreasing by 1.9 FTE (2.7%), reflecting reallocation of resources among the various departments The increase in Information Technology FTEs is due to the reallocation of personnel to strengthen project management oversight over NERC and ERO Enterprise software application development and implementation.

The NERC 2017 organizational chart can be found in Appendix 1**.** The difference between the number of positions reflected in the 2017 organizational chart and total 2017 budgeted FTEs is due to assumptions regarding vacancy rates and timing of new hires.

The following pages include a statement of activities comparing the 2016 budget and the proposed 2017 budget, followed by a statement of activities comparing the 2016 budget and the proposed 2017 budget with and without CRISP.

Statement of Activities and Fixed Assets Expenditures 2016 and 2017 Budgets

STATUTORY

	2016 Budget	2016 Projection	Variance 2016 Projection v 2016 Budget Over(Under)	2017 Budget	Variance 2017 Budget v 2016 Budget Over(Under)	% Inc 2017 over 2016
Funding						
ERO Funding						
NERC Assessments	$ 57,081,445	$ 57,081,445	$ (0)	$ 59,856,314	$ 2,774,868	**4.9%**
Penalty Sanctions	1,439,000	1,439,000	-	1,100,000	(339,000)	
Total NERC Funding	**$ 58,520,445**	**$ 58,520,445**	**$ (0)**	**$ 60,956,314**	**$ 2,435,868**	
Third-Party Funding (CRISP)	6,830,738	7,335,757	505,019	6,990,447	159,709	
Testing Fees	1,867,972	1,867,972	-	1,921,900	53,928	
Services & Software	50,000	50,000	-	50,000	-	
Workshops	230,000	269,201	39,201	230,000	-	
Interest	3,000	35,898	32,898	3,000	-	
Miscellaneous	-	202	202	-	-	
Total Funding (A)	**$ 67,502,155**	**$ 68,079,475**	**$ 577,320**	**$ 70,151,660**	**$ 2,649,505**	**3.9%**
Expenses						
Personnel Expenses						
Salaries	$ 28,842,336	$ 29,052,918	$ 210,581	$ 30,073,438	$ 1,231,102	
Payroll Taxes	1,871,367	1,830,724	(40,643)	$ 1,847,130	(24,237)	
Benefits	3,579,280	3,390,190	(189,090)	$ 3,643,806	64,526	
Retirement Costs	2,990,823	3,015,135	24,312	$ 3,076,956	86,134	
Total Personnel Expenses	**$ 37,283,807**	**$ 37,288,967**	**$ 5,161**	**$ 38,641,331**	**$ 1,357,525**	**3.6%**
Meeting Expenses						
Meetings	$ 1,096,500	$ 1,194,500	$ 98,000	$ 1,071,500	$ (25,000)	
Travel	2,203,786	2,190,184	(13,602)	2,203,786	(0)	
Conference Calls	320,000	261,880	(58,120)	97,600	(222,400)	
Total Meeting Expenses	**$ 3,620,286**	**$ 3,646,564**	**$ 26,278**	**$ 3,372,886**	**$ (247,400)**	**-6.8%**
Operating Expenses						
Consultants & Contracts	$ 12,865,914	$ 13,972,958	$ 1,107,044	$ 13,127,749	$ 261,835	
Office Rent	3,054,287	3,224,287	170,000	3,117,009	62,722	
Office Costs	3,795,572	3,740,288	(55,284)	4,359,340	563,768	
Professional Services	2,509,300	2,414,300	(95,000)	2,468,135	(41,165)	
Miscellaneous	36,500	37,500	1,000	37,000	500	
Depreciation	2,641,943	2,558,606	(83,336)	1,691,457	(950,486)	
Total Operating Expenses	**$ 24,903,515**	**$ 25,947,939**	**$ 1,044,424**	**$ 24,800,690**	**$ (102,825)**	**-0.4%**
Total Direct Expenses	**$ 65,807,608**	**$ 66,883,471**	**$ 1,075,863**	**$ 66,814,907**	**$ 1,007,299**	**1.5%**
Indirect Expenses	**$ -**	**$ 0**	**$ 0**	**$ 0**	**$ 0**	
Other Non-Operating Expenses	**$ 110,000**	**$ 100,668**	**$ (9,332)**	**$ 106,725**	**$ (3,275)**	**-3.0%**
Total Expenses (B)	**$ 65,917,608**	**$ 66,984,139**	**$ 1,066,531**	**$ 66,921,632**	**$ 1,004,024**	**1.5%**
Change in Assets	**$ 1,584,548**	**$ 1,095,336**	**$ (489,211)**	**$ 3,230,028**	**$ 1,645,481**	
Fixed Assets						
Depreciation	$ (2,641,943)	$ (2,558,606)	83,336	$ (1,691,457)	$ 950,486	
Computer & Software CapEx	2,447,000	2,362,402	(84,598)	2,572,000	125,000	**10.5%**
Furniture & Fixtures CapEx	-	-	-	-	-	
Equipment CapEx	1,464,000	1,545,797	81,797	1,800,000	336,000	
Leasehold Improvements	-	-	-	-	-	
Allocation of Fixed Assets	**$ (0)**	$ (0)	$ 0	$ 0	$ 0	
Inc(Dec) in Fixed Assets (C)	**1,269,057**	**1,349,593**	**80,535**	**2,680,543**	**1,411,486**	
TOTAL BUDGET (=B + C)	**$ 67,186,665**	**$ 68,333,732**	**$ 1,147,067**	**$ 69,602,175**	**$ 2,415,510**	**3.6%**
TOTAL CHANGE IN WORKING CAPITAL (=A-B-C)[1]	**$ 315,490**	**$ (254,257)**	**$ (569,747)**	**$ 549,485**	**$ (716,491)**	
FTEs	**192.5**	**188.6**	**(3.9)**	**189.88**	**(2.6)**	**-1.3%**

[1]The budgeted change in working capital reflects both a reduction in excess working capital and operating reserves and the assumptions related to capital financing. Refer to Table B-1 on page 81 for a complete analysis of the Working Capital and Operating Reserve balance.

Statement of Activities and Fixed Assets Expenditures 2016 and 2017 Budgets
STATUTORY

	2016 Budget	2016 CRISP Budget	2016 Budget w/out CRISP	2017 Budget	2017 CRISP Budget	2017 Budget w/out CRISP	Variance 2017 Budget v 2016 Budget w/out CRISP Over(Under)	% Inc 2017 over 2016
Funding								
ERO Funding								
NERC Assessments	$ 57,081,445	$ 1,108,641	$ 55,972,805	$ 59,856,314	$ 1,275,681	$ 58,580,633	$ 2,607,828	**4.7%**
Penalty Sanctions	1,439,000	33,572	$ 1,405,428	1,100,000	26,243	1,073,757	(331,671)	
Total NERC Funding	**$ 58,520,445**	**$ 1,142,213**	**$ 57,378,232**	**$ 60,956,314**	**$ 1,301,923**	**$ 59,654,390**	**$ 2,276,158**	
Third-Party Funding (CRISP)	6,830,738	6,830,738	$ -	6,990,447	6,990,447	$ -	-	
Testing Fees	1,867,972	-	$ 1,867,972	1,921,900	-	$ 1,921,900	53,928	
Services & Software	50,000	-	$ 50,000	50,000	-	$ 50,000	-	
Workshops	230,000	-	$ 230,000	230,000	-	$ 230,000	-	
Interest	3,000	68	$ 2,932	3,000	70	$ 2,930	(2)	
Miscellaneous	-	-	$ -	-	-	$ -	-	
Total Funding (A)	**$ 67,502,155**	**$ 7,973,019**	**$ 59,529,136**	**$ 70,151,660**	**$ 8,292,440**	**$ 61,859,220**	**$ 2,330,084**	**3.9%**
Expenses								
Personnel Expenses								
Salaries	$ 28,842,336	$ 592,724	$ 28,249,612	$ 30,073,438	$ 603,432	$ 29,470,007	$ 1,220,394	
Payroll Taxes	1,871,367	32,899	$ 1,838,469	1,847,130	32,329	$ 1,814,801	(23,668)	
Benefits	3,579,280	50,247	$ 3,529,034	3,643,806	68,375	$ 3,575,431	46,398	
Retirement Costs	2,990,823	65,802	$ 2,925,021	3,076,956	64,236	$ 3,012,721	87,700	
Total Personnel Expenses	**$ 37,283,807**	**$ 741,671**	**$ 36,542,135**	**$ 38,641,331**	**$ 768,371**	**$ 37,872,960**	**$ 1,330,825**	**3.6%**
Meeting Expenses								
Meetings	$ 1,096,500	$ 30,000	$ 1,066,500	$ 1,071,500	$ 30,000	$ 1,041,500	$ (25,000)	
Travel	2,203,786	37,455	$ 2,166,331	2,203,786	37,455	$ 2,166,331	(0)	
Conference Calls	320,000	2,000	$ 318,000	97,600	2,237	$ 95,363	(222,637)	
Total Meeting Expenses	**$ 3,620,286**	**$ 69,455**	**$ 3,550,831**	**$ 3,372,886**	**$ 69,692**	**$ 3,303,194**	**$ (247,637)**	**-7.0%**
Operating Expenses								
Consultants & Contracts	$ 12,865,914	$ 5,888,594	$ 6,977,320	$ 13,127,749	$ 5,888,594	$ 7,239,155	$ 261,835	
Office Rent	3,054,287	-	$ 3,054,287	3,117,009	-	$ 3,117,009	62,722	
Office Costs	3,795,572	304,027	$ 3,491,545	4,359,340	305,683	$ 4,053,657	562,112	
Professional Services	2,509,300	175,000	$ 2,334,300	2,468,135	175,000	$ 2,293,135	(41,165)	
Miscellaneous	36,500	250	$ 36,250	37,000	250	$ 36,750	500	
Depreciation	2,641,943	-	$ 2,641,943	1,691,457	5,297	$ 1,686,159	(955,783)	
Total Operating Expenses	**$ 24,903,515**	**$ 6,367,871**	**$ 18,535,644**	**$ 24,800,690**	**$ 6,374,824**	**$ 18,425,865**	**$ (109,779)**	**-0.6%**
Total Direct Expenses	**$ 65,807,608**	**$ 7,178,997**	**$ 58,628,611**	**$ 66,814,907**	**$ 7,212,888**	**$ 59,602,019**	**$ 973,409**	**1.7%**
Indirect Expenses	**$ -**	**$ 650,361**	**$ (650,361)**	**$ 0**	**$ 687,169**	**$ (687,169)**	**$ (36,809)**	
Other Non-Operating Expenses	**$ 110,000**	**$ -**	**$ 110,000**	**$ 106,725**	**$ -**	**$ 106,725**	**$ (3,275)**	**-3.0%**
Total Expenses (B)	**$ 65,917,608**	**$ 7,829,358**	**$ 58,088,250**	**$ 66,921,632**	**$ 7,900,057**	**$ 59,021,575**	**$ 933,325**	**1.6%**
Change in Assets	**$ 1,584,548**	**$ 143,662**	**$ 1,440,886**	**$ 3,230,028**	**$ 392,383**	**$ 2,837,645**	**$ 1,396,759**	
Fixed Assets								
Depreciation	$ (2,641,943)	$ -	$ (2,641,943)	$ (1,691,457)	$ (5,297)	$ (1,686,159)	$ 955,783	
Computer & Software CapEx	2,447,000	100,000	2,347,000	2,572,000	350,000	2,222,000	(125,000)	
Furniture & Fixtures CapEx	-	-	-	-	-	-	-	
Equipment CapEx	1,464,000	-	1,464,000	1,800,000	-	1,800,000	336,000	
Leasehold Improvements	-	-	-	-	-	-	-	
Allocation of Fixed Assets	**$ (0)**	$ 43,105	$ (43,105)	$ 0	$ 47,681	$ (47,681)	$ (4,575)	
Inc(Dec) in Fixed Assets (C)	**1,269,057**	**143,105**	**1,125,952**	**2,680,543**	**392,383**	**2,288,160**	**1,162,208**	**103.2%**
TOTAL BUDGET (=B + C)	**$ 67,186,665**	**$ 7,972,463**	**$ 59,214,202**	**$ 69,602,175**	**$ 8,292,440**	**$ 61,309,735**	**$ 2,095,533**	**3.5%**
TOTAL CHANGE IN WORKING CAPITAL (=A-B-C)[1]	**$ 315,490**	**$ 556**	**$ 314,934**	**$ 549,485**	**$ -**	**$ 549,485**	**$ 234,551**	
FTEs	**192.47**	**2.8**	**189.71**	**189.88**	**2.8**	**187.06**	**(2.6)**	**-1.4%**

Projections for 2018–2019

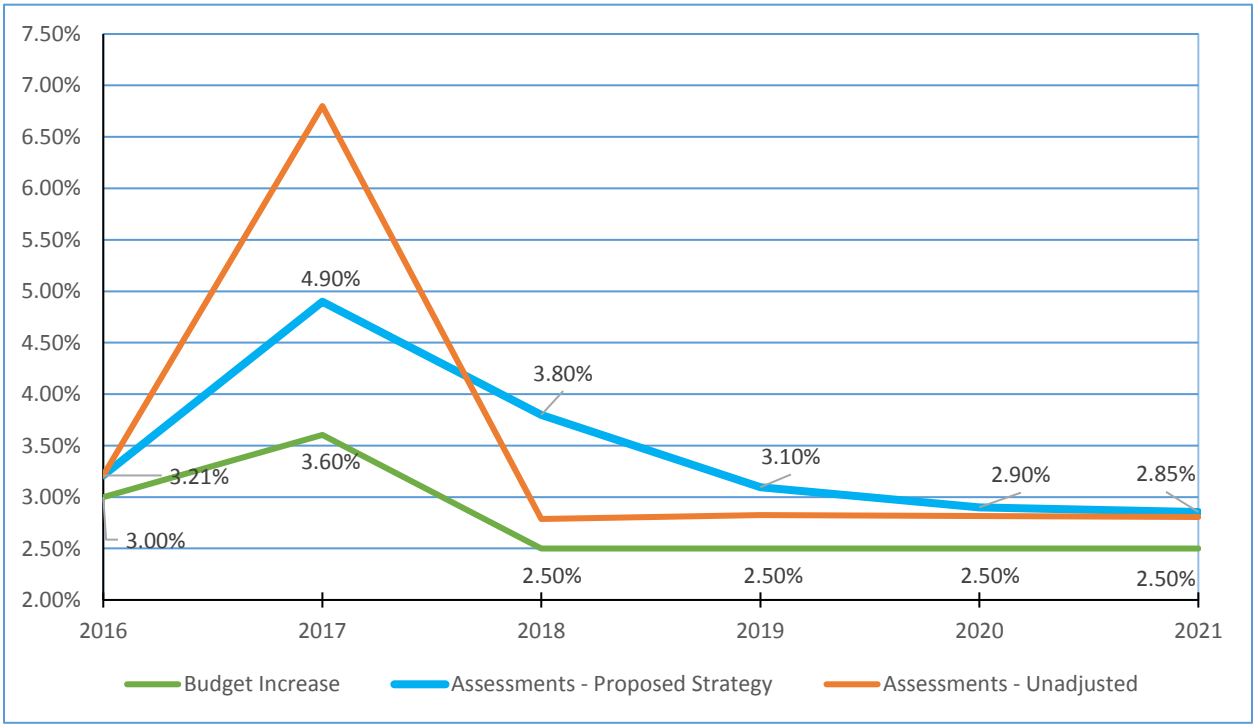
Management has developed preliminary operating and fixed asset (capital) projections for 2018 and 2019. The significant assumptions considered in preparing these projections include:

- No increases in total FTEs over the 2017 budget
- Personnel and benefit cost increases per FTE are consistent with the 2017 budget assumptions
- Operating costs, including contractor and consulting expenses, are slightly higher due to increases in costs for rent, maintenance costs associated with software applications supporting ERO Enterprise Operations, and ongoing implementation of improved budgeting and financial reporting tools.

- Debt service repayment obligations in connection with the company's Capital Financing Program are consistent with the projected Enterprise IT Applications capital forecast
- No increase in CRISP-related expenditures, except for personnel and benefit cost increases as noted above

Assessments are projected to increase by gradually declining percentages during the next three years as NERC implements an assessment stabilization strategy. The goal of this strategy is to align budgeted costs and assessment increases more closely so that the year-to-year variations in receipt of penalties will not cause large variations in future assessments. Currently, NERC projects assessments to increase 4.5% in 2017, 3.8% in 2018, and 3.1% in 2019 with declining releases each year from the Assessment Stabilization Reserve to meet these targets. A summary of these projections and reserve releases is shown in the table below. An annual budget increase of 2.5% was used for modeling purposes and is subject to change. The assessment stabilization strategy is also depicted in the graph below, showing the assumed budget increases, unadjusted assessment increases, and implementation of the assessment stabilization strategy.

	Budget	Assessment	----- Assessment Stabilization Reserve -----		
Year	Increase	Increase	Additions	Uses	Balance
2016	3.00%	3.21%	$ 3,710,000	$ (1,439,000)	$ 2,271,000
2017	3.60%	4.90%	500,000	(1,100,000)	1,671,000
2018	2.50%	3.80%	500,000	(410,000)	1,761,000
2019	2.50%	3.10%	-	(270,000)	1,491,000



The model does not assume any penalties beyond those NERC currently expects to receive in 2016 and 2017 and assumes that the NERC Board and the Commission will approve the contribution to the Assessment Stabilization Reserve of the $500k in penalty funds which NERC is scheduled receive in 2017 under the terms of an existing settlement agreement. While the current balance of the Assessment Stabilization reserve is substantial and there could be unexpected receipt of additional penalties

subsequent to June 30, 2016 (in addition to the $500k scheduled to be received in May 2017), funds in the Assessment Stabilization Reserve could be used, with Board and Commission approval, to stabilize future years' assessments in the event of unexpected budget increases, an anticipated ERO system development projects, or other one-time costs.[16]

[16] The company's Working Capital and Operating Reserve Policy requires that in determining the amount of the Assessment Stabilization Reserve that is released each year, the NERC Finance and Audit Committee and Board is to review a three-year forecast of assessments, as well as the availability of funding for the Assessment Stabilization Reserve from surplus funds and penalty funds. The actual contributions to and releases from the Assessment Stabilization Reserve in any year must be approved by the Board and the Commission as part of NERC's annual business plan and budget process, with opportunity for review and input by stakeholders.

Statement of Activities and Fixed Assets Expenditures
2017 Budget & Projected 2018 and 2019 Budgets

	2017 Budget	2018 Projection	$ Change 18 v 17	% Change 18 v 17	2019 Projection	$ Change 19 v 18	% Change 19 v 18
Funding							
ERO Funding							
NERC Assessments	$ 59,856,314	$ 62,143,946	$ 2,287,633	3.8%	$ 64,088,553	$ 1,944,607	3.1%
Assessment Stabilization Reserve - Penalties	1,100,000	410,000	(690,000)	-62.7%	-	(410,000)	-100.0%
Total NERC Funding	**$ 60,956,314**	**$ 62,553,946**	**$ 1,597,633**	**2.6%**	**$ 64,088,553**	**$ 1,534,607**	**2.5%**
Third-Party Funding (CRISP)	6,990,447	6,990,447	-	0.00%	6,990,447	-	0.0%
Testing Fees	1,921,900	1,921,900	-	0.00%	1,921,900	-	0.0%
Services & Software	50,000	50,000	-	0.00%	50,000	-	0.0%
Workshops	230,000	230,000	-	0.00%	230,000	-	0.0%
Interest	3,000	3,000	-	0.00%	3,000	-	0.0%
Miscellaneous	-		-			-	
Total Funding (A)	**$ 70,151,660**	**$ 71,749,293**	**$ 1,597,633**	**2.3%**	**$ 73,283,900**	**$ 1,534,607**	**2.1%**
Expenses							
Personnel Expenses							
Salaries	$ 30,073,438	$ 31,035,788	$ 962,350	3.2%	$ 31,966,862	$ 931,074	3.0%
Payroll Taxes	1,847,130	1,869,296	22,166	1.2%	1,893,597	24,301	1.3%
Benefits	3,643,806	3,887,941	244,135	6.7%	4,152,321	264,380	6.8%
Retirement Costs	3,076,956	3,141,573	64,616	2.1%	3,264,094	122,521	3.9%
Total Personnel Expenses	**$ 38,641,331**	**$ 39,934,598**	**$ 1,293,267**	**3.3%**	**$ 41,276,874**	**$ 1,342,276**	**3.4%**
Meeting Expenses							
Meetings	$ 1,071,500	$ 1,081,500	$ 10,000	0.9%	$ 1,071,500	(10,000)	-0.9%
Travel	2,203,786	2,203,786	-	0.0%	2,203,786	-	0.0%
Conference Calls	97,600	97,600	-	0.0%	97,600	-	0.0%
Total Meeting Expenses	**$ 3,372,886**	**$ 3,382,886**	**$ 10,000**	**0.3%**	**$ 3,372,886**	**$ (10,000)**	**-0.3%**
Operating Expenses							
Consultants & Contracts	$ 13,127,749	13,595,592	467,844	3.6%	14,367,077	771,485	5.7%
Office Rent	3,117,009	3,099,048	(17,961)	-0.6%	3,104,557	5,509	0.2%
Office Costs	4,359,340	4,359,340	-	0.0%	4,359,340	-	0.0%
Professional Services	2,468,135	2,652,075	183,940	7.5%	2,661,992	9,917	0.4%
Miscellaneous	37,000	37,000	-	0.0%	37,000	-	0.0%
Depreciation	1,691,457	1,194,345	(497,112)	-29.4%	932,549	(261,796)	-21.9%
Total Operating Expenses	**$ 24,800,690**	**$ 24,937,400**	**$ 136,711**	**0.6%**	**$ 25,462,516**	**$ 525,116**	**2.1%**
Total Direct Expenses	**$ 66,814,907**	**$ 68,254,885**	**$ 1,439,978**	**2.2%**	**$ 70,112,277**	**$ 1,857,392**	**2.7%**
Indirect Expenses	**$ -**	**$ -**			**$ -**	**$ -**	
Other Non-Operating Expenses	**$ 106,725**	**$ 114,000**	**$ 7,275**	**6.8%**	**116,000**	**2,000**	**1.8%**
Total Expenses (B)	**$ 66,921,632**	**$ 68,368,885**	**$ 1,447,253**	**2.2%**	**$ 70,228,277**	**1,859,392**	**2.7%**
Change in Assets	**$ 3,230,028**	**$ 3,380,408**	**$ 150,380**	**4.7%**	**$ 3,055,623**	**$ (324,785)**	**-9.6%**
Fixed Assets					-		
Depreciation	$ (1,691,457)	$ (1,194,345)	$ 497,112	-29.4%	$ (932,549)	$ 261,796	-21.9%
Computer & Software CapEx	2,572,000	2,562,000	(10,000)	-0.4%	2,112,000	(450,000)	-17.6%
Furniture & Fixtures CapEx	-	-	-		-	-	
Equipment CapEx	1,800,000	1,585,000	(215,000)	-11.9%	1,705,000	120,000	7.6%
Leasehold Improvements	-	-	-		-	-	
Allocation of Fixed Assets							
Inc(Dec) in Fixed Assets (C)	**$ 2,680,543**	**$ 2,952,655**	**$ 272,112**	**10.2%**	**$ 2,884,451**	**$ (68,204)**	**-2.3%**
TOTAL BUDGET (=B + C)	**$ 69,602,175**	**$ 71,321,540**	**$ 1,719,364**	**2.5%**	**$ 73,112,727**	**$ 1,791,188**	**2.5%**
FTEs	**189.88**	**189.88**	**-**		**189.88**	**-**	

Section A — 2017 Business Plan and Budget Program Area and Department Detail

Reliability Standards

Reliability Standards Program (in whole dollars)	2016 Budget	2017 Budget	Increase (Decrease)
Total FTEs	17.98	17.16	(0.82)
Direct Expenses	$ 3,888,768	$ 3,861,666	$ (27,102)
Indirect Expenses	4,234,020	4,180,279	(53,741)
Other Non-Operating Expenses	-	-	-
Inc(Dec) in Fixed Assets	70,328	58,337	(11,991)
TOTAL BUDGET	$ 8,193,116	$ 8,100,282	$ (92,835)

Background and Scope

The reliability standards program carries out the ERO's statutory responsibility to develop, adopt, obtain approval of, and modify (as and when appropriate) mandatory reliability standards (both continent-wide standards and regional reliability standards) for the reliable planning, operation, and critical infrastructure protection of the North American BES. The major activities undertaken by the Standards department include:

- **Delivering high-quality, continent-wide reliability standards**: NERC standard developers and other standards staff provide project management and leadership to develop solutions necessary to address reliability risks identified through the Reliability Risk Management Process (RRMP). These may include the development of, or modifications to, NERC reliability standards through standard development outreach activities, facilitation of drafting team activities, drafting support, assisting drafting teams in maintaining adherence to the development process as outlined in the *Standard Processes Manual*, and ensuring that the quality of documents produced is appropriate for approval by industry and the Board.
- **Facilitating continent-wide industry engagement**: NERC manages the work of over 200 industry contributors who serve on the Standards Committee, subgroups, and other project teams for the development of NERC reliability standards through the standards development program.
- **Conducting balloting, disseminating information, and supporting regulatory filings**: Through NERC's commenting and ANSI-accredited balloting process, industry consensus is built by engaging thousands of industry volunteers within hundreds of registered entities throughout North America who review, comment on, and approve the standards created by the standard drafting teams. The department also supports the filing of standards with regulatory authorities and provides support with regulatory proceedings.

The reliability standards program provides a mechanism for the eight Regional Entities to process regional standards when unique regional reliability gaps are detected, or incorporate Regional variances into continent-wide standards. The NERC Standards department staff supports regional standards development processes by providing technical advice, final quality review of regional standards,

presentation to the Board, and preparation of regional standards materials for submission for standard adoption to the applicable regulatory authorities in the United States and Canada.

Stakeholder Engagement and Cost Effectiveness Project

As part of the standard development process, industry technical experts scope, draft, and review the new or revised NERC reliability standards for approval by the industry ballot body, adoption by the Board, and filing with regulatory authorities in the United States and Canada. Additionally, Federal, State and Provincial regulatory authorities, the NERC Board of Trustees, Regional Entities, and many industry stakeholders have expressed interest in the identification of costs incurred from implementing NERC reliability standards compared to risks they address. The objective is to ensure that these elements are considered during the standards development and revision process. A pilot was conducted in 2016 to develop an approach to determine the level of cost versus the reliability benefit to mitigate an identified risk. Work will continue in 2017 on refining the approach.

Key Efforts Underway

NERC will ensure that the Reliability Standards Development Plan (RSDP) is effectively executed and that reliability standards are focused on and mitigate significant risks to BES reliability. Department resources will be focused on supporting the ERO Enterprise Strategic Plan, including but not limited to support of the RRMP and resolving FERC directives. The Standards department will:

1. **Focus on the selection of projects undertaken.** Resources will be expended on issues determined to be a reliability risk through the RRMP (also see the Reliability Assessment and System Analysis section and the Performance Analysis section, below, for additional detail). The department will apply broader project management skills to implement a variety of solutions to a reliability concern. An effective solution to an identified reliability risk may be a Reliability Standard, or it may be a guideline, information request, training, NERC Alert, technical conference, research, or a combination of these or other tools.
2. **Address FERC directives and respond to FERC orders** through standards development projects, as necessary. Each project will determine whether: (1) the directive will be complied with as issued, (2) there is an equally effective and efficient way to address the concern that fostered the directive, or (3) if there is technical justification (including that the directive has been overcome by events, processes, or advances in technology) that resolution of the directive is no longer needed.
3. **Perform Enhanced Periodic Reviews.** In 2016, as the reliability standards reach steady state, industry, NERC, and FERC will determine whether there is a need to make further improvements to the standards through enhanced periodic reviews, that include: (1) a measured review of the content of standards, considering whether the requirements could more effectively mitigate risks to the BPS; (2) whether the standards are results based and drafted with high quality; (3) whether the standards are concise or if the number of requirements could be reduced; and (4) whether compliance expectations are clear.
4. **Facilitate smooth transition to new standards**. This includes working with the Compliance Monitoring and Enforcement and Organization Registration and Certification, Reliability Assessment and System Analysis, and Performance Analysis programs to develop guidelines, webinars, and other activities to support auditor and industry training for the new standards.

The 2017–2019 RSDP will be developed in 2016 in conjunction with the Standards Committee, RISC, and RRMP. It will outline the work plan for the continued evaluation of NERC reliability standards, the Standards department's support of Reliability Risk Management, and resolution of FERC directives.

Additionally, associated metrics will be developed and deployed to measure the overall quality of the reliability standard as a basis for measuring needed improvements.

2017 Goals and Deliverables

The transformation of the reliability standards to steady state is nearing completion.[17] Specifically, the majority of FERC directives will be addressed, as well as the remaining recommendations for retiring requirements made by the Paragraph 81 project and the independent experts. The body of standards will be improved while considering quality and content criteria as well as results-based standards principles. The NERC Standards staff will continue to address any new directives issued by FERC as well any reliability risks identified through RRMP or by the RISC for which a Reliability Standard is part of the solution.

Resource Requirements

Personnel

As in prior years, industry engagement is vital to the successful development of standards. The continued transformation of NERC standards to steady state will require additional industry engagement throughout 2016. In 2017, industry subject matter expert engagement requirements will be ongoing as enhanced periodic reviews are performed.

The NERC standards department continues to focus resources on the production of quality standards, rather than solely on the monitoring and execution of the standards process. Workload in the standards area during 2017 is anticipated to remain stable, with no additional personnel resources planned for 2017. The departmental travel expenses are expected to be the same as the 2016 levels, given the anticipated amount of outreach for the number of standards reviews expected to be in process, coupled with cost savings resulting from holding more meetings at NERC's Atlanta and Washington, DC, offices. The FTE reduction (0.82 FTE) shown in the table at the end of this section is the result of the allocation of standards staff towards more critical activities like cyber security and analytical capabilities.

Contractors and Consultants

No contractor and consulting support is budgeted in 2017, which is consistent with the 2016 budget.

[17] As defined in the 2015-2017 RSDP, "steady state" means a stable set of clear, concise, high-quality and technically sound reliability standards that are results based, including retirement of requirements that do little to promote reliability.

Statement of Activities and Fixed Assets Expenditures
2016 Budget & Projection, and 2017 Budget
RELIABILITY STANDARDS

	2016 Budget	2016 Projection	Variance 2016 Projection v 2016 Budget Over(Under)	2017 Budget	Variance 2017 Budget v 2016 Budget Over(Under)
Funding					
ERO Funding					
NERC Assessments	$ 7,869,295	$ 7,869,295	$ (0)	$ 7,835,213	$ (34,082)
Assessment Stabilization Reserve - Penalties	218,376	218,376		159,642	(58,734)
Total NERC Funding	**$ 8,087,671**	**$ 8,087,671**	**$ (0)**	**$ 7,994,855**	**$ (92,816)**
Third-Party Funding	-	-	-	-	-
Testing Fees	-	-	-	-	-
Services & Software	-	-	-	-	-
Workshops	105,000	105,000	-	105,000	-
Interest	445	5,374	4,929	427	(18)
Miscellaneous	-	-	-	-	-
Total Funding (A)	**$ 8,193,116**	**$ 8,198,045**	**$ 4,929**	**$ 8,100,282**	**$ (92,834)**
Expenses					
Personnel Expenses					
Salaries	$ 2,260,735	$ 2,349,773	$ 89,039	$ 2,340,405	$ 79,671
Payroll Taxes	163,064	168,710	5,646	151,658	(11,406)
Benefits	327,239	289,808	(37,432)	307,085	(20,154)
Retirement Costs	250,560	265,961	15,401	259,407	8,847
Total Personnel Expenses	**$ 3,001,598**	**$ 3,074,252**	**$ 72,654**	**$ 3,058,556**	**$ 56,958**
Meeting Expenses					
Meetings	$ 207,000	$ 207,000	$ -	$ 207,000	$ -
Travel	271,988	230,000	(41,988)	271,988	-
Conference Calls	133,000	100,000	(33,000)	40,565	(92,435)
Total Meeting Expenses	**$ 611,988**	**$ 537,000**	**$ (74,988)**	**$ 519,553**	**$ (92,435)**
Operating Expenses					
Consultants & Contracts	$ -	$ -	$ -	$ -	$ -
Office Rent	-	-	-	-	-
Office Costs	64,622	42,784	(21,838)	51,336	(13,286)
Professional Services	-	-	-	-	-
Miscellaneous	500	500	-	500	-
Depreciation	210,060	231,843	21,783	231,721	21,661
Total Operating Expenses	**$ 275,182**	**$ 275,127**	**$ (55)**	**$ 283,556**	**$ 8,375**
Total Direct Expenses	**$ 3,888,768**	**$ 3,886,379**	**$ (2,389)**	**$ 3,861,666**	**$ (27,102)**
Indirect Expenses	**$ 4,234,020**	**$ 4,458,581**	**$ 224,561**	**$ 4,180,279**	**$ (53,741)**
Other Non-Operating Expenses	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**
Total Expenses (B)	**$ 8,122,788**	**$ 8,344,959**	**$ 222,171**	**$ 8,041,945**	**$ (80,843)**
Change in Assets	**$ 70,328**	**$ (146,914)**	**$ (217,242)**	**$ 58,337**	**$ (11,991)**
Fixed Assets					
Depreciation	$ (210,060)	$ (231,843)	$ (21,783)	$ (231,721)	$ (21,661)
Computer & Software CapEx	-	-	-	-	-
Furniture & Fixtures CapEx	-	-	-	-	-
Equipment CapEx	-	-	-	-	-
Leasehold Improvements	-	-	-	-	-
Allocation of Fixed Assets	**$ 280,388**	231,639	(48,749)	290,058	9,670
Inc(Dec) in Fixed Assets (C)	**70,328**	**(204)**	**(70,532)**	**58,337**	**(11,991)**
TOTAL BUDGET (=B + C)	**$ 8,193,116**	**$ 8,344,755**	**$ 151,639**	**$ 8,100,282**	**$ (92,834)**
FTEs	**17.98**	**18.27**	**0.29**	**17.16**	**(0.82)**

Compliance Monitoring and Enforcement and Organization Registration and Certification

The Compliance Monitoring, Enforcement, and Organization Registration and Certification Program Area's purpose is to monitor, enforce, and ensure registered entity compliance with the ERO's mandatory reliability standards. This program area is addressed by three operational groups: Compliance Assurance (addressing compliance monitoring), Compliance Analysis, Certification and Registration (addressing Assurance, Organization Registration and Certification), and Compliance Enforcement.

Compliance Assurance

Compliance Assurance addresses the Regional Entities' implementation of the compliance monitoring section of the Compliance Monitoring and Enforcement Program (CMEP). The group works in tandem with Compliance Enforcement, Standards, and Reliability Risk Management.

Compliance Assurance

Compliance Assurance (in whole dollars)	2016 Budget	2017 Budget	Increase (Decrease)
Total FTEs	19.36	15.51	(3.85)
Direct Expenses	$ 4,559,233	$ 3,816,924	$ (742,308)
Indirect Expenses	4,559,714	3,779,431	(780,283)
Other Non-Operating Expenses	-	-	-
Inc(Dec) in Fixed Assets	301,956	262,244	(39,712)
TOTAL BUDGET	$ 9,420,903	$ 7,858,599	$ (1,562,304)

Background and Scope

NERC's Compliance Assurance group works collaboratively with the eight Regional Entities to ensure effective implementation of risk-based compliance monitoring under the CMEP across the entire ERO Enterprise. This program ensures that Regional Entities monitor registered entities for compliance according to their own specific facts and circumstances, including the entity's inherent risks, evaluation of controls in place to mitigate the inherent risks, and any aggravating factors. The CMEP provides for Regional Entities to develop customized compliance oversight plans (COPs) for each registered entity that identifies: 1) the standards or requirements to be monitored; 2) the monitoring processes (tools) for use by the Regional Entities, including compliance audits, self-certification, spot checking, investigations, self-reporting, periodic data submittals, and complaints; and 3) the frequency of monitoring. NERC and the Regional Entities ensure that inherent risk assessments (IRAs) for registered entities begin with a consistent framework and that Regional Entities' implementation of the CMEP coalesce around best practices, data management procedures that address data reporting requirements, integrity, retention, security, and confidentiality.

The Compliance Assurance group's responsibilities include but are not limited to the following major activities and functions:

- Oversight of the quality implementation of the risk-based compliance monitoring program;
- Development of the annual CMEP Implementation Plan (IP);

- Oversight of the use of necessary compliance-related processes, procedures, IT platforms, tools, and templates;
- Development and delivery of education and training for ERO Enterprise staff;
- Critical Infrastructure Protection (CIP) Version 5 activities related to education programs that support industry compliance and the integration of risk assessment and internal controls;
- CIP-014-1 training and outreach activities related to effective implementation of the Physical Security Reliability Standard;
- Coordination with the NERC Standards department for standard development to assist in the smooth transition for standards from development to enforceability;
- Support for Regional Entity and industry committees, working groups, and task forces, such as the NERC Compliance and Certification Committee; and
- Industry training for every Reliability Standard approved by FERC.

Stakeholder Engagement and Benefit

NERC continues to promote the Regional Entities' development of customized COPs for registered entities. As the risk-based compliance monitoring approach was implemented in 2015 and 2016, Regional Entities worked closely with stakeholders to develop IRAs and appropriately scope compliance monitoring activities. As this process matures in 2017, Regional Entities will continue to develop customized uses of compliance monitoring tools and frequency of monitoring for each registered entity, based on its IRA. Additionally, NERC continues to promote registered entities' development of effective compliance programs and internal controls, which may provide a benefit in the development of their COPs.

Compliance Assurance continues to work closely with the standard development program to provide compliance information, statistics, and perspectives to drafting teams fostering the development of standards that provide an increased reliability benefit and clarify compliance risks. This collaboration with industry and Standards department staff will occur early in the standard development process by providing draft compliance monitoring guidance, including information on how compliance with draft standards will be determined, as well as input to the drafting teams on the auditability and enforceability of the draft standards. This will ensure that ERO Enterprise tools used in the auditing process, such as the reliability standards auditing worksheet (RSAW), do not expand or modify standards requirements.

NERC also continues to provide industry-focused outreach events and webinars on the ERO Enterprise's approaches to risk-based CMEP activities. The ERO Enterprise staff will continue its webinar series providing guidance on standards and requirements associated with the 2017 risk elements identified for consideration for compliance monitoring.

Key Efforts Underway

Regional Entity Oversight for Risk-Based Compliance Monitoring

Consistent with the goals and objectives set forth in the strategic plan, NERC will continue to implement risk-based compliance monitoring and enforcement as part of its stated objectives of ensuring BES reliability, improving the efficiency and effectiveness of NERC and Regional Entity compliance and enforcement operations, focusing on identified risks and reducing unnecessary burdens on registered entities.

CIP Compliance and Transition

NERC and the Regional Entities continue to manage the smooth implementation of compliance activities for CIP Version 5 and subsequent enhancements to the CIP Standards by providing training, webinars, and other forms of outreach. The ERO Enterprise will continue to provide educational programs to support industry compliance and the integration of risk assessment and internal controls. In addition, NERC and the Regional Entities will continue supporting the successful implementation and monitoring of the physical security reliability standard.

2017 Goals and Deliverables

The Compliance Assurance group has several goals and deliverables that support the 2016-2019 *ERO Enterprise Strategic Plan.* Resources will be focused on building upon the framework and improvements implemented as a result of the risk-based compliance monitoring activities in 2016. Specific 2017 objectives for this group are:

- Continue to mature the risk-based compliance monitoring program, fully developing customized COPs for registered entities.
- Work closely with NERC's Enforcement and IT departments, as well as staff in the Regional Entities, on improvements to the existing compliance, reporting, analysis tracking system (C-RATS), and other compliance tools to support risk-based activities.
- Support the continued successful implementation of the CIP Version 5 reliability standards and subsequent enhancements that become effective in 2017 and beyond.
- Continue to monitor and support effective implementation and monitoring of the Physical Security Reliability Standard.
- Initiate a training program to support implementation of the common audit procedures for each Reliability Standard, integrating principles from the ERO Auditor Capabilities and Competencies Guide.
- Continue to integrate the standards and compliance functions for clear stakeholder implementation. Support this effort through common set of RSAWs, measures, or successors, for all standards. Initiate a compliance phase-in learning periods for new standards.

These 2017 activities are necessary to further implement risk-based compliance monitoring, including the CIP standards, and integrate the standards and compliance functions. A number of activities that support the implementation of the strategic risk-based reforms are intended to reduce regulatory burden by focusing monitoring according to each registered entity's potential impact on the BPS.

Resource Requirements

Personnel

The 2017 FTE reduction set forth in the table at the end of this section reflects the reallocation of 2016 budgeted FTEs to other program areas to support key initiatives related to successful implementation and oversight of the risk-based CMEP.

Contractors and Consultants

Funds budgeted for outside consultants to assist in successful implementation of risk-based compliance monitoring have been reduced to $50k. While at a significantly reduced level from the 2016 budget, some consultant resources continue to be needed to support the transformation of NERC's Compliance Monitoring and Enforcement Program to a risk-based design. In addition, the Information Technology budget includes funding for the maintenance of existing software tools supporting compliance assessment, registration, certification, and enforcement activities, as well as the investigation and

development of a business case for future tools supporting ERO Enterprise compliance assessment, registration, and certification and enforcement activities.

Statement of Activities and Fixed Assets Expenditures
2016 Budget & Projection, and 2017 Budget
COMPLIANCE ASSURANCE

	2016 Budget	2016 Projection	Variance 2016 Projection v 2016 Budget Over(Under)	2017 Budget	Variance 2017 Budget v 2016 Budget Over(Under)
Funding					
ERO Funding					
NERC Assessments	$ 9,185,250	$ 9,185,250	$ (0)	$ 7,713,879	$ (1,471,371)
Assessment Stabilization Reserve - Penalties	$ 235,174	$ 235,174		144,334	(90,840)
Total NERC Funding	**$ 9,420,424**	**$ 9,420,424**	**$ (0)**	**$ 7,858,213**	**$ (1,562,212)**
Third-Party Funding	-	-	-	-	-
Testing Fees	-	-	-	-	-
Services & Software	-	-	-	-	-
Workshops	-	-	-	-	-
Interest	479	4,710	4,231	386	(93)
Miscellaneous	-	-	-	-	-
Total Funding (A)	**$ 9,420,903**	**$ 9,425,134**	**$ 4,231**	**$ 7,858,599**	**$ (1,562,305)**
Expenses					
Personnel Expenses					
Salaries	$ 3,063,004	$ 2,367,713	$ (695,290)	$ 2,509,618	$ (553,386)
Payroll Taxes	205,979	159,939	(46,040)	163,335	(42,644)
Benefits	351,727	308,546	(43,180)	333,557	(18,170)
Retirement Costs	336,902	267,268	(69,634)	276,273	(60,629)
Total Personnel Expenses	**$ 3,957,612**	**$ 3,103,467**	**$ (854,145)**	**$ 3,282,783**	**$ (674,828)**
Meeting Expenses					
Meetings	$ 60,000	$ 120,000	$ 60,000	$ 60,000	$ -
Travel	276,343	322,000	45,657	276,343	-
Conference Calls	20,000	20,000	-	6,100	(13,900)
Total Meeting Expenses	**$ 356,343**	**$ 462,000**	**$ 105,657**	**$ 342,443**	**$ (13,900)**
Operating Expenses					
Consultants & Contracts	$ 200,000	$ 115,000	$ (85,000)	$ 50,000	$ (150,000)
Office Rent	-	-	-	-	-
Office Costs	44,779	38,880	(5,899)	141,198	96,419
Professional Services	-	-	-	-	-
Miscellaneous	500	500	-	500	-
Depreciation	-	-	-	-	-
Total Operating Expenses	**$ 245,279**	**$ 154,380**	**$ (90,899)**	**$ 191,698**	**$ (53,581)**
Total Direct Expenses	**$ 4,559,233**	**$ 3,719,847**	**$ (839,386)**	**$ 3,816,924**	**$ (742,309)**
Indirect Expenses	**$ 4,559,714**	**$ 3,687,419**	**$ (872,294)**	**$ 3,779,431**	**$ (780,283)**
Other Non-Operating Expenses	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**
Total Expenses (B)	**$ 9,118,947**	**$ 7,407,267**	**$ (1,711,681)**	**$ 7,596,355**	**$ (1,522,592)**
Change in Assets	**$ 301,956**	**$ 2,017,868**	**$ 1,715,912**	**$ 262,244**	**$ (39,712)**
Fixed Assets					
Depreciation	-	-	-	-	-
Computer & Software CapEx	-	-	-	-	-
Furniture & Fixtures CapEx	-	-	-	-	-
Equipment CapEx	-	-	-	-	-
Leasehold Improvements	-	-	-	-	-
Allocation of Fixed Assets	$ 301,956	$ 191,574	(110,382)	262,244	(39,712)
Inc(Dec) in Fixed Assets (C)	**$ 301,956**	**$ 191,574**	**$ (110,382)**	**$ 262,244**	**$ (39,712)**
TOTAL BUDGET (=B + C)	**$ 9,420,903**	**$ 7,598,841**	**$ (1,822,062)**	**$ 7,858,599**	**$ (1,562,305)**
FTEs	**19.36**	**15.11**	**(4.25)**	**15.51**	**(3.85)**

Compliance Analysis, Certification and Registration

Compliance Analysis, Certification and Registration (in whole dollars)	2016 Budget	2017 Budget	Increase (Decrease)
Total FTEs	10.14	7.52	(2.62)
Direct Expenses	$ 2,086,784	$ 1,686,689	$ (400,093)
Indirect Expenses	2,387,951	1,832,451	(555,499)
Other Non-Operating Expenses	-	-	-
Inc(Dec) in Fixed Assets	158,136	127,149	(30,988)
TOTAL BUDGET	$ 4,632,871	$ 3,646,289	$ (986,581)

Background and Scope

The Compliance Analysis, Certification and Registration group is responsible for a range of requirements and activities embodied in Section 500 (Organization Registration and Certification) and Appendices 5A and 5B of the NERC Rules of Procedure. The group provides technical resource support to standards development, compliance monitoring, and enforcement and (1) ensures that all entities impacting the BES are registered commensurate with risk; (2) ensures that all RCs, TOPs, and BAs are certified; (3) conducts industry reliability assurance activities; and (4) ensures that compliance gaps identified in reportable events are assessed and addressed if appropriate. Specific activities of the group include:

- **Registration** – Identifies and registers BES users, owners, and operators who are responsible for compliance with reliability standards. 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. Maintains the current registration for the entire ERO for entities as they take on and drop functional responsibilities.
- **Certification** – Evaluates and certifies the competency of reliability entities; i.e., those that perform certain key reliability functions, specifically the RC, BA, and TOP functions. Entities performing these three functions must be evaluated for having the necessary personnel, knowledge, facilities, programs, and other qualifications to carry out these important responsibilities, including demonstrating the ability to meet the requirements and sub-requirements of all of the reliability standards applicable to the reliability function(s). This also includes confirming through the certification review process that a reliability entity continues to have the qualifications mentioned above following planned material changes to that entity's operation.
- **Reliability Assurance** – Conducts reliability assurance activities, including:
    - **Reliability Assurance** – Conducts activities to reasonably assure the ERO that certain actions have been taken as reported in response to NERC Alerts or guidance to industry. An example of this is the NERC Alert on Right-of-Way Clearances, which is one of the 2015 ERO Enterprise high-priority risk projects.
    - **Oversight** – Provides oversight of Regional Entity implementation of regional registration, compliance, certification, investigation, complaint programs, and processes.
    - **Investigations** – Conducts non-public, confidential investigations to identify Possible Violations of NERC reliability standards in response to complaints, BES disturbances, or

other similar triggers. The Compliance Analysis, Certification and Registration staff participates on all Regional Entity-led investigations and observers as requested on FERC-led reliability investigations and inquiries.

- **Compliance evaluations** – Works closely with regional staff to confirm that qualified events and disturbances are evaluated against the relevant approved reliability standards and ensure formal compliance monitoring occurs if indicated. These analyses are also shared with FERC staff.
- **Complaints** – Addresses formal complaints that allege the violation of reliability standards, through a confidential process.

Key Efforts Underway

In 2014 and 2015, the Compliance Analysis, Certification and Registration group developed the risk-based Registration (RBR) design and registration criteria. FERC approved the design in 2015, in two orders issued March 15 and October 15, which approved the deactivation of the registered entity functions of Interchange Authorities (IAs), Load Serving Entities (LSEs) and Distribution Providers below 75 MW (DPs), as well as the creation of a NERC-led panel (Panel) to review entities for deregistration or applicability to a reduced number of standards. In 2016, the ERO Enterprise implemented the Panel. In 2017, the Panel will continue to review registration for individual entities and evaluate trends to determine emerging classes of similarly situated entities. In 2016, a review and identification of potential improvements in both the Registration and Certification programs is being undertaken. Improvements identified will be considered for implementation in 2017.

2017 Goals and Deliverables

The Compliance Analysis, Certification and Registration group has several goals and deliverables that support the 2016-2019 *ERO Enterprise Strategic Plan.* Resources will be focused on building upon the improvements identified in 2016. Specific 2017 objectives for this group are:

- Continue to mature the NERC-led Panel.
- Implement registration program improvements identified in the 2016 project, and conduct any additional actions identified by the project. Conduct training as necessary.
- Implement certification program improvements identified in the 2016 project and conduct training as necessary.

Resource Requirements

Personnel

No additional personnel are budgeted for 2017. The FTE count in the table at the end of this section reflects the 2016 merger of the Registration and Reliability Assurance groups.

Contractor Expenses

No contractor expenses are budgeted in 2017.

Statement of Activities and Fixed Assets Expenditures
2016 Budget & Projection, and 2017 Budget
COMPLIANCE ANALYSIS, CERTIFICATION and REGISTRATION

	2016 Budget	2016 Projection	Variance 2016 Projection v 2016 Budget Over(Under)	2017 Budget	Variance 2017 Budget v 2016 Budget Over(Under)
Funding					
ERO Funding					
NERC Assessments	$ 4,509,458	$ 4,509,458	$ 0	$ 3,576,122	$ (933,336)
Assessment Stabilization Reserve - Penalties	$ 123,162	$ 123,162		69,980	(53,182)
Total NERC Funding	**$ 4,632,620**	**$ 4,632,620**	**$ 0**	**$ 3,646,102**	**$ (986,518)**
Third-Party Funding	-	-	-	-	-
Testing Fees	-	-	-	-	-
Services & Software	-	-	-	-	-
Workshops	-	-	-	-	-
Interest	251	2,860	2,609	187	(64)
Miscellaneous	-	-	-	-	-
Total Funding (A)	**$ 4,632,871**	**$ 4,635,480**	**$ 2,609**	**$ 3,646,289**	**$ (986,582)**
Expenses					
Personnel Expenses					
Salaries	$ 1,410,333	$ 1,218,102	$ (192,231)	$ 1,125,154	$ (285,179)
Payroll Taxes	97,779	85,268	(12,512)	76,383	(21,396)
Benefits	184,238	188,834	4,596	174,014	(10,224)
Retirement Costs	157,451	138,134	(19,317)	126,651	(30,800)
Total Personnel Expenses	**$ 1,849,801**	**$ 1,630,338**	**$ (219,463)**	**$ 1,502,203**	**$ (347,598)**
Meeting Expenses					
Meetings	$ 4,000	$ 3,000	$ (1,000)	$ 4,000	$ -
Travel	155,146	149,000	(6,146)	155,146	-
Conference Calls	2,000	2,000	-	610	(1,390)
Total Meeting Expenses	**$ 161,146**	**$ 154,000**	**$ (7,146)**	**$ 159,756**	**$ (1,390)**
Operating Expenses					
Consultants & Contracts	$ 50,000	$ 50,000	$ -	$ -	$ (50,000)
Office Rent	-	-	-	-	-
Office Costs	25,338	17,169	(8,169)	24,231	(1,106)
Professional Services	-	-	-	-	-
Miscellaneous	500	500	-	500	-
Depreciation	-	-	-	-	-
Total Operating Expenses	**$ 75,838**	**$ 67,669**	**$ (8,169)**	**$ 24,731**	**$ (51,106)**
Total Direct Expenses	**$ 2,086,784**	**$ 1,852,007**	**$ (234,777)**	**$ 1,686,689**	**$ (400,094)**
Indirect Expenses	**$ 2,387,951**	**$ 2,142,657**	**$ (245,294)**	**$ 1,832,451**	**$ (555,499)**
Other Non-Operating Expenses	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**
Total Expenses (B)	**$ 4,474,734**	**$ 3,994,664**	**$ (480,071)**	**$ 3,519,141**	**$ (955,594)**
Change in Assets	**$ 158,136**	**$ 640,816**	**$ 482,680**	**$ 127,149**	**$ (30,988)**
Fixed Assets					
Depreciation	-	-	-	-	-
Computer & Software CapEx	-	-	-	-	-
Furniture & Fixtures CapEx	-	-	-	-	-
Equipment CapEx	-	-	-	-	-
Leasehold Improvements	-	-	-	-	-
Allocation of Fixed Assets	$ 158,136	$ 111,318	(46,818)	127,149	(30,988)
Inc(Dec) in Fixed Assets (C)	**$ 158,136**	**$ 111,318**	**$ (46,818)**	**$ 127,149**	**$ (30,988)**
TOTAL BUDGET (=B + C)	**$ 4,632,871**	**$ 4,105,982**	**$ (526,889)**	**$ 3,646,289**	**$ (986,582)**
FTEs	**10.14**	**8.78**	**(1.36)**	**7.52**	**(2.62)**

Compliance Enforcement

Compliance Enforcement (in whole dollars)	2016 Budget	2017 Budget	Increase (Decrease)
Total FTEs	12.22	13.16	0.94
Direct Expenses	$ 2,225,938	$ 2,371,347	$ 145,410
Indirect Expenses	2,876,962	3,206,790	329,827
Other Non-Operating Expenses	-	-	-
Inc(Dec) in Fixed Assets	190,398	222,510	32,112
TOTAL BUDGET	$ 5,293,298	$ 5,800,647	$ 507,350

Background and Scope

The Compliance Enforcement department is responsible for overseeing enforcement processes, the application of penalties or sanctions, and activities to mitigate and prevent recurrence of noncompliance with reliability standards. The Compliance Enforcement department works collaboratively with the eight Regional Entities to ensure consistent and effective implementation of the risk-based Compliance Monitoring and Enforcement Program. Importantly, the department also focuses on ensuring that the ERO Enterprise dedicates resources to the matters that pose the greatest risk to reliability.

The NERC Compliance Enforcement department performs its responsibilities by:

- Monitoring Regional Entities' enforcement processes and providing oversight over their outcomes to ensure due process, to identify best practices and process efficiency opportunities, and to promote consistency among Regional Entities' business practices;
- Collecting and analyzing compliance enforcement data and trends to assist with the identification of emerging risks and to help inform the development of enforcement policies and processes;
- Filing notices of penalty and other submittals associated with noncompliance discovered through Regional Entity compliance monitoring and enforcement activities;
- Processing and filing notices of penalty and other submittals associated with violations discovered through NERC-led investigations and audits;
- Collaborating with other NERC departments, including Compliance Assurance, Standards, Event Analysis, and Regional Entity Coordination; and
- Delivering training of the ERO Enterprise staff and registered entities, as well as supporting other outreach efforts.

The ERO Enterprise's enforcement jurisdiction is drawn from the Energy Policy Act of 2005 (the Act), which added section 215 to the Federal Power Act (FPA). Section 215 made compliance with electric reliability standards mandatory and authorized the creation of an ERO and Regional Entities to establish and enforce reliability standards. Under section 215(e)(1) of the FPA, NERC or a Regional Entity may impose a penalty on a user, owner, or operator of the BPS for a violation of a Reliability Standard approved by FERC. As the ERO, NERC has set forth Sanction Guidelines outlined in its Rules of Procedure that govern the ERO Enterprise's penalties and non-monetary sanctions for Reliability Standard violations. This document

provides information on the ERO Enterprise's enforcement philosophy, i.e., the ERO Enterprise's approach for assessing and resolving noncompliance while continuing to work to bring entities into compliance with applicable reliability standards.

ERO Enterprise Core Values and Guiding Principles

The ERO Enterprise's 2016-2019 Strategic Plan promotes the ERO Enterprise's core values and guiding principles, which are based on accountability and independence, responsiveness, fairness and inclusiveness, adaption and innovation, excellence, efficiency, and integrity. These core values and guiding principles support the four pillars of the ERO Enterprise's efforts, namely, reliability, assurance, learning, and a risk-based approach.

Strategic Goals Related to Enforcement

Strategic Goal 2 provides that the ERO Enterprise shall:

> [b]e a strong enforcement authority that is independent, without conflict of interest, objective and fair, and promote a culture of reliability excellence through risk-informed compliance monitoring and enforcement. The ERO Enterprise retains and refines its ability to use standards enforcement when warranted and imposes penalties and sanctions commensurate with risk. The ERO Enterprise retains and refines its ability to use reliability standards enforcement when warranted and imposes penalties and sanctions commensurate with risk.

The risk-based enforcement approach allows for the appropriate allocation of resources to the issues that pose a higher level of risk to the reliability of the BPS.

Guiding Enforcement Principles

The following principles serve as guidelines for the conduct and behavior of all involved in the ERO Enterprise enforcement program to ensure alignment with Strategic Goal 2 and the ERO Enterprise's core values.

Compliance Enforcement Authorities are independent, without conflict of interest, objective, and fair.

The ERO Enterprise strives to be a strong enforcement authority that is independent, without conflict of interest, objective, and fair. NERC and each of the Regional Entities has a code of conduct addressing the professional and ethical standards applicable to its personnel. Foremost among these standards is the requirement that no person work on a matter where that work may affect the person's financial interest. The ERO Enterprise also expects its personnel to conduct themselves professionally and respectfully when engaging with registered entities or other stakeholders. Personnel who do not meet these standards are subject to discipline, up to and including termination.

Enforcement program promotes culture of reliability excellence through a risk-based approach.

The ERO Enterprise's risk-based enforcement philosophy generally advocates reserving enforcement actions under section 5.0 of the Compliance Monitoring and Enforcement Program for those issues that pose a higher risk to the reliability of the BPS. The risk of a noncompliance is determined based on specific facts and circumstances, including any controls in place at the time of the noncompliance. The ERO Enterprise works with registered entities to ensure timely remediation of potential risks to the reliability of the BPS and prevent recurrence of noncompliance. The enforcement process allows parties to address risks collaboratively and promote increased compliance and reliability through improvement of programs and controls at the registered entities.

The ERO Enterprise applies a presumption of non-enforcement treatment of minimal risk noncompliance to entities with demonstrated internal controls who are permitted to self-log such minimal risk issues.

Regarding other issues posing a minimal risk, NERC and the Regional Entities may exercise appropriate judgment whether to initiate a formal enforcement action or resolve the issue outside of the formal enforcement processes. The availability of streamlined treatment of minimal risk noncompliance outside of the formal enforcement process encourages self-inspection by registered entities. When self-identified minimal risk noncompliance is more than likely not going to be subject to a financial penalty, registered entities are encouraged to establish more robust internal controls for the detection and correction of noncompliance. This approach allows the ERO Enterprise to oversee the activities of registered entities in a more efficient manner and to focus resources where they result in the greatest benefit to reliability. In this context, efficiency does not necessarily mean less time or effort. Rather, it is using the requisite time, knowledge, and skills required for each circumstance. In addition, this approach allows the ERO Enterprise to continue to provide clear signals to registered entities about identified areas of concern and risk prioritization, while maintaining existing visibility into potential noncompliance and emerging areas of risk. Outcomes for noncompliance are based on the risk of a specific noncompliance and may range from streamlined, non-enforcement processes, to significant monetary penalties.

Enforcement actions are used and penalties are imposed when warranted, commensurate with risk.
An element of a risk-based approach to enforcement is accountability of registered entities for their noncompliance. No matter the risk of the noncompliance, the registered entity still bears the responsibility of mitigating that noncompliance. Based on the risk, facts, and circumstances associated with that noncompliance, the Regional Entity decides on an appropriate disposition track, inside or outside of an enforcement action, as described above, and whether a penalty is appropriate for the noncompliance.

Penalties are generally warranted for serious risk violations (e.g., uncontrolled loss of load, CIP program failures) and for when repeated noncompliance constitutes an aggravating factor. In addition to the use of significant penalties to deter undesired behavior, the ERO Enterprise also incents desired behaviors.[18] Specifically, Regional Entities may offset penalties to encourage valued behavior. Factors that may mitigate penalty amounts include registered entity cooperation, accountability (including admission of violations), culture of compliance, and self-identification of noncompliance.

Regional Entities may also grant credit in enforcement determinations for certain actions undertaken by registered entities for improvements in addition to mitigating factors. For example, Regional Entities may consider significant investments in reliability made by registered entities, beyond those otherwise planned and required, as an offset for proposed penalties in enforcement determinations. Regional Entities do not award credits or offsets for actions or investments undertaken by a registered entity that are required to mitigate noncompliance.

NERC engages in regular oversight of Regional Entity enforcement activities to confirm that the Regional Entities have followed the CMEP. This oversight evaluates the consistency of disposition methods, including assessment of a penalty or sanction, with previous resolutions of similar noncompliance involving similar circumstances. The NERC Board of Trustees Compliance Committee (the Compliance Committee) considers the recommendations of NERC staff regarding approval of Full Notices of Penalty and monitors the handling of noncompliance through the streamlined disposition methods of Spreadsheet NOPs, FFTs, and Compliance Exceptions.

[18] As required by §215(e)96) of the Federal Power Act and the Commission's regulations at 18 C.F.R. §39.7(g), the Sanction Guidelines, Appendix 4B to the NERC Rules of Procedure, provide that penalties and sanctions imposed for the violation of a Reliability Standard shall bear a reasonable relation to the seriousness of the violation while also reflecting consideration of the other factors specified in the Sanction Guidelines. The Sanction Guidelines are available on NERC's website.

Actions are timely and transparent.
The ERO Enterprise maintains an elevated level of transparency regarding enforcement matters. NERC's Rules of Procedure (including the CMEP and Sanction Guidelines) and program documents are available to the public.[19] NERC also posts information on enforcement actions on a monthly basis.[20] Moreover, information on the efficiency of the enforcement program is available to regulators, industry stakeholders and the public on a quarterly basis.[21]

Noncompliance information is used as an input to other processes.
When developing risk elements, NERC annually identifies and prioritizes risks to the reliability of the BPS, taking into account factors such as compliance findings, event analysis experiences, and data analysis. In addition, Regional Entities consider factors such as noncompliance information when conducting an IRA of a registered entity. The ERO Enterprise also uses noncompliance information as part of a feedback loop to the standards development process. This allows enhanced reliability standards through appropriate information flows from compliance monitoring and enforcement to the standards drafting process and other NERC programs. NERC regularly provides analysis and lessons learned from noncompliance information to industry stakeholders and the public.[22]

Stakeholder Engagement and Benefit

Over the past few years, NERC and the Regional Entities have made substantial progress in reducing the number of instances of noncompliance remaining to be evaluated and processed. The ERO Enterprise has held registered entities accountable for instances of noncompliance that posed a risk to the reliability of the BPS while ensuring that enforcement actions are timely and transparent. NERC promotes a culture of reliability excellence by examining registered entities' internal compliance programs and considering them as mitigating factors in penalty determinations.

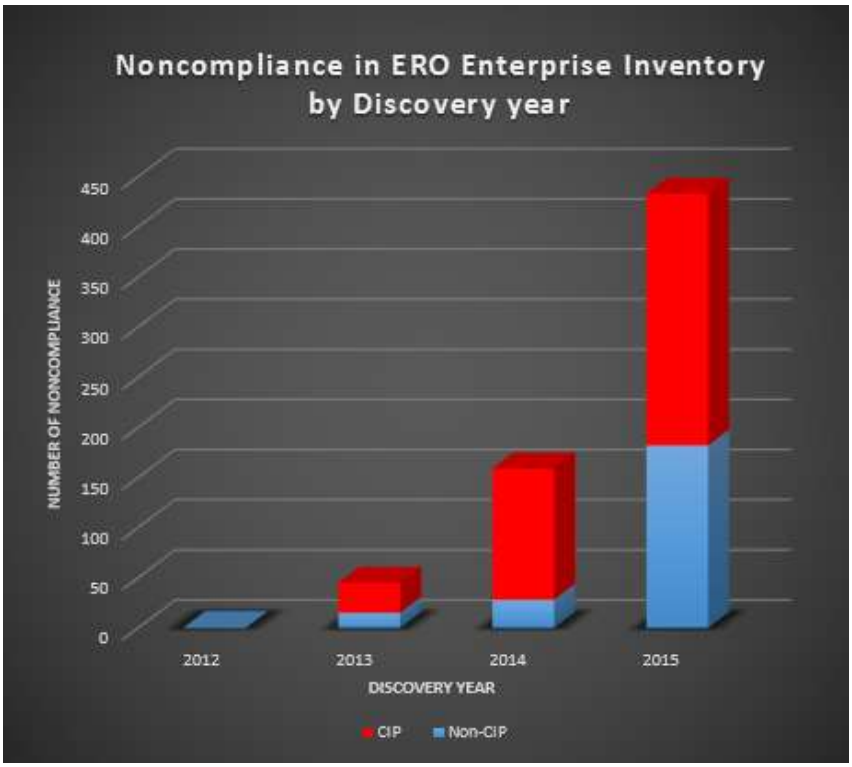
Processing Efficiencies

In an effort to improve the efficiency of enforcement processing throughout the ERO Enterprise, NERC developed a series of key enforcement processing metrics, which are tracked and analyzed throughout the year. In addition, since 2012, NERC has established goals to reduce the number of older violations remaining to be processed. Working with NERC, the Regional Entities invested significant time and resources in processing the older violations. As a result, the ERO Enterprise as a whole reduced the number of older violations substantially.

As of the end of 2015, there were three hundred twenty (320) violations older than 24 months. Sixty-four (64) of these violations stemmed from 9 non-federal registered entities and two hundred fifty-six (256) violations derived from 13 federal registered entities. The vast majority of the violations have either been fully mitigated or have mitigation plans in progress.

The targets and thresholds for efficiency-related processing metrics remain the same in 2016. This is because the ERO Enterprise has reached a stable state with regard to enforcement processing. Achieving this state has only been possible due to the hard work of the Regional Entities and NERC Enforcement in eliminating the backlog of noncompliances and implementing new enforcement processes and procedures.

[19] The NERC Rules of Procedure
[20] Posted compliance exceptions, Spreadsheet Notices of Penalty, and Full Notices of Penalty
[21] Quarterly enforcement program
[22] Quarterly compliance reports



Continued Outreach Efforts in 2016 and Beyond

In 2016, NERC and the Regional Entities will continue to conduct outreach activities that focus on self-logging, compliance exceptions, risk elements, CIP Version 5, Inherent Risk Assessments, and internal controls. NERC plans to use existing industry events, such as the Standards and Compliance workshops and industry webinars, to provide information on compliance monitoring and enforcement activities.

In addition, NERC and the Regional Entities will conduct industry outreach on reliability standards approved by FERC in 2016. These events will focus on the approved new standards or modifications to existing standards along with implementation timelines. Although most events will take place via webinar, some events will be delivered as workshops.

Risk-Based CMEP Implementation

On February 19, 2015, FERC approved the implementation of the risk-based CMEP.[23] The goal of the risk-based CMEP is to shift the compliance and enforcement approach from one in which all instances of noncompliance are evaluated as Possible Violations to an approach that strengthens management practices and reserves the enforcement process for instances of noncompliance that have been found to pose a greater risk to reliability. The programs discussed below, in conjunction with compliance outreach encouraging the development of strong management practices, will advance NERC's progress toward this goal.

Compliance Exceptions

A compliance exception is an alternative disposition method and is not a dismissal, Find, Fix, Track (FFT), or Notice of Penalty. It is essentially the exercise of enforcement judgment with respect to a noncompliance regardless of its method of discovery (self-report, self-certification, compliance audit

[23] *North American Electric Reliability Corp., Order on Electric Reliability Organization Reliability Assurance Initiative and Requiring Compliance Filing*, 150 FERC ¶ 61,108 (2015).

finding, etc.). The process of identifying and recording a compliance exception builds on the FFT program. The ERO Enterprise uses judgment in the process by taking into account the facts and circumstances of the noncompliance, the risk posed by the noncompliance to the reliability of the BPS, and the deterrent effect of an enforcement action or penalty, among other things. Compliance exception treatment is available for issues that pose a minimal risk to the BPS that would be mitigated within 12 months of the date the compliance exception is posted.

In 2013 and 2014, the use of compliance exceptions (as the alternative disposition for noncompliance posing a minimal risk to the reliability of the BPS) was limited to allow the testing of the new process. In 2015, this disposition track became available throughout the ERO Enterprise. Use of compliance exceptions as a disposition track has increased steadily. Minimal risk issues continue to be the majority of the caseload. Regional Entities have continued to use the compliance exception disposition method and increasingly relied upon it for minimal-risk issues. The increase in compliance exception use has corresponded with a decline in the use of the FFT disposition track.

Self-Logging

NERC and Regional Entity enforcement staff also have worked closely with stakeholders to identify potential improvements to self-reporting and other enforcement processes. A number of improvements were designed and implemented in 2013 and 2014. The self-logging program allows registered entities that have demonstrated effective management practices to keep track of minimal-risk noncompliance (and related mitigation) on a log that is periodically reviewed by the Regional Entity.

In November 2015, FERC approved the ERO Enterprise Self-Logging Program document, which includes the method to evaluate eligibility.[24] The program is available to any registered entity that would like to be evaluated by its Regional Entity in accordance with the program requirements. Self-logging became available to all registered entities that met the program qualifications at the start of 2015, and 42 registered entities have been approved by Regional Entities to self-log as of December 31, 2015. NERC is conducting a review of the self-logging program, in coordination with FERC staff, during 2016.

[24] *North American Electric Reliability Corporation*, 153 FERC ¶ 61,130 (2015). The *ERO Self-Logging Program* document is available on NERC's website

NERC Oversight of Risk-Based CMEP Implementation

For 2016, ensuring the successful implementation of NERC's risk-based CMEP remains the priority of Compliance Enforcement's oversight plan. As part of that oversight and in addition to offering regular feedback to the Regional Entities, NERC will continue to identify areas for improvement or promoting consistency through training, guidance, or adjustment the following year. NERC also produces an ERO Enterprise CMEP annual report, which includes an assessment of the risk-based CMEP implementation. NERC expects to publish that report during Q1 2017.

NERC performs oversight of the Regional Entities' enforcement programs primarily through the review of the processes, supporting evidence, and other information provided by the Regional Entities over the course of focused engagements of program areas that are scheduled throughout the year. NERC communicates the recommendations and findings to the Regional Entities to help the ERO Enterprise develop responsive strategies and solutions to potential issues and ensure uniform and consistent implementation of the CMEP. Such recommendations and findings also help identify priority areas for training of ERO Enterprise staff during the year.

Other Key Enforcement Efforts Underway

Regional Entity Training

NERC Enforcement will provide training to Regional Entity staff on the most important elements of risk-based enforcement, including risk assessment of noncompliance and the determination of appropriate penalties and sanctions for noncompliance. NERC is developing this training based on observations from its oversight activities of Regional Entity settlement agreements, as well as the process reviews described above.

2017 Goals and Deliverables

Specific 2017 objectives for the Compliance Enforcement department include:

- Refining and improving the risk-based CMEP processes;
- Implementing in a transparent manner an ERO Enterprise enforcement philosophy that is risk focused and drives desired behaviors by registered entities;
- Expanding the feedback loop of information from Enforcement to Standards and other program areas; and
- Working closely with NERC's Compliance Assurance and Information Technology departments, as well as staff in the Regional Entities, regarding the evaluation of improvements in the existing compliance, reporting, analysis tracking system, and other compliance tools to support risk-based activities.

Resource Requirements

Personnel

The additional Enforcement staffing in 2017 is to provide resources to support a proposed internship program.

Contractor Expenses

No Consultant and Contractor expenses are budgeted in Compliance Enforcement; however, the Information Technology budget includes funding for the maintenance, evaluation, and development of enterprise tools supporting technical feasibility exceptions, registration, and enforcement activities.

Statement of Activities and Fixed Assets Expenditures
2016 Budget & Projection, and 2017 Budget
COMPLIANCE ENFORCEMENT

	2016 Budget	2016 Projection	Variance 2016 Projection v 2016 Budget Over(Under)	2017 Budget	Variance 2017 Budget v 2016 Budget Over(Under)
Funding					
ERO Funding					
NERC Assessments	$ 5,144,612	$ 5,144,612	$ 0	$ 5,677,854	$ 533,242
Assessment Stabilization Reserve - Penalties	148,384	$ 148,384		122,465	(25,919)
Total NERC Funding	**$ 5,292,996**	**$ 5,292,996**	**$ 0**	**$ 5,800,319**	**$ 507,323**
Third-Party Funding	-	-	-	-	-
Testing Fees	-	-	-	-	-
Services & Software	-	-	-	-	-
Workshops	-	-	-	-	-
Interest	302	3,682	3,380	327	25
Miscellaneous	-	-	-	-	-
Total Funding (A)	**$ 5,293,298**	**$ 5,296,678**	**$ 3,380**	**$ 5,800,647**	**$ 507,349**
Expenses					
Personnel Expenses					
Salaries	$ 1,629,233	$ 1,755,799	$ 126,566	$ 1,790,859	$ 161,627
Payroll Taxes	109,485	113,380	3,895	117,205	7,720
Benefits	222,877	176,404	(46,473)	184,106	(38,771)
Retirement Costs	181,419	196,458	15,039	198,694	17,275
Total Personnel Expenses	**$ 2,143,014**	**$ 2,242,042**	**$ 99,028**	**$ 2,290,865**	**$ 147,851**
Meeting Expenses					
Meetings	$ 2,500	$ 2,500	$ -	$ 2,500	$ -
Travel	56,736	55,000	(1,736)	56,736	-
Conference Calls	1,200	2,000	800	366	(834)
Total Meeting Expenses	**$ 60,436**	**$ 59,500**	**$ (936)**	**$ 59,602**	**$ (834)**
Operating Expenses					
Consultants & Contracts	$ -	$ -	$ -	$ -	$ -
Office Rent	-	-	-	-	-
Office Costs	21,866	14,983	(6,883)	20,379	(1,486)
Professional Services	-	-	-	-	-
Miscellaneous	500	1,000	500	500	-
Depreciation	122	122	-	-	(122)
Total Operating Expenses	**$ 22,488**	**$ 16,105**	**$ (6,383)**	**$ 20,879**	**$ (1,608)**
Total Direct Expenses	**$ 2,225,938**	**$ 2,317,647**	**$ 91,708**	**$ 2,371,347**	**$ 145,409**
Indirect Expenses	**$ 2,876,962**	**$ 2,989,470**	**$ 112,507**	**$ 3,206,790**	**$ 329,827**
Other Non-Operating Expenses	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**
Total Expenses (B)	**$ 5,102,901**	**$ 5,307,116**	**$ 204,216**	**$ 5,578,137**	**$ 475,236**
Change in Assets	**$ 190,398**	**$ (10,438)**	**$ (200,836)**	**$ 222,510**	**$ 32,112**
Fixed Assets					
Depreciation	(122)	(122)	-	-	122
Computer & Software CapEx	-	107,000	107,000	-	-
Furniture & Fixtures CapEx	-	-	-	-	-
Equipment CapEx	-	-	-	-	-
Leasehold Improvements	-	-	-	-	-
Allocation of Fixed Assets	$ 190,520	$ 155,313	(35,207)	222,510	31,990
Inc(Dec) in Fixed Assets (C)	**$ 190,398**	**$ 262,191**	**$ 71,793**	**$ 222,510**	**$ 32,112**
TOTAL BUDGET (=B + C)	**$ 5,293,298**	**$ 5,569,308**	**$ 276,009**	**$ 5,800,647**	**$ 507,349**
FTEs	**12.22**	**12.25**	**0.03**	**13.16**	**0.94**

Reliability Assessment and System Analysis

Reliability Assessments and System Analysis (in whole dollars)	2016 Budget	2017 Budget	Increase (Decrease)
Total FTEs	11.75	14.10	2.35
Direct Expenses	$ 3,778,595	$ 3,986,965	$ 208,370
Indirect Expenses	2,767,102	3,435,846	668,744
Other Non-Operating Expenses	-	-	-
Inc(Dec) in Fixed Assets	(202,780)	112,782	315,563
TOTAL BUDGET	$ 6,342,917	$ 7,535,594	$ 1,192,677

Background and Scope

The Reliability Assessment and System Analysis (RASA) department carries out the ERO's statutory responsibility to conduct assessments of the reliability and adequacy of the BES. These assessments are used to provide insight and guidance about reliability risks. These insights provide a foundation for the development of new reliability standards or modifications to mandatory reliability standards, or other initiatives, such as guidelines, alert(s), webinars, etc., all focused on enhancing overall reliability. The majority of the activities in the RASA department directly address the risk priorities established by the Reliability Issues Steering Committee. In particular, the risks pertaining to changing resources and planning noted in the 2015 RISC report are of particular importance to the assessment and analysis work being performed in RASA.

NERC staff works closely with stakeholders on creating assessment development schedules, including schedules with adequate stakeholder review at every level. All NERC reliability assessments have a sponsoring technical committee, subcommittee, or other subgroup. The Long-Term and Seasonal assessments are conducted by the Reliability Assessment Subcommittee, and ultimately endorsed by the Planning Committee. Special Assessments often require a separate and specialized task force or advisory group to help construct, conduct, and produce special topic assessments such as the CPP assessments, Natural Gas interdependency assessment, and distributed energy report.

The department focuses on developing a technical framework and understanding the emerging reliability risks facing the industry. It also provides guidance and insights to stakeholders across North America. The department relies on its own engineering and analysis expertise, as well as Regional Entity and stakeholder resources. RASA is responsible for:

- Independent reliability assessments on the overall reliability and adequacy of the BES and associated emerging reliability risks that could impact the short-, mid- and the long-term (e.g., 10-year) planning horizons, and other reliability issues requiring an in-depth analysis.
- Support for the development and improvement of long-term sustainable interconnection-based power flow, dynamic, and load models that exhibit the accuracy and fidelity reflecting actual BES reliability performance and dynamic conditions.

- Interconnection-wide analysis of steady-state and dynamic conditions, including frequency, Essential Reliability Services, stability, and oscillatory behavior aspects.

- Advancement of industry and the ERO's understanding of power system characteristics and behaviors by gathering larger Phasor Measurement Unit (PMU) datasets for advanced data analytics and modeling improvements.

- Assurance oversight that the BES electrical elements necessary for its reliable operation are identified, requiring the elements to follow the appropriate NERC Reliability Standards.

- Establishment of reliability leadership and consistent, technically sound guidance and recommendations that position industry and policy makers to enhance reliability through effective outreach and communications.

Stakeholder Engagement and Benefit

RASA works with industry leaders to create a reliability strategy that is relevant, timely, and effective to address the most important reliability risks. This effort includes reviewing and addressing key priority risks identified by NERC's Reliability Issues Steering Committee (RISC); synthesizing key information identified through analysis and assessment efforts; extracting and prioritizing the associated reliability risks; sharing and integrating risk analysis insights across the ERO Enterprise; and translating that knowledge into actionable guidance and recommendations for NERC management, the Board, and entities, along with state, federal, and provincial policy makers.

In addition, the ERO monitors the ongoing and historic reliability performance of the BES through data gathered to analyze historic trends. The ERO provides reports and recommendations regarding the anticipated conditions that could impact the reliability, security, and stability of the BPS to the industry, Regional Entities, regulatory entities, and other designated entities.

2017 Enhancements

Enhancements in the 2017 BP&B are a reflection of the strategic goals and objectives identified in the Electric Reliability Organization Enterprise Strategic Plan 2016–2019. The following enhancements are attributable to Strategic Goal #4[25] and the objectives and valued outcomes noted within Strategic Goal #4a:

- Improve resource adequacy assessments with increased probabilistic and risk analysis
- Conduct interconnection-wide analysis to support NERC's reliability assessments and improve industry planning
- Increase technical analysis and assessment focus on natural gas, wind, and solar resource and fuel availability
- Develop technical references and guidelines that advance and improve reliability using new technologies
- Develop quality/fidelity assessments of interconnection models

Key RASA Efforts Underway

RASA focuses its efforts in the following key areas:

[25] ERO Enterprise identifies, evaluates, studies, and independently assesses emerging risks to reliability.

Reliability Assessment

Reliability assessments serve to evaluate the expected reliability of the BES through extensive deterministic and probabilistic analyses to identify potential reliability risks and potential mitigation approaches. These reviews include both evaluations at the edge of the planning horizon, as well as assessments of the anticipated performance during the short-term (12- to 18-month outlook). These analyses involved planned and anticipated changes to generation resources, transmission infrastructure, and load behavior compared to base-line needs of the system to remain reliable and formulate recommendations and related guidance. This assessment is often by completed by examining special scenarios and unique situations within the BES. These analyses provide a technical platform for important policy discussions on challenges facing the interconnected BES, as well as focused recommendations on mitigation to improve overall reliability or lessen reliability risks.

By identifying and quantifying emerging reliability issues, NERC is able to provide risk-informed recommendations and support a learning environment for industry to address emerging risks and pursue improved reliability performance. These efforts are expected to expand to assess the impacts on reliability from the changing resource mix, reliability behavior of resources, distributed energy resources, and loads. Many resource additions are asynchronous and energy-limited, requiring assessment of a substantial number of scenarios rather than just seasonal peak conditions. Reliability assessments must therefore include a greater focus on probabilistic approaches, assessing the sufficiency of essential reliability services as well as focusing seasonal assessments on short-term horizons to encompass more than peak condition reserve margin analyses.

Key assessments include:

- Long-Term Reliability Assessment (supplemented by the Probabilistic Assessment)
- Summer and Winter Reliability Assessments (condensed report)
- Short-Term and Special Reliability Assessments
    a. Between one and four short-term reliability assessments are expected, driven by the need to assess emerging short-term risks to reliability
    b. Special Assessments are selected based on high-priority/high-risk issues that require an independent assessment from the ERO.

A significant ongoing effort anticipated to involve RASA, Regional Entity staff, and stakeholders focuses on the continued development of effective Essential Reliability Services. These efforts are expected to lead to a broad set of recommendations that will culminate with defined elements, an evaluation of initial metrics and data compilation of actual performance, and refinement about the ongoing assessment of Essential Reliability Services measures.

System Analysis

Understanding the technical behavior of the North American grid is the foundation for identifying crucial aspects of performance that are important for sustaining overall reliability. NERC's understanding of grid behavior is achieved through a comprehensive evaluation of system behavior through constant observation and study, analytic simulations, and forensic analysis of system disturbances. Methodically comparing the simulation results of powerflow and system dynamic performance to actual system behavior improves models critical for industry use to simulate system conditions as well as enables RASA to gain insights to enhance predictive system analysis.

The ERO Enterprise RASA team also supports the following objectives:

- Continue leading and improving NERC's analytical capabilities to address a broad range of engineering topics,
- Support NERC Reliability Standards development with subject matter expertise,
- Support and lead technical analysis of emerging risks requiring advanced analytics and interconnection-wide assessment,
- Detailed forensic analysis of significant system disturbances

Key focus areas:

- PMU Measurement, use, and analysis improvements
    - Synchrophasor technology
    - Power plant model verification
    - Oscillation analysis
- Frequency Response Analysis, Interconnection Frequency Response Obligation Analysis, and forward-looking reliability assessment
- Interconnection-Wide Model Building Designation and Criteria administration
- Analysis of TPL Footnote 12
- Load and distributed energy resource modeling
- Event analysis – simulation and forensic analysis of major events
- Reliability Standards support
- BES Exception and Self-Determined Notification Processing

Further, RASA will continue to work closely with other organizations, including but not limited to the Electric Power Research Institute (EPRI), the Department of Energy (DOE), the Institute of Electrical and Electronic Engineers (IEEE), the Institute of Nuclear Power Operations (INPO), the North American Transmission Forum (NATF), the North American Generation Forum (NAGF), and the Canadian Electricity Association (CEA). RASA collaborates with these groups on a number of fronts, including geomagnetic disturbance (GMD), vegetation management, and variable generation integration. RASA will continue working with the Interstate Natural Gas Association of America (INGAA) and the Natural Gas Supply Association (NGSA) regarding studies pertaining to the interdependency of gas and electric systems.

2017 Goals and Deliverables

In 2017, RASA will seek to achieve several specific goals and objectives as part of the strategic focus of the ERO Enterprise (Strategic Goal 4a):

1. Pioneer implementation of advanced reliability assessment and system analysis methods to address the changing nature of the grid. Issue reliability assessment reports, guidelines, and recommendations to address high priority evolving performance trends and address emerging risks to reliability.
    a. Expand the use of probabilistic assessment tools across the ERO and gain consistency in approach

b. Special assessments on identified high-priority risks (from RISC prioritization and recommendations)[26]

- Changing resource mix and maintaining Essential Reliability Services
- Increased penetration of Distributed Energy Resources
- Increasing dependency on generation fueled by natural gas
- Broaden understanding of inter-area and local system oscillations in all interconnections and their potential impact on interconnection reliability.

c. As part of its oversight of the Regional Entities, build and sustain an Enterprise RAPA team (ERO-RAPA) that encompasses the consistent development and implementation of risk-informed approaches and structured methods to identify and address reliability risks.

2. Provide the basis for industry to meet regulatory requirements of the NERC Reliability Standard BAL-003-1, "Frequency Response and Frequency Bias Setting;" exploratory understanding of frequency response; support interconnection-wide studies of frequency response

   a. Frequency Response Annual Analysis and BAL-003 FERC filing

   b. Determination of Interconnection Frequency Response Obligation (IFRO) and Balancing Authority Frequency Reporting Obligation values

3. Support NERC Reliability Standard development by providing subject matter expertise.
4. Provide support and leadership to (1) the Planning Committee and (2) standing committees' subcommittees, working groups, and task forces serving the standing committees. Support the development of technical reference documents and Reliability Guidelines with support of the PC leadership and established in the annual PC work plan
5. As necessary, support major event investigations, analyses, and reporting of findings, recommendations, and lessons learned to improve reliability.
6. Provide feedback to interconnection-wide model-building groups on improvements to system model quality and fidelity.
7. Assist in the development of approaches to registration and provide input to NERC staff in support of the development of CMEP risk elements, as well as support and lead the BES Definition Exception Process.

Resource Requirements

Personnel
Additional personnel were allocated to RASA in 2016 to address increased resource demands associated with ongoing reliability assessment, performance analysis, and system analysis activities.

Contractor Expenses
The total contractor and consultant expenses for the RASA department are projected at $525k, a decrease of $50k from the 2016 budget. Further information is provided on Exhibit C.

[26] RISC Recommendations to the NERC Board of Trustees

Statement of Activities and Fixed Assets Expenditures
2016 Budget & Projection, and 2017 Budget
RELIABILITY ASSESSMENTS and SYSTEM ANALYSIS

	2016 Budget	2016 Projection	Variance 2016 Projection v 2016 Budget Over(Under)	2017 Budget	Variance 2017 Budget v 2016 Budget Over(Under)
Funding					
ERO Funding					
NERC Assessments	$ 6,135,872	$ 6,135,872	0	$ 7,339,030	$ 1,203,158
Assessment Stabilization Reserve - Penalties	142,718	142,718		131,213	(11,505)
Total NERC Funding	**$ 6,278,590**	**$ 6,278,590**	**$ 0**	**$ 7,470,243**	**$ 1,191,653**
Third-Party Funding	-	-	-	-	-
Testing Fees	-	-	-	-	-
Services & Software	50,000	-	(50,000)	50,000	-
Workshops	15,000	15,000	-	15,000	-
Interest	462	3,634	3,172	351	(111)
Miscellaneous	-	-	-	-	-
Total Funding (A)	**$ 6,344,052**	**$ 6,297,224**	**$ (46,828)**	**$ 7,535,594**	**$ 1,191,542**
Expenses					
Personnel Expenses					
Salaries	$ 1,826,951	$ 2,080,813	$ 253,862	$ 2,247,826	$ 420,875
Payroll Taxes	122,096	137,089	14,993	142,919	20,823
Benefits	213,866	240,723	26,857	263,230	49,364
Retirement Costs	203,274	229,385	26,111	246,609	43,335
Total Personnel Expenses	**$ 2,366,187**	**$ 2,688,010**	**$ 321,823**	**$ 2,900,585**	**$ 534,398**
Meeting Expenses					
Meetings	$ 109,000	$ 109,000	$ -	$ 74,000	$ (35,000)
Travel	208,338	249,000	40,662	208,338	-
Conference Calls	17,280	17,280	-	5,270	(12,010)
Total Meeting Expenses	**$ 334,618**	**$ 375,280**	**$ 40,662**	**$ 287,608**	**$ (47,010)**
Operating Expenses					
Consultants & Contracts	$ 575,000	$ 442,425	$ (132,575)	$ 525,000	$ (50,000)
Office Rent	-	-	-	-	-
Office Costs	116,266	138,523	22,257	147,652	31,386
Professional Services	-	-	-	-	-
Miscellaneous	500	500	-	500	-
Depreciation	386,024	282,034	(103,991)	125,621	(260,403)
Total Operating Expenses	**$ 1,077,790**	**$ 863,482**	**$ (214,308)**	**$ 798,773**	**$ (279,018)**
Total Direct Expenses	**$ 3,778,595**	**$ 3,926,772**	**$ 148,177**	**$ 3,986,965**	**$ 208,370**
Indirect Expenses	**$ 2,767,102**	**$ 3,218,866**	**$ 451,764**	**$ 3,435,846**	**$ 668,744**
Other Non-Operating Expenses	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**
Total Expenses (B)	**$ 6,545,697**	**$ 7,145,638**	**$ 599,940**	**$ 7,422,812**	**$ 877,114**
Change in Assets	**$ (201,645)**	**$ (848,413)**	**$ (646,768)**	**$ 112,782**	**$ 314,428**
Fixed Assets					
Depreciation	(386,024)	(282,034)	103,991	(125,621)	260,403
Computer & Software CapEx	-	53,580	53,580	-	-
Furniture & Fixtures CapEx	-	-	-	-	-
Equipment CapEx	-	-	-	-	-
Leasehold Improvements	-	-	-	-	-
Allocation of Fixed Assets	$ 183,244	$ 167,231	$ (16,013)	238,403	$ 55,159
Inc(Dec) in Fixed Assets (C)	**$ (202,780)**	**$ (61,222)**	**$ 141,558**	**$ 112,782**	**$ 315,563**
TOTAL BUDGET (=B + C)	**$ 6,342,917**	**$ 7,084,415**	**$ 741,498**	**$ 7,535,594**	**$ 1,192,677**
FTEs	**11.75**	**13.19**	**1.44**	**14.10**	**2.35**

Performance Analysis

Performance Analysis (in whole dollars)	2016 Budget	2017 Budget	Increase (Decrease)
Total FTEs	6.92	9.40	2.49
Direct Expenses	$ 1,838,245	$ 2,459,356	$ 621,111
Indirect Expenses	1,629,647	2,290,564	660,917
Other Non-Operating Expenses	-	-	-
Inc(Dec) in Fixed Assets	107,919	158,936	51,017
TOTAL BUDGET	$ 3,575,811	$ 4,908,855	$ 1,333,043

Background and Scope

The Performance Analysis (PA) group provides insight and guidance about reliability risks and areas of concern based on analysis of historic system performance. This includes identifying potential risks of concern related to system, equipment, entity, and organizational performance that may indicate a need to develop remediation strategies, action plans, or data used to create, revise or retire reliability standards or consider new reliability standards. The department focuses on developing a technical framework and understanding the reliability risks facing the industry.

Stakeholder Engagement and Benefit

The ERO monitors the reliability performance of the BES in North America through data gathered to analyze historic trends. The ERO provides reports and recommendations regarding the anticipated conditions that could impact the reliability, security, and stability of the BPS to the industry, Regional Entities, regulatory entities, and other designated entities.

The ERO works with industry leaders to create a reliability strategy that is relevant, timely, and effective at addressing the most important reliability risks. This effort includes PA's contribution (both in data gathering and in statistical analysis of data, trends, and events) toward the ERO's understanding key information identified through analysis and assessment efforts; extracting and prioritizing the associated reliability risks from that information; sharing and integrating those risk analysis insights across the ERO Enterprise; and translating that knowledge into actionable guidance and recommendations for NERC management, the Board, and entities, and state, federal, and provincial policy makers. This offers stakeholders an open and transparent approach for the development of NERC's reliability strategy, ultimately ensuring the ERO is accountable to industry, regulators, and the public at large.

Key Efforts Underway

Performance Analysis collects transmission outage, generator performance, demand response, and protection and control misoperation data in a common format using the various industry databases. This data is used to develop and report on grid metrics that analyze outage frequency, duration, causes, and many other factors related to transmission and generator performance as well as automatic power system protection and control effectiveness. In addition to collecting simple equipment availability data, detailed information about individual outage events is collected that, when analyzed at the regional and NERC levels, provides data that may be used to improve BES reliability.

The key trends, findings, and recommendations from Performance Analysis serve as technical input to the ERO's reliability standards and standards project prioritization, compliance process improvements, event analyses, reliability assessment, and critical infrastructure protection efforts. This analysis of BES performance provides an industry reference for historical BES reliability, but it also offers analytical insights that lead toward the prioritization of specific actionable risk control steps for industry. These analyses and results are summarized in the annual state of reliability report, which provides guidance and recommendations for enhanced bulk system reliability. By January, 2017, PA will add GADS Wind Data to the data collected under Section 1600, requiring the development of a new software tool to enable this.

Performance Analysis is working with Event Analysis to develop a link between their databases. Specific equipment outages will be linked to disturbance reports filed with NERC, enabling better association of transmission and generation outages. The continued alignment between these efforts is expected to enhance the ability to conduct effective event analyses as well as identify key reliability areas for trend analyses of multiple databases. This is expected to improve the depth of event analyses across the ERO Enterprise and expand the quality of data gathered for sophisticated statistical and probabilistic analyses. This will lead to trends and insights about reliability performance, as well as effective measures and actions to address reliability risks. Further in 2016, PA has begun data mining of completed EA efforts to see if any insight might be gained from these events as the grid evolves that were not first and foremost or particularly relevant to enhanced grid reliability at the time of the original event investigation.

Performance Analysis is currently refining the composition of NERC's annual state of reliability (SOR) report to expand the GADS data trend analysis, and for 2017 begin to reflect post-seasonal reliability review, insights from analysis of transmission, generator, and demand response data systems (TADS, GADS, and DADS), and integration of event analysis and misoperations. Also, in 2016, the department will perform activities necessary to determine whether in 2017 the SOR should move from a calendar year (Q1-Q4) report to a fiscal year (2016,Q4-2017,Q3) report.

Further, Performance Analysis will continue to work closely with other organizations, including but not limited to the EPRI, the DOE, the IEEE, INPO, the NATF, the NAGF, and the CEA. PA collaborates with these groups on a number of fronts, including TADS, GADS, and DADS.

2017 Goals and Deliverables

In 2017, Performance Analysis has a number of specific goals and deliverables in support of the ERO Enterprise Strategic Plan, including:

1. Issue the state of reliability report, guidelines, recommendations, alerts as needed (including the verification and validation of data and information through Regional Entities and technical committees as required)
2. Oversee and evaluate reliability trends that identify reliability risks by analyzing data contained in NERC's GADS, TADS, and DADS, along with reliability metrics and protection & controls system misoperations data.
3. Support NERC Reliability Standard development by providing subject matter expertise.
4. Provide support and leadership to the standing committees' subcommittees, working groups, and task forces serving the standing committees (primary focus on the Performance Analysis Subcommittee and its subgroups).
5. Assist in the development of approaches to registration and provide input to NERC staff in support of the development of CMEP risk elements

6. Conduct major event investigations, analyses, and reporting of major findings, recommendations, and lessons learned that will improve reliability.
7. Provide insight on emerging system protection issues, and hand-off any issues gleaned with future implications to RASA.

Resource Requirements

Personnel
During 2016 additional personnel (including open positions) were allocated to Performance Analysis to address increased resource demands associated with ongoing reliability assessment, performance analysis, and system analysis activities.

Contractor Expenses
Performance Analysis contractor and consultant expenses are $528k, an increase of $19k over 2016. Additional details are provided in Exhibit C.

Statement of Activities and Fixed Assets Expenditures
2016 Budget & Projection, and 2017 Budget
PERFORMANCE ANALYSIS

	2016 Budget	2016 Projection	Variance 2016 Projection v 2016 Budget Over(Under)	2017 Budget	Variance 2017 Budget v 2016 Budget Over(Under)
Funding					
ERO Funding					
NERC Assessments	$ 3,490,625	$ 3,490,625	$ -	$ 4,821,146	$ 1,330,521
Assessment Stabilization Reserve - Penalties	84,052	84,051		87,475	3,423
Total NERC Funding	**$ 3,574,677**	**$ 3,574,676**	**$ -**	**$ 4,908,621**	**$ 1,333,944**
Third-Party Funding	-	-	-	-	-
Testing Fees	-	-	-	-	-
Services & Software	-	50,000	50,000	-	-
Workshops		-	-	-	-
Interest		2,554	2,554	234	234
Miscellaneous	-	-	-	-	-
Total Funding (A)	**$ 3,574,677**	**$ 3,627,230**	**$ 52,554**	**$ 4,908,855**	**$ 1,334,178**
Expenses					
Personnel Expenses					
Salaries	$ 886,643	$ 1,280,436	$ 393,793	$ 1,349,579	$ 462,936
Payroll Taxes	65,373	90,958	25,585	92,093	26,720
Benefits	126,252	142,204	15,952	143,104	16,852
Retirement Costs	98,314	144,446	46,132	149,018	50,704
Total Personnel Expenses	**$ 1,176,582**	**$ 1,658,044**	**$ 481,462**	**$ 1,733,794**	**$ 557,212**
Meeting Expenses					
Meetings	$ 1,000	$ 6,000	$ 5,000	$ 1,000	$ -
Travel	118,172	98,000	(20,172)	118,172	-
Conference Calls	9,720	7,000	(2,720)	2,965	(6,755)
Total Meeting Expenses	**$ 128,892**	**$ 111,000**	**$ (17,892)**	**$ 122,137**	**$ (6,755)**
Operating Expenses					
Consultants & Contracts	$ 509,039	$ 621,849	$ 112,810	$ 528,082	$ 19,043
Office Rent	-	-	-	-	-
Office Costs	23,732	51,194	27,462	74,843	51,111
Professional Services	-	-	-	-	-
Miscellaneous		-	-	500	500
Depreciation		-	-	-	-
Total Operating Expenses	**$ 532,771**	**$ 673,043**	**$ 140,272**	**$ 603,426**	**$ 70,655**
Total Direct Expenses	**$ 1,838,245**	**$ 2,442,087**	**$ 603,842**	**$ 2,459,356**	**$ 621,111**
Indirect Expenses	**$ 1,629,647**	**$ 2,242,712**	**$ 613,065**	**$ 2,290,564**	**$ 660,917**
Other Non-Operating Expenses	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**
Total Expenses (B)	**$ 3,467,892**	**$ 4,684,799**	**$ 1,216,907**	**$ 4,749,920**	**$ 1,282,028**
Change in Assets	**$ 106,785**	**$ (1,057,569)**	**$ (1,164,353)**	**$ 158,936**	**$ 52,151**
Fixed Assets					
Depreciation		-	-	-	-
Computer & Software CapEx	-	162,500	162,500	-	-
Furniture & Fixtures CapEx	-	-	-	-	-
Equipment CapEx	-	-	-	-	-
Leasehold Improvements	-	-	-	-	-
Allocation of Fixed Assets	$ 107,919	$ 116,517	$ 8,598	158,936	$ 51,017
Inc(Dec) in Fixed Assets (C)	**$ 107,919**	**$ 279,017**	**$ 171,098**	**$ 158,936**	**$ 51,017**
TOTAL BUDGET (=B + C)	**$ 3,575,811**	**$ 4,963,816**	**$ 1,388,005**	**$ 4,908,855**	**$ 1,333,044**
FTEs	**6.92**	**9.19**	**2.28**	**9.40**	**2.49**

Reliability Risk Management

NERC's Reliability Risk Management (RRM) group carries out the ERO's statutory responsibility to perform assessments (real time or near real time continual awareness, detailed analysis of significant events, and longer-tern broad performance assessments) of the reliability and adequacy of the BES, including identifying potential issues of concern relating to system, equipment, entity, and human performance that may indicate the need to develop and implement targeted interventions. RRM has three departments: Situation Awareness (also referred to as Bulk Power System Awareness), Event Analysis, and Performance Analysis, as described above beginning on page 49. These departments are responsible for six primary functions: (1) BES awareness; (2) event analysis and determination of root and contributing causes; (3) assessment of human performance challenges that affect BES reliability and identification of improvement opportunities; (4) continent-wide analysis and reporting of BES performance; (5) support of the NERC Operating Committee; and (6) support of the NERC Critical Infrastructure Protection Committee.

RRM's functions and resources are directly focused on proactive awareness of BES conditions and all events over a threshold of certain risk or impact. Through awareness and continuous assessment, RRM identifies potential reliability risks to the BES. RRM analyzes events in detail, addresses the most significant risks to BES reliability, and ensures that industry is well informed of system events, emerging trends, risk analysis, and lessons learned. Through performing these functions, RRM provides data and analysis to inform the other aspects of NERC's statutory functions. The group also provides strategic direction for using risk-based concepts in planning and executing its responsibilities.

Situation Awareness

Situation Awareness (in whole dollars)	**2016 Budget**	**2017 Budget**	**Increase (Decrease)**
Total FTEs	5.53	5.64	0.11
Direct Expenses	$ 2,310,875	$ 2,570,828	$ 259,953
Indirect Expenses	1,302,775	1,374,338	71,563
Other Non-Operating Expenses	-	-	-
Inc(Dec) in Fixed Assets	78,547	87,695	9,148
TOTAL BUDGET	$ 3,692,197	$ 4,032,862	$ 340,664

Background and Scope

NERC's Situation Awareness department and the eight Regional Entities monitor BES conditions, significant occurrences and emerging risks, and threats across the 14 Reliability Coordinator regions in North America to maintain an understanding of conditions and situations that could impact the bulk electric system's reliable operation. This group also supports the development and publication of Alerts and awareness products and facilitates information sharing among industry, Regions, and the government during crisis situations and major system disturbances. The process for understanding the potential threats or vulnerabilities to the reliability of the BPS starts with understanding occurrences and events in the context in which they occur.

Stakeholder Engagement and Benefit

BES conditions continually change and provide recognizable signatures through automated tools, mandatory reports and voluntary information sharing, and third-party publicly available sources. The significant majority of these signatures represents conditions and occurrences that have little or no reliability impact, either positive or adverse, on the BES. However, being cognizant of the short-term condition of the BES and the signatures associated with the entire range of reliability performance helps the ERO identify significant occurrences and events more accurately and efficiently. Registered entities continue to robustly share information and collaborate with the ERO in an effort to maintain and improve the overall reliability of the grid.

Key Efforts Underway

Several reliability-related situation awareness and monitoring tools will undergo enhancement, replacement, streamlining, or modification. The following tools are being focused on during 2016: (1) operation and maintenance of Situation Awareness for NERC, FERC, and Regions, Version 2 (SAFNRv2) software application used for monitoring, to include preparation for a new RFP process in late 2016 to enhance the tool from its current state with no changes to the data used; (2) operation and maintenance of the current secure NERC Alerts tool while planning for a streamlined NERC Alert process and platform appropriately integrated with related ongoing NERC, E-ISAC and ERO Enterprise IT initiatives; (3) refresh of the Reliability Coordinator Information System (RCIS) legacy application for operability and maintainability reasons, with no significant changes to functionality; and (4) continuing to set the conditions to bring limited streaming Synchrophasor data into NERC for wide-area situational awareness and event triage applications.

2017 Goals and Deliverables

In 2017, the Situation Awareness department will seek to accomplish the following specific goals and deliverables:

1. Ensure that the ERO is aware of all BES events above a threshold of impact.
2. Enable the sharing of information and data to facilitate wide-area situational awareness.
3. During crisis situations, facilitate the exchange of information among industry, Regions, and the U.S. and Canadian governments.
4. Keep industry informed of emerging reliability threats and risks to the BES, including any expected actions.
5. Conduct the annual NERC Monitoring and Situational Awareness Conference and Human Performance Conference.
6. Administer the NERC Alerts process as specified in Rules of Procedure (ROP) §810 to issue Advisory (Level 1) Alerts on significant and emerging reliability- and security-related topics as needed, and facilitate the tracking of actions specified in Recommendation (Level 2) and Essential Action (Level 3) Alerts.

The department uses the following major reliability-related tools to support department activities:

Resource Adequacy (ACE Frequency) Tool

This software application provides continuous monitoring of key resource adequacy performance metrics, including pre-established thresholds and limits defined in standards. It alerts Reliability Coordinators and resource subcommittees to conditions that could result in critical inadequacies, such as major tie errors, inaccurate load forecasts, and inadequate frequency response.

Inadvertent Interchange
This tool facilitates the entering of monthly scheduling data and submittal of monthly inadvertent performance standards reports to NERC. It also assists in the monitoring and resolution of reliability issues originated by inadvertent interchange imbalances.

Frequency Monitoring and Analysis Tool
This tool detects frequency events and captures key frequency response information for each interconnection.

Intelligent Alarms Tool
This tool detects short-term and long-term frequency deviations using data transmitted to NERC by the Balancing Authorities. When coupled with the FNet[27] and Frequency Monitoring and Analysis tools, this tool allows immediate differentiation of the cause of a frequency deviation—a generator trip or a scheduling error.

Genscape
The PowerIQ and PowerRT tools provide more detailed insight into current-day conditions impacting BPS conditions in both normal operations and stressed conditions.

Resource Requirements

Personnel
No additional personnel are projected for the Situation Awareness department in 2017. The slight increase reflected in the following table is due to a lower vacancy rate than in 2016.

Contractor Expenses
The overall funding of approximately $1.3M for contractors and consultants (which includes the cost of the tools set forth above) to support the Situation Awareness department in 2017 represents an increase of $84k over 2016 budget levels. The detailed 2017 contractor and consulting budget for the Situation Awareness department is set forth in Exhibit C with a comparison to 2016 budgeted amounts.

[27] FNet – Operated by the Power Information Technology Laboratory at the University of Tennessee, FNET is a low-cost, quickly deployable global positioning system (GPS)-synchronized wide-area frequency measurement network. High dynamic accuracy Frequency Disturbance Recorders (FDRs) are used to measure the frequency, phase angle, and voltage of the power system at ordinary 120 V outlets. The measurement data are continuously transmitted via the Internet to the FNET servers hosted at the University of Tennessee and Virginia Tech.

Statement of Activities and Fixed Assets Expenditures
2016 Budget & Projection, and 2017 Budget
SITUATION AWARENESS

	2016 Budget	2016 Projection	Variance 2016 Projection v 2016 Budget Over(Under)	2017 Budget	Variance 2017 Budget v 2016 Budget Over(Under)
Funding					
ERO Funding					
NERC Assessments	$ 3,624,868	3,624,868	$ 0	$ 3,980,236	$ 355,369
Assessment Stabilization Reserve - Penalties	67,193	67,193	0	52,485	(14,708)
Total NERC Funding	**$ 3,692,060**	**$ 3,692,060**	**$ 0**	**$ 4,032,721**	**$ 340,661**
Third-Party Funding	-	-	-	-	-
Testing Fees	-	-	-	-	-
Services & Software	-	-	-	-	-
Workshops	-	1,128	1,128	-	-
Interest	137	1,816	1,679	140	3
Miscellaneous	-	-	-	-	-
Total Funding (A)	**$ 3,692,197**	**$ 3,695,004**	**$ 2,807**	**$ 4,032,862**	**$ 340,664**
Expenses					
Personnel Expenses					
Salaries	$ 764,342	$ 787,436	$ 23,094	$ 873,869	$ 109,527
Payroll Taxes	58,235	59,443	1,208	58,749	515
Benefits	101,765	135,367	33,601	156,328	54,563
Retirement Costs	85,275	88,342	3,067	96,159	10,884
Total Personnel Expenses	**$ 1,009,617**	**$ 1,070,587**	**$ 60,971**	**$ 1,185,105**	**$ 175,488**
Meeting Expenses					
Meetings	$ 6,500	$ 5,000	$ (1,500)	$ 6,500	$ -
Travel	33,005	32,500	(505)	33,005	-
Conference Calls	1,000	1,000	-	305	(695)
Total Meeting Expenses	**$ 40,505**	**$ 38,500**	**$ (2,005)**	**$ 39,810**	**$ (695)**
Operating Expenses					
Consultants & Contracts	$ 1,211,475	$ 1,268,777	$ 57,302	$ 1,295,850	$ 84,375
Office Rent	-	-	-	-	-
Office Costs	41,052	39,540	(1,512)	41,897	845
Professional Services	-	-	-	-	-
Miscellaneous	500	500	-	500	-
Depreciation	7,727	7,727	-	7,667	(60)
Total Operating Expenses	**$ 1,260,754**	**$ 1,316,544**	**$ 55,790**	**$ 1,345,914**	**$ 85,160**
Total Direct Expenses	**$ 2,310,875**	**$ 2,425,631**	**$ 114,756**	**$ 2,570,828**	**$ 259,953**
Indirect Expenses	**$ 1,302,775**	**$ 1,391,019**	**$ 88,243**	**$ 1,374,338**	**$ 71,563**
Other Non-Operating Expenses	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**
Total Expenses (B)	**$ 3,613,650**	**$ 3,816,649**	**$ 202,999**	**$ 3,945,167**	**$ 331,516**
Change in Assets	**$ 78,547**	**$ (121,645)**	**$ (200,192)**	**$ 87,695**	**$ 9,148**
Fixed Assets					
Depreciation	(7,727)	(7,727)	-	(7,667)	60
Computer & Software CapEx	-	-	-	-	-
Furniture & Fixtures CapEx	-	-	-	-	-
Equipment CapEx	-	-	-	-	-
Leasehold Improvements	-	-	-	-	-
Allocation of Fixed Assets	$ 86,273	$ 72,268	(14,005)	95,361	9,088
Inc(Dec) in Fixed Assets (C)	**$ 78,547**	**$ 64,542**	**$ (14,005)**	**$ 87,695**	**$ 9,148**
TOTAL BUDGET (=B + C)	**$ 3,692,197**	**$ 3,881,191**	**$ 188,994**	**$ 4,032,862**	**$ 340,664**
FTEs	**5.53**	**5.70**	**0.17**	**5.64**	**0.11**

Event Analysis Department

	Event Analysis (in whole dollars) 2016 Budget	2017 Budget	Increase (Decrease)
Total FTEs	11.06	11.28	0.22
Direct Expenses	$ 2,650,065	$ 2,592,388	$ (57,676)
Indirect Expenses	2,605,551	2,748,677	143,126
Other Non-Operating Expenses	-	-	-
Inc(Dec) in Fixed Assets	100,179	105,141	4,962
TOTAL BUDGET	$ 5,355,795	$ 5,446,206	$ 90,411

Background and Scope

The Event Analysis department performs assessments of the reliability and adequacy of the BES. This includes identifying potential issues of concern related to system, equipment, entity, and human performance that may indicate a need to develop remediation strategies, action plans, or data used to revise or retire reliability standards or consider new reliability standards. The department analyzes and determines the cause of the events, promptly ensures tracking of corrective actions to prevent recurrence, and provides lessons learned to the industry. Event Analysis ensures that reporting and analysis are consistent to allow wide-area assessment of trends and risks. The department analyzes all reportable events for sequence of events, root cause, risk to reliability, and mitigation and keeps the industry well informed of system events, emerging trends, risk analysis, lessons learned, and expected actions.

Additional resources within this department focus on identifying human-error risks and those precursor factors that allow human error to impact system reliability. The department educates industry regarding risks, precursors, and mitigation methods. Resources also support compliance and standards training initiatives and trending and analysis to identify emerging reliability risks to the BES. These efforts are conducted in collaboration with industry human performance projects, including WECC's Human Performance Working Group, the NERC Operating Committee's Event Analysis Subcommittee, and others.

Stakeholder Engagement and Benefit

The Event Analysis department coordinates event analyses to support the use of collective resources, consistency in analysis, and timely delivery of event analysis reports.[28] The ERO disseminates to the electric industry lessons learned and other useful information obtained from or as a result of event analysis. The Event Analysis team conducts in-depth analyses of approximately 150 events per year on average. In 2014, the team also conducted calls facilitated by the Regional Entities with over 140 registered entities to discuss in detail and finalize root and contributing causes for the categorized events analyzed. Major analysis to date includes continuing assessment of Energy Management System (EMS) outages, continued collaboration with Reliability Assessments and System Analysis on frequency response performance, analyses of substation equipment failure events and protective relay trends including ground overcurrent relay misoperations, relay communication system failures, and the importance of commissioning testing.

[28] The core process for Event Analysis is outlined in the approved process: Electric Reliability Organization Event Analysis Process - Version 3 (January 2016).

Collaboration with the Trade Associations and Forums

The activities of the NATF, the NAGF, trade associations, and other industry groups are expected to compliment ERO Enterprise activities and limit the need to add incremental resources to the NERC and Regional Entity business plans and budgets that might otherwise be required in the absence of these forums.

NERC is supporting the NAGF's ongoing transformation into a more formal structure through 2017 and continuing through 2018 with logistical and administrative support.

NATF has been invited to participate in several reliability initiatives that are expected to continue into 2017, including protection systems misoperations reduction, physical security, various activities related to reliability assurance initiatives, improvement of modeling practices, and complementary efforts on addressing the GMD challenges.

2017 Goals and Deliverables

In 2017, the Event Analysis department will seek to accomplish several specific goals and objectives as part of the strategic focus of the ERO Enterprise:

- Work with the Regional Entities to obtain and review information from registered entities on qualifying events and disturbances to advance awareness of events above a threshold level; facilitate analysis of root and contributing causes, risks to reliability, wide-area assessments, and remediation efforts; and disseminate information regarding events in a timely manner.
- Ensure that all reportable events are analyzed for sequence of events, root cause, risk to reliability, and mitigation.
- Continue to refine risk-based methods to support better identification of reliability risks, including the use of more sophisticated cause codes for analysis.
- Conduct training (webinars, workshops, and conference support) to inform industry and the ERO of lessons learned, root cause analysis, trends, human performance, and extreme weather preparedness and recommendations.
- Develop reliability recommendations and alerts as needed and track industry accountability for critical reliability recommendations.
- Ensure that industry is well informed of system events, emerging trends, risk analysis, lessons learned, and expected actions.
- Conduct major event analysis and reporting of major findings and recommendations that will improve reliability.

The Event Analysis department will also support several of the top-priority reliability risk projects during 2017 through 2018, as identified and described under the Performance Analysis department section of this document.

Resource Requirements

Personnel

The slight increase in FTEs budgeted in the Event Analysis department in 2017 is due to a lower vacancy rate than in 2016.

Contractor Expenses

No funding is budgeted for contractors and consultants to support the Event Analysis department in 2017, as compared to $56,000 budgeted in 2016.

Statement of Activities and Fixed Assets Expenditures
2016 Budget & Projection, and 2017 Budget
EVENT ANALYSIS

	2016 Budget	2016 Projection	Variance 2016 Projection v 2016 Budget Over(Under)	2017 Budget	Variance 2017 Budget v 2016 Budget Over(Under)
Funding					
ERO Funding					
NERC Assessments	$ 5,181,136	$ 5,181,136	$ 0	$ 5,300,955	$ 119,819
Assessment Stabilization Reserve - Penalties	134,385	$ 134,385		104,970	(29,415)
Total NERC Funding	**$ 5,315,521**	**$ 5,315,521**	**$ 0**	**$ 5,405,926**	**$ 90,404**
Third-Party Funding	-	-	-	-	-
Testing Fees	-	-	-	-	-
Services & Software	-	-	-	-	-
Workshops	40,000	78,073	38,073	40,000	-
Interest	274	2,918	2,644	281	7
Miscellaneous	-	-	-	-	-
Total Funding (A)	**$ 5,355,795**	**$ 5,396,512**	**$ 40,717**	**$ 5,446,206**	**$ 90,411**
Expenses					
Personnel Expenses					
Salaries	$ 1,716,263	$ 1,617,447	$ (98,817)	$ 1,708,049	$ (8,214)
Payroll Taxes	114,132	$ 110,186	(3,946)	108,739	(5,393)
Benefits	202,259	$ 183,405	(18,853)	212,232	9,973
Retirement Costs	191,377	$ 180,295	(11,082)	189,397	(1,980)
Total Personnel Expenses	**$ 2,224,030**	**$ 2,091,333**	**$ (132,698)**	**$ 2,218,416**	**$ (5,614)**
Meeting Expenses					
Meetings	$ 81,500	$ 140,000	$ 58,500	$ 81,500	$ -
Travel	152,487	152,000	(487)	152,487	-
Conference Calls	14,000	14,000	-	4,270	(9,730)
Total Meeting Expenses	**$ 247,987**	**$ 306,000**	**$ 58,013**	**$ 238,257**	**$ (9,730)**
Operating Expenses					
Consultants & Contracts	$ 56,000	$ 56,000	$ -	$ -	$ (56,000)
Office Rent	-	-	-	-	-
Office Costs	49,181	53,576	4,395	49,634	452
Professional Services	-	-	-	-	-
Miscellaneous	500	500	-	500	-
Depreciation	72,367	85,582	13,214	85,582	13,214
Total Operating Expenses	**$ 178,048**	**$ 195,658**	**$ 17,609**	**$ 135,715**	**$ (42,333)**
Total Direct Expenses	**$ 2,650,065**	**$ 2,592,990**	**$ (57,075)**	**$ 2,592,388**	**$ (57,677)**
Indirect Expenses	**$ 2,605,551**	**$ 2,511,155**	**$ (94,396)**	**$ 2,748,677**	**$ 143,126**
Other Non-Operating Expenses	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**
Total Expenses (B)	**$ 5,255,616**	**$ 5,104,145**	**$ (151,471)**	**$ 5,341,065**	**$ 85,449**
Change in Assets	**$ 100,179**	**$ 292,367**	**$ 192,188**	**$ 105,141**	**$ 4,962**
Fixed Assets					
Depreciation	(72,367)	(85,582)	(13,214)	(85,582)	(13,214)
Computer & Software CapEx	-	-	-	-	-
Furniture & Fixtures CapEx	-	-	-	-	-
Equipment CapEx	-	-	-	-	-
Leasehold Improvements	-	-	-	-	-
Allocation of Fixed Assets	$ 172,546	$ 130,463	(42,083)	190,723	18,176
Inc(Dec) in Fixed Assets (C)	**$ 100,179**	**$ 44,881**	**$ (55,298)**	**$ 105,141**	**$ 4,962**
TOTAL BUDGET (=B + C)	**$ 5,355,795**	**$ 5,149,026**	**$ (206,769)**	**$ 5,446,206**	**$ 90,411**
FTEs	**11.06**	**10.29**	**(0.77)**	**11.28**	**0.22**

Electricity Information Sharing and Analysis Center (E-ISAC)[29]

E-ISAC (in whole dollars)	2016 Budget	2017 Budget	Increase (Decrease)
Total FTEs	18.90	19.74	0.84
Direct Expenses	$ 11,965,349	$ 12,276,689	$ 311,340
Indirect Expenses	4,450,914	4,810,185	359,271
Other Non-Operating Expenses	-	-	-
Inc(Dec) in Fixed Assets	351,262	1,428,467	1,077,205
TOTAL BUDGET	$ 16,767,525	$ 18,515,341	$ 1,747,816

Background and Scope

The Electricity Sector Information Sharing and Analysis Center (ES-ISAC) was formed in 1998 when the U.S. Secretary of Energy requested that NERC serve as the ISAC[30] for the Electricity Subsector.[31] This department was rebranded to the Electricity Information Sharing and Analysis Center (E-ISAC) in September 2015. The E-ISAC reduces cyber and physical risk to the Electricity Subsector across North America by providing unique insights, leadership, and coordination. The vision is to be the trusted, timely, actionable resource of grid risk information and analysis to enhance electricity reliability. The E-ISAC facilitates Electricity Subsector and cross-sector coordination regarding physical security and cybersecurity events affecting the BES.

Maintaining Separation from Compliance and Enforcement

In February 2012, and as amended in March 2013, the Board of Trustees approved an E-ISAC Policy Statement that established a separation between the E-ISAC and NERC's compliance and enforcement program. In 2015, physical separation of the E-ISAC was completed. The company also has in place an E-ISAC Code of Conduct and Policy on the Role of the E-ISAC vis-à-vis NERC's Compliance Monitoring and Enforcement Program.

Key Efforts Underway

With industry support, in coordination with the Electricity Subsector Coordinating Council (ESCC) and its Member Executive Committee (MEC), senior management is committed to enhancing the effectiveness and capabilities of E-ISAC operations. These efforts include ongoing enhancement in organizational structure, operational and analytical capabilities, as well as the development of metrics to track the effectiveness of operations. Management will also take steps to improve the quality and value of E-ISAC products, including ongoing review of registered user needs.

[29] In 2015, NERC combined its Critical Infrastructure Department (CID) into the E-ISAC for both operational and financial reporting purposes.

[30] The Information Security Analysis Center (ISAC) construct was conceived and operates under US Government authorities derived from Presidential Decision Directive 63, which was signed in 1998. The ISACs focus specifically on information sharing, analytics and sector activities directly related to the protection of critical infrastructure.

[31] Subsequent administrations have sought to continue and strengthen information sharing in other sectors by establishing other sector-specific ISACs. In 2013, the Department of Energy (DOE) again reaffirmed its desire for NERC to continue to operate the E-ISAC.

During 2015, as part of a periodic review of companywide resource needs and resource allocation, NERC allocated additional resources to support the E-ISAC. Management recruited personnel to fill open positions, and recruited and appointed a senior vice president and chief security officer in charge of E-ISAC operations. Ongoing resource requirements consist primarily of personnel, contractors, consultants, software, hardware and communications infrastructure to gather, analyze, and provide information regarding cyber and physical security threats.

In the fourth quarter of 2014 and with broad industry support, NERC also assumed management responsibility for the Cybersecurity Risk Information Sharing Program (CRISP). CRISP is a public-private partnership whose purpose is to facilitate the sharing of cyber threat information and to develop situation awareness tools that enhance the electricity sector's ability to identify, prioritize, and coordinate the protection of its critical infrastructure. CRISP provides critical infrastructure owners and operators the capability to voluntarily share cyber threat data, analyze this data, and receive machine-to-machine mitigation measures. Information-sharing devices that are installed on participants' networks send encrypted data to a CRISP analysis center operated by the Pacific Northwest National Labs (PNNL), which analyzes the data it receives and sends alerts and mitigation measures back to CRISP participants and the E-ISAC through secure communications. CRISP became fully operational in 2015. The E-ISAC will continue to work with PNNL, CRISP participants and E-ISAC registered users to strengthen program execution, including both quality and timeliness aspects of information sharing. The 2017 E-ISAC budget maintains the same percentage allocation of CRISP funding requirements from assessments and from CRISP participants as 2016. In connection with the growth of the program and related support needs from E-ISAC staff, the 2017 E-ISAC budget also reflects an increase in the number of budgeted E-ISAC FTEs allocated to support CRISP.

Resource Requirements

Personnel

In 2016 additional open budgeted resources were re-allocated to provide support to the E-ISAC[32], resulting in a net increase of 0.84 FTEs.

The E-ISAC staffing and organizational structure has recently been updated to reflect four primary focus areas (1) stakeholder engagement, (2) watch operations (3) cyber security analysis, and (4) physical security analysis. NERC's 2017 organization chart attached as Appendix 1 has been updated to reflect these changes and additional personnel on-boarded in 2016. The E-ISAC will continue to receive shared services support from NERC's corporate services departments (i.e. finance and accounting, IT, HR, legal and external affairs). Personnel providing such shared services will do so only in accordance with strict operating protocols governing access to and use of E-ISAC information as noted above.

Contract Expenses

The specific nature and need for contract support for the E-ISAC falls under three major categories: Program Level Support, Software and Services, and Events and Outreach. Each of these categories is discussed further below and Exhibit C sets forth the 2017 budget for each of these categories of expense.

Program Level Support

CRISP

During 2016 and 2017 NERC will continue to subcontract to PNNL the majority of the resource requirements and associated costs to operate and maintain CRISP.

[32] Departments with reduced staffing needs included the legal, enforcement and standards departments.

E-ISAC Portal Enhancement

The E-ISAC communication portal capabilities include: publishing immediate notifications and other informational products, exchanging threat indicator information, and providing self-service access to user security awareness services. The E-ISAC is working with NERC Information Technology (in the lead) to continue development of the portal that was initiated in 2014 as part of a long-term improvement strategy. Important new enhancements and improved capabilities are presently in use and development. These include facilitating direct data exchange with E-ISAC members, other ISACs and government partners, and establishing user communities where individuals can discuss security issues. The portal's improved capabilities support E-ISAC analysts in their information analysis functions and directly tie them with their counterparts in other sectors and national laboratories.

In 2015, the ESCC presented its recommendations resulting from a review of the E-ISAC operations performed that year. These recommendations included a request to evaluate and potentially enhance the user interface and underlying functionality of the E-ISAC portal. In 2015, the ESCC established a Member Executive Committee (MEC) to provide guidance with respect to various E-ISAC matters, including improvements to the E-ISAC portal. As part of an approved 2016 work plan, the E-ISAC staff worked closely with the MEC to develop a business case and funding estimates for these improvements. Additional details summarizing the business case, funding estimate and additional detail regarding the portal improvement project is attached as Exhibit F.

The 2017 E-ISAC budget includes $1M for the portal enhancements ($250,000 of which is allocated to CRISP)[33]. The MEC has provided written comments in support of this investment.[34]

Additional portal enhancements in 2016 and 2017 will also extend functionality to allow for easier access to filtered data for both the cyber and physical security communities and provide for automated information sharing. Based on input from users, the E-ISAC is transitioning the current portal capability to a platform model that will provide features and extensions beyond what can currently be delivered with the existing portal. Some of the new features will include user customization, visual and graphical orientation (versus text-based), robust search and structured queries, and the ability to create on-the-fly technical analysis of information shared by users. This will be a multi-year project that will evolve as users engage the new capabilities and provide feedback. In 2017 the E-ISAC and NERC IT plan to launch the initial platform prototype with new capabilities, then add capabilities and features in 2018 and subsequent years as needed.

Software and Services

Software Integration Support Services

The E-ISAC operations center includes monitors used to display intelligence information provided from various software applications. Software integration services are routinely required from vendors providing existing and new software applications. Additional software must be licensed and maintained to display and integrate BES maps that have cyber intelligence information. A portion of these costs is budgeted under Office Costs as software maintenance expenses.

[33] The annual impact of the proposed $1M investment on assessments will be approximately $250,000 since projects of this nature are typically financed through NERC's capital financing program and funded over a three year period.

[34] MEC's comments are available on NERC's website

Analyst Workbench

A strong technical analytic capability is needed to develop baselines and identify patterns and understandings of potential cyber-related threats. The analyst workbench toolset maintains historical information and allows a team to use and deliver consistent and repeatable analysis in both an operational (during an event) as well as nonoperational capacity. This workbench will include a threat database for historical correlation and various tools for network- and host-based analysis of malicious software.

Automated Information Sharing

The E-ISAC is broadening automated information sharing beyond CRISP, looking at programs such as the Structured Threat Information Expression/Trusted Automated Exchange of Indicator Information (STIX/TAXII) initiative hosted by the US Department of Homeland Security. As part of a work plan developed in consultation with the MEC, in 2016 the E-ISAC plans to pilot and gather data on these technologies, leveraging existing implementations at Argonne National Lab. The pilot will help the E-ISAC understand the nuances of bi-directional communication, workflow, handling rules, vetting information, and learning from the technology and processes overall. The E-ISAC aims to have seven members signed up by the end of 2016, and, assuming the 2016 pilot is successful, another 10 members sign up by the end of 2017.

Events and Outreach

Grid Security Exercises

Since 2011, NERC has sponsored a series of biennial grid security exercises (GridEx). These geographically distributed exercises are designed to exercise the electricity sector's crisis response to simulated coordinated cybersecurity and physical security threats and incidents, to strengthen utilities' crisis response functions, and to provide input for lessons learned. GridEx III, in November 2015, consisted of a two-day grid-focused operational exercise for participants across North America and a half-day tabletop discussion for executives. The E-ISAC manages the program and collects industry information during and after the exercise subject to existing data collection policies. During the exercise, E-ISAC watch and analysis staff exercise the E-ISAC mission and share severe crisis information sharing and analysis towards mitigating the threats and attacks. Lessons learned and recommendations are turned over to groups like NERC's Board of Trustees and CIPC and to the ESCC for consideration and coordination between industry and government stakeholders. GridEx IV is scheduled for November 15-16, 2017.

Grid Security Conferences

Since 2011, NERC has sponsored a series of annual grid security conferences (GridSecCon). These conferences bring together industry and government subject matter experts on cyber, physical and operations technology threats and solutions, with training sessions and classified or official use briefs on topics vital to grid security. The E-ISAC provides expertise and gathers appropriate speakers, panelists and training providers. GridSecCon 2016 is scheduled for October 18-21 in Quebec, Canada, with the 2017 location and dates TBD.

Intelligence Reporting Services

E-ISAC analytic personnel maintain a detailed understanding of emerging vulnerabilities and threats within the broad industrial control systems community, as well as within the more focused BES community. To support this intelligence role, the E-ISAC budget includes the costs for intelligence services from a specialized security information service providers that focuses closely on the electricity subsector. This service gives E-ISAC staff increased understanding of continuing trends, breaking news, and implications to the BES, which they utilize to keep registered entities informed of emerging BES risks through immediate notifications and portal security postings.

The total budgeted Consultants & Contracts expense for the E-ISAC for 2017 is approximately $6.8 million, an increase of $237k from the 2016 budget. Exhibit C lists the components and amounts of the 2016 and

2017 Consultants & Contracts budgets for the E-ISAC. Approximately 5.8M of the 2017 budgeted amount is for CRISP, which is flat compare the 2016 budget. The remaining $900k budgeted for 2017 is for other E-ISAC activities, an increase of $152k from the 2016 budget.

Statement of Activities and Fixed Assets Expenditures
2016 Budget & Projection and 2017 Budget
E-ISAC

	2016 Budget	2016 Projection	2016 Projection v 2016 Budget Over(Under)	2017 Budget	2017 Budget v 2016 Budget Over(Under)
Funding					
ERO Funding					
NERC Assessments	$ 9,636,756	9,636,756	$ (0)	$ 11,270,705	$ 1,633,948
Assessment Stabilization Reserve - Penalties	229,563	229,563	0	183,698	(45,865)
Total NERC Funding	**$ 9,866,319**	**$ 9,866,319**	**$ (0)**	**$ 11,454,403**	**$ 1,588,084**
Third-Party Funding (CRISP)	6,830,738	7,335,757	505,019	6,990,447	159,709
Workshops	70,000	70,000	-	70,000	-
Interest	468	-	(468)	491	24
Total Funding (A)	**$ 16,767,525**	**$17,272,076**	**$ 504,551**	**$ 18,515,341**	**$ 1,747,816**
Expenses					
Personnel Expenses					
Salaries	$ 3,373,066	$ 3,242,857	$ (130,209)	$ 3,417,398	$ 44,332
Payroll Taxes	208,610	193,941	(14,668)	204,023	(4,587)
Benefits	345,260	315,363	(29,897)	397,467	52,207
Retirement Costs	366,723	351,531	(15,192)	363,482	(3,241)
Total Personnel Expenses	**$ 4,293,659**	**$ 4,103,693**	**$ (189,966)**	**$ 4,382,370**	**$ 88,711**
Meeting Expenses					
Meetings	$ 230,000	$ 229,000	$ (1,000)	$ 230,000	$ -
Travel	256,488	237,455	(19,032)	256,488	-
Conference Calls	22,000	23,000	1,000	6,710	(15,290)
Total Meeting Expenses	**$ 508,488**	**$ 489,455**	**$ (19,032)**	**$ 493,198**	**$ (15,290)**
Operating Expenses					
Consultants & Contracts	$ 6,551,929	$ 7,579,159	$ 1,027,230	$ 6,788,429	$ 236,500
Office Rent	-	$ -	-	-	-
Office Costs	392,285	$ 296,103	(96,182)	431,895	39,610
Professional Services	175,000	$ 175,000	-	175,000	-
Miscellaneous	500	$ 500	-	500	-
Depreciation	43,489	$ 45,998	2,509	5,297	(38,192)
Total Operating Expenses	**$ 7,163,203**	**$ 8,096,760**	**$ 933,557**	**$ 7,401,121**	**$ 237,919**
Total Direct Expenses	**$ 11,965,349**	**$12,689,908**	**$ 724,559**	**$ 12,276,689**	**$ 311,340**
Indirect Expenses	**$ 4,450,914**	**$ 4,601,898**	**$ 150,984**	**$ 4,810,185**	**$ 359,271**
Other Non-Operating Expenses	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**
Total Expenses (B)	**$ 16,416,263**	**$17,291,806**	**$ 875,543**	**$ 17,086,873**	**$ 670,610**
Change in Assets	**$ 351,262**	**$ (19,730)**	**$ (370,992)**	**$ 1,428,467**	**$ 1,077,205**
Fixed Assets					
Depreciation	(43,489)	(45,998)	(2,509)	(5,297)	38,192
Computer & Software CapEx	100,000	111,722	11,722	1,100,000	1,000,000
Furniture & Fixtures CapEx	-	-	-	-	-
Equipment CapEx	-	41,958	41,958	-	-
Leasehold Improvements	-	-	-	-	-
Allocation of Fixed Assets	$ 294,751	$ 248,373	(46,378)	333,765	39,014
Inc(Dec) in Fixed Assets (C)	**$ 351,262**	**$ 356,054**	**$ 4,792**	**$ 1,428,467**	**$ 1,077,205**
TOTAL BUDGET (=B + C)	**$ 16,767,525**	**$17,647,860**	**$ 880,335**	**$ 18,515,341**	**$ 1,747,816**
FTEs	**18.90**	**18.95**	**0.05**	**19.74**	**0.84**

Training, Education, and Operator Certification

Training, Education and Operator Certification (in whole dollars)	2016 Budget	2017 Budget	Increase (Decrease)
Total FTEs	7.38	7.05	(0.33)
Direct Expenses	$ 2,062,086	$ 1,922,295	$ (139,791)
Indirect Expenses	1,737,034	1,717,923	(19,111)
Other Non-Operating Expenses	-	-	-
Inc(Dec) in Fixed Assets	113,112	117,283	4,171
TOTAL BUDGET	$ 3,912,231	$ 3,757,501	$ (154,731)

Background and Scope

NERC's Training and Education Program provides oversight and coordination of the delivery of training programs that support the ERO's statutory responsibilities. This program provides training to NERC and Regional Entity staff members. It also provides training and education to industry participants on the requirements of reliability standards and the compliance monitoring and enforcement process. Further, this program provides training to industry participants on NERC's reliability standards development process, thereby helping to support the more efficient and effective development of mandatory reliability standards. The Training and Education Program supports NERC's responsibilities to develop, adopt, and obtain approval of reliability standards and to monitor, enforce, and achieve compliance with the mandatory standards. Section 901 of the NERC Rules of Procedure addresses the Training and Education Program's activities. The responsibility for training is shared among multiple departments at NERC.[35]

NERC's System Operator Certification program ensures that personnel operating the BES have the skills, training, and qualifications needed to operate the system reliably. NERC maintains the required credentials for over 6,000 system operators to work in system control centers across North America. NERC's system operator certification exam is designed to test specific knowledge of job skills and reliability standards. It also prepares operators for complying with requirements of reliability standards and appropriately operating the BES during normal and emergency operations. The System Operator Certification Program is governed by the Personnel Certification Governance Committee (PCGC), an industry group of operations experts, trainers, and supervisors. Certification exams are created by the Exam Working Group (EWG), an industry group of operations subject matter experts. Under the PCGC oversight, the EWG reviews and updates job tasks and certification exams. Section 600 of the NERC Rules of Procedure addresses the Personnel Certification activities in the area of Operator Certification.

Once an operator passes the certification exam, certification is maintained by completing NERC-approved continuing education courses and activities. The Personnel Subcommittee, composed of industry training experts, provides oversight of the Continuing Education program. Section 902 of the NERC Rules of Procedure addresses the Continuing Education Program's activities in these areas.

[35] The Human Resources department is also engaged in training initiatives.

Key Efforts Underway

The ERO provides education for industry and ERO Enterprise staff personnel to support their understanding of key program areas. These areas include:

1. Risk-Based Compliance Monitoring and Enforcement
2. Standards and Compliance
3. Registration and Certification
4. Event Analysis, Cause Analysis, and Lessons Learned
5. Reliability Assessment and System Analysis
6. Continuing education for system operators
7. New System Operator Certification exams for each credential: Reliability Coordinator; Transmission Operator; Balancing and Interchange Operator; and Balancing, Interchange and Transmission Operator.

2017 Goals and Deliverables

In response to stakeholder and Regional Entity feedback, training and education opportunities will be further expanded and focused for registered entities, NERC staff, and Regional Entities. For registered entities, this training and education will focus on objectives related to NERC reliability standards, including standards compliance and emerging cyber-related issues that could affect BES reliability. For NERC and Regional Entity staff, the training and education will focus on consistent audit and investigation techniques and standards compliance reviews, including the risk-based compliance monitoring and enforcement and other improvements in compliance and enforcement practices. NERC will continue to offer training in auditor skills to promote continued development of auditing expertise. NERC will leverage IT systems to better deliver and share common training products and information with Regional Entities and registered entities. Other training will focus on knowledge and skill development in a number of key areas, including:

- Development and implementation of clear and technically sound reliability standards
- Key lessons learned and trends from events
- Identified themes from trending and common-cause analyses
- Effective compliance cultures with practices, procedures, and controls to address reliability risks
- Effective root, apparent, and common-cause analysis methods
- Quality improvement of registered entity self-reporting and self-certification
- Entity registration processes, issues, and alternatives
- Human performance fundamentals
- Developing and incorporating a systematic approach to ongoing training

NERC will continue to provide learning opportunities through workshops hosted by the Regional Entities. NERC will also host workshops, webinars, and training courses, as well as use vendors to develop training modules and supplement internal training resources. The responsibility for the subject matter expertise for much of the training is shared among multiple departments at NERC. The Training and Education group will provide coordination and synchronization efforts for shared NERC and ERO training responsibilities in addition to advancing and improving the skills of NERC's operating staff. NERC's Human Resources department will continue to budget and manage the delivery of more traditional corporate employee

training and continuing education programs in concert with the coordination and synchronizing efforts of the Training and Education group.

As part of the System Operator Certification exam development cycle, the results of the 2015 job task analysis (JTA) is the baseline for the upcoming set of exams. The EWG will continue to analyze new items and develop a cut score for the pending 2018 exams.

Key deliverables for the System Operator Certification Program:

- Complete analysis of exam Item Bank
- Implementation of Linear On the Fly (LOFT) testing for all exams

NERC will continue to work with industry stakeholders and the exam development vendor to create certification exams that will promote reliability of the North American BPS.

The Continuing Education (CE) program will evaluate and revise the current program criteria as reflected in the program manual. The evaluation will consider the growth and maturation of industry training programs as well as ongoing research in the area of adult learning to ensure the CE program continues to foster improvement of training and promotes quality in training programs.

Resource Requirements

Personnel

No additional personnel are proposed for this area in 2017. The small reduction in budgeted FTE is due to a slight reduction in FTEs supporting the Operator Certification Program.

Contractor Expenses

The total proposed consulting and contractor budget is approximately $95k lower in 2017 than the 2016 budget.

Further detail in support of the proposed 2017 contractor and consulting budget to support Training, Education, and Operator Certification is set forth in Exhibit C, which includes a comparison to 2016 budgeted amounts. The primary areas of contractor and consulting support include:

- Testing services to develop, administer, proctor, score, and support system operator certification exams across North America.
- Ongoing hosting and maintenance fees for the System Operator Certification and Continuing Education (SOCCED) database.
- Improvements to the SOCCED database.
- Supplemental support to Continuing Education Review Panel industry volunteers to review and audit over 2,500 individual learning activities and provider applications received each year.[36]
- Audit team leader soft skills training delivered by certified NERC staff using vendor-licensed materials to support effective dialogue and communications between audit teams and registered entities.

[36] Review and approval of learning activity applications results in over 400,000 hours of continuing education per year for the industry's certified system operators.

- Vendor-supported BES technical training for select ERO staff, including compliance, technical and support staff.
- Risk-based compliance training by recognized specialists for NERC and Regional Entity staff to promote continued development of compliance staff.
- Web-based training development for ERO staff and industry, including standards applications, risk assessment training, industry human performance fundamentals, and BES events lessons learned.
- An ERO Enterprise learning management system to support scheduling, computer-based training delivery and record maintenance for ERO and select Enterprise staff.

Statement of Activities and Fixed Assets Expenditures
2016 Budget & Projection, and 2017 Budget
TRAINING, EDUCATION and OPERATOR CERTIFICATION

	2016 Budget	2016 Projection	Variance 2016 Projection v 2016 Budget Over(Under)	2017 Budget	Variance 2017 Budget v 2016 Budget Over(Under)
Funding					
ERO Funding					
NERC Assessments	$ 1,742,146	$ 1,742,146	$ 0	$ 1,822,089	$ 79,944
Assessment Stabilization Reserve - Penalties	55,994	55,994	$ -	43,738	(12,256)
Total NERC Funding	**$ 1,798,139**	**$ 1,798,139**	**$ 0**	**$ 1,865,827**	**$ 67,687**
Third-Party Funding	-	-	-	-	-
Testing Fees	1,867,972	1,867,972	-	1,921,900	53,928
Services & Software	-	-	-	-	-
Workshops	-	-	-	-	-
Interest	183	2,096	1,913	175	(7)
Miscellaneous	-	-	-	-	-
Total Funding (A)	**$ 3,666,294**	**$ 3,668,207**	**$ 1,913**	**$ 3,787,902**	**$ 121,608**
Expenses					
Personnel Expenses					
Salaries	$ 857,257	$ 849,104	$ (8,153)	$ 852,091	$ (5,166)
Payroll Taxes	64,345	65,293	948	62,727	(1,619)
Benefits	133,991	114,786	(19,205)	139,239	5,248
Retirement Costs	94,860	97,129	2,268	97,624	2,764
Total Personnel Expenses	**$ 1,150,454**	**$ 1,126,312**	**$ (24,142)**	**$ 1,151,681**	**$ 1,227**
Meeting Expenses					
Meetings	$ 80,000	$ 55,000	$ (25,000)	$ 55,000	$ (25,000)
Travel	21,139	19,900	(1,239)	21,139	-
Conference Calls	36,500	36,500	-	11,133	(25,368)
Total Meeting Expenses	**$ 137,639**	**$ 111,400**	**$ (26,239)**	**$ 87,272**	**$ (50,368)**
Operating Expenses					
Consultants & Contracts	$ 675,800	$ 731,460	$ 55,660	$ 580,600	$ (95,200)
Office Rent	-	-	-	-	-
Office Costs	95,773	104,935	9,161	100,323	4,550
Professional Services	-	-	-	-	-
Miscellaneous	500	500	-	500	-
Depreciation	1,919	1,919	-	1,919	-
Total Operating Expenses	**$ 773,992**	**$ 838,814**	**$ 64,821**	**$ 683,342**	**$ (90,650)**
Total Direct Expenses	**$ 2,062,086**	**$ 2,076,525**	**$ 14,440**	**$ 1,922,295**	**$ (139,791)**
Indirect Expenses	**$ 1,737,034**	**$ 1,810,570**	**$ 73,536**	**$ 1,717,923**	**$ (19,111)**
Other Non-Operating Expenses	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**
Total Expenses (B)	**$ 3,799,119**	**$ 3,887,096**	**$ 87,976**	**$ 3,640,218**	**$ (158,901)**
Change in Assets	**$ (132,825)**	**$ (218,888)**	**$ (86,063)**	**$ 147,684**	**$ 280,510**
Fixed Assets					
Depreciation	(1,919)	(3,838)	-	(1,919)	-
Computer & Software CapEx	-	-	-	-	-
Furniture & Fixtures CapEx	-	-	-	-	-
Equipment CapEx	-	-	-	-	-
Leasehold Improvements	-	-	-	-	-
Allocation of Fixed Assets	$ 115,031	$ 103,360	(11,671)	119,202	$ 4,171
Inc(Dec) in Fixed Assets (C)	**$ 113,112**	**$ 99,522**	**$ (11,671)**	**$ 117,283**	**$ 4,171**
TOTAL BUDGET (=B + C)	**$ 3,912,231**	**$ 3,986,618**	**$ 76,305**	**$ 3,757,501**	**$ (154,731)**
FTEs	**7.38**	**7.39**	**0.01**	**7.05**	**(0.33)**

Administrative Services

Administrative Services (in whole dollars)	Direct Expenses and Fixed Assets			FTEs		
	2016 Budget	2017 Budget	Increase (Decrease)	2016 Budget	2017 Budget	Increase (Decrease)
General and Administrative	$ 9,881,311	$ 10,205,977	$ 324,666	17.52	16.92	(0.60)
Legal and Regulatory	3,465,966	3,292,379	(173,587)	12.22	11.28	(0.94)
Information Technology	12,156,674	12,480,846	324,171	22.13	23.27	1.14
Human Resources	1,510,177	1,608,583	98,406	2.77	2.82	0.05
Finance and Accounting	3,428,307	3,827,050	398,743	16.60	15.04	(1.56)
Total Administrative Services	**$ 30,442,435**	**$ 31,414,834**	**$ 972,399**	**71.23**	**69.33**	**-1.91**

Program Scope and Functional Description

NERC's Administrative Services area includes the budget for all business and administrative functions of the organization, including (1) technical committees and member forums; (2) General and Administrative, which includes Board fees and expenses, the president and chief executive officer (CEO), chief reliability officer (CRO) and support staff, communications, external affairs and governmental relations, and office rent; (3) Legal and Regulatory; (4) Information Technology; (5) Human Resources; (6) Finance and Accounting; and (7) other general administrative expenses necessary to support program area activities. These functions are necessary to the existence and functioning of the organization and support the performance of NERC's ERO statutory activities. The costs of the Administrative Services functions are allocated to the five statutory programs as indirect expenses. The resource requirements and comparative budget information for each of these functions are described below.

Technical Committees and Members' Forum Program

While NERC management and staff will continue to interact with and support numerous reliability-related forums (e.g., the North American Transmission Forum and Generator Forum), NERC's 2017 budget does not contain specific funding for any forum activities.

General and Administrative

Background and Scope

The General and Administrative area is responsible for the administration and general management of the organization. Expenses allocated in this area include office rent; personnel and related costs of the CEO, the CRO, the CEO's executive assistant, communications, external affairs and government relations staff, and costs related to the Board. No additional personnel are budgeted for 2017 beyond current staffing. The slight reduction in FTEs in the General and Administrative area is due to a lower vacancy rate used in 2017 compared to 2016.

The following table details the Board costs included in the total costs of the General and Administrative area.

Board of Trustee Expenses	Budget 2016	Projection 2016	Budget 2017	2017 v 2016 Budget	Variance %
Meetings and Travel Expenses					
Quarterly Board Meetings	$ 244,000	$ 244,000	$ 244,000	$ -	
Trustee Travel	150,000	150,000	150,000	-	
Total Board of Trustees Meetings and Travel Expenses	**$ 394,000**	**$ 394,000**	**$ 394,000**	**$ -**	
Professional Services				-	
Independent Trustee Fees	$ 1,126,354	$ 1,126,354	$ 1,226,000	$ 99,646	
Trustee Search Fees	100,000	100,000	100,000	-	
Total Board of Trustee Professional Services Expenses	**$ 1,226,354**	**$ 1,226,354**	**$ 1,326,000**	**$ 99,646**	**8.13%**
Total Board of Trustee Expenses	**$ 1,620,354**	**$ 1,620,354**	**$ 1,720,000**	**$ 99,646**	**6.15%**

Legal and Regulatory

Background and Scope

The Legal and Regulatory department's workload is derived from the following key NERC program areas: Compliance Analysis, Certification and Registration, Reliability Risk Management, Reliability Assessment and System Analysis, Performance Analysis, and Standards. In addition, the Legal and Regulatory department is also responsible for providing a wide range of legal support to the NERC management team regarding antitrust, corporate, commercial, insurance, contract, employment, real estate, copyright, tax, legislation, and other legal matters. The department also addresses legal and regulatory matters that arise in connection with the delegation agreements with the Regional Entities.

Resource Requirements

Due to process improvements and increased efficiency, the number of FTEs allocated to the department was reduced in 2017 compared to 2016.

Outside law firms and consultants supporting this area are budgeted and tracked as Professional Services. The Professional Services budget for 2017 was reduced by approximately 25% compared to the 2016 budget.

Information Technology

Background and Scope

NERC's IT department plan includes capital and operating expenses required to support, build, configure, and enhance applications that serve registered entities, Regional Entities, and NERC staff. The plan also includes work related to ERO Enterprise data analysis, as well as ongoing NERC internal operations.

The focus of the 2017 – 2019 budget places a heavy emphasis on applications and data analytics designed to improve and enhance the efficiency and productivity of NERC and the Regional Entities, and support more consistent and streamlined interactions with registered entities. These investments will provide broad benefits across the ERO Enterprise in terms of the efficiency and effectiveness of operations and meeting our reliability goals. Additionally, by working to provide more services to the Regional Entities in terms of tools and systems, associated economies of scale will result in these initial investments providing increasing value across the ERO Enterprise in the years to come.

The budget is broken down into four categories as follows:

1. **ERO Enterprise New Functionality –** Items listed in this category are those items designed to add, enhance, or improve, capabilities for registered entities, Regional Entities, and NERC staff. This includes items such as Enterprise Reporting, data analytics and warehousing, the Misoperation Information Data Analysis System (MIDAS), User Management and Registration (UMR), and the Generating Availability Data System for Wind Turbine Generation (GADS Wind).
2. **ERO Enterprise Infrastructure & Support –** Items listed in this category are those infrastructure and support items required for applications used by registered entities, Regional Entities, and NERC staff. Items include The Events Analysis Management System (TEAMS), the Bulk Electric System Notification and Exception System tool (BESnet), the Standards Balloting System (SBS), the Reliability Coordinator Information System (RCIS), and numerous other applications.
3. **NERC New Functionality –** Items in this category are those items that enhance or improve the internal NERC infrastructure, such as Document Management, telephony, and audio visual.
4. **NERC Infrastructure & Support –** Items listed in this category are primarily those items required to maintain and run the internal office infrastructure, and support NERC staff operations. Items include server hardware and software licenses, network equipment, data and telecommunication circuits, and data storage, as well as office administrative applications (e.g., Microsoft Office) and user hardware such as laptops and peripherals.

A further discussion of each item is outlined below:

ERO Enterprise New Functionality:
As noted above, this category is primarily those applications or systems designed to improve or add capability to registered entities, Regional Entities, and NERC staff. Over the past two years, IT has been successful at deploying a number of new applications and functionality for the ERO Enterprise that have now moved into support. In 2017 and beyond, IT will continue that trend with a heavy focus on data and analytics.

a. Enterprise Reporting. In 2015, IT was successful at providing Enterprise Reporting Phase 1 and 2. In the latter part of 2016, IT will bring generation performance data into the Enterprise Reporting system. In 2017 and subsequent budget planning years IT will focus on additional datasets, as well as increasing the analytical and data mining capabilities for the ERO Enterprise.

b. Entity Registration. In 2016, IT began an effort to replace its existing "User Management Program" customer relationship management tool with one based on Microsoft Dynamics CRM (xRM). In 2017, that effort will be extended by integrating the compliance registration function into the xRM system, including implementation of the "common registration form." This will result in a common registration system shared across the ERO Enterprise that provides a consistent user experience for registered entities.

c. Compliance Monitoring and Enforcement Process Tools. IT will also work closely with the Regional Entities in 2017 to evaluate and implement strategic investments in tools that support the Compliance Monitoring and Enforcement Process. Items under consideration at this time include how NERC and the Regional Entities manage registered entity information (and how that information integrates with Enterprise Reporting to provide reliability risk analysis functionality), how Reliability Standards data is stored and maintained, and how best to support the various parts of the compliance and enforcement process (e.g., analysis of risk, development of implementation plans and audit schedules, actual compliance monitoring, and enforcement processing). Funding for any capital investments in new Enterprise Compliance and Monitoring

Tools will be subject to review and approval as part of the business plan and budget application to the year when such investments are proposed to be made.

d. Extranet Development – NERC IT currently provides external collaboration function through the use of secure WebDAV folders and limited deployment of Microsoft SharePoint. In 2017, IT will develop a more robust implementation of SharePoint to provide better services and support for collaboration across the ERO Enterprise and with stakeholders.

ERO Enterprise Infrastructure & Support:
This line item primarily consists of items used by registered entities, Regional Entities, and NERC Staff. During 2015 and 2016, IT, worked closely with the Regional Entities to design and configure a number of ERO Enterprise applications, with a bias toward using Commercial-off-the-Shelf (COTS) technology whenever possible. Infrastructure and support for these COTS tools (such as SharePoint and the Dynamics xRM platform), as well as custom built applications developed in the past, require ongoing investment to maintain continuous operations. For many applications and systems, this includes the cost of maintaining development, quality assurance, and staging and production environments, which are required to ensure the security and operational integrity and stability of the multiple applications supported for the ERO Enterprise. These applications and systems are monitored, tested (including penetration and vulnerability testing), and maintained in a manner as to ensure the highest level of integrity, security, and availability to the roughly 4,000 users across North America.

In 2016, IT placed emphasis on ensuring the environment was configured in a manner consistent with enterprise best practices, ensuring the security and integrity of the environment while allowing ERO Enterprise users to obtain the information and resources required to perform various analyses. Ongoing support for applications such as TEAMS, MIDAS, SBS, the Reliability Analysis Data System (RADS), in addition to numerous legacy ERO Enterprise products, make up this portion of the IT budget.

NERC New Functionality:
Items included in this category are primarily those items designed to improve, enhance, or replace existing functionality for internal NERC staff and, generally speaking, are not consumed by ERO Enterprise clients.

a. **Document Management Program and Intranet Enhancement** – During 2015 and 2016, NERC began implementation of a document management system, leveraging SharePoint 2013 as the foundational platform. The implementation of a document management program supports a number of important business requirements, including:

- Ensuring proper classification and management of confidential information
- Addressing a number of internal audit recommendations/mitigating corporate risk
- Improving information access and search capabilities
- Facilitating working group, team, and stakeholder collaboration
- Supporting document retention policy and procedures
- Simplifying document retrieval
- Improving version control of documents
- Improving workflow control (review and approval of documents)
- Increasing efficiency and employee productivity

Two additional products were integrated as part of this effort: Gimmal Compliance Suite, an add-on to SharePoint, which enables robust records management capabilities, and Repstor Affinity, which enables offline visibility into content repositories via Microsoft Outlook. In

2016, NERC will implement document management for six program areas. In 2017, NERC will bring the remaining program areas into the document management program. The implementation of a document management program is a multi-year initiative designed to greatly reduce the manual and labor-intensive effort of managing thousands of documents by streamlining the storage, security, versioning, data classification, and archiving of NERC information.

b. **Audio Visual –** During 2016, IT will replace audit visual (AV) equipment in NERC's primary conference rooms with a Cisco WebEx solution designed to enhance capability (e.g. video conferencing), in addition to reducing cost of travel, when possible. In 2017, as appropriate and approved, additional conference rooms will be refreshed with AV equipment.

c. **IT Infrastructure Services** – During 2016, IT undertook an initiative to leverage qualified vendors for sourceable work, allowing IT to place a greater emphasis on ERO Enterprise projects. Network monitoring is one example of where NERC has been successful in moving items such as monitoring to a qualified vendor. While technically not "new" capability, implementation of this new approach to network monitoring allows NERC's internal IT resources to focus on larger initiatives designed to serve the ERO Enterprise. IT will continue to pursue this strategy in 2017 as additional work is identified that can be efficiency and cost effectively assumed by qualified vendors.

d. **Public Facing Website Improvements** - Over the past several years, NERC has made a number of updates to its outward-facing Internet presence, during which technology improvements are made and suggestions and requests are implemented. In 2017, IT will work with the company's communications department to begin a project to review the information architecture of the NERC.com site and make changes with the goal of providing a more streamlined user experience.

NERC Infrastructure & Support

As previously noted, NERC Infrastructure & Support are those items required to maintain and support the internal infrastructure for NERC staff. Items such as file servers, network equipment, storage, Microsoft Office (Word, Excel, PowerPoint, Email, SharePoint, etc.), along with security and telecommunications are required to ensure staff have the necessary tools and technology to perform their daily operational functions. Emphasis in 2017 and in the 2018 – 2019 planning cycle will continue to be placed on optimizing the amount of effort placed on NERC infrastructure and support in order to minimize spend on internal office steady state operations, allowing a larger portion of IT resources to focus on new ERO Enterprise functionality, as well as ERO Enterprise infrastructure and support. Examples of items included in internal operations are outlined below**:**

a. **Compliance Reporting and Tracking System (CRATS)** – This compliance database is used to track violations, mitigation plans, and reporting required by NERC as the certified ERO. The compliance database has additional modules, such as the Standards, Technical Feasibility Exceptions (TFEs), and Registration module, which contains a list of all registered entities. Funding requirements include ongoing maintenance and enhancements to the CRATS compliance tools.

b. **Meeting Manager, ERO Membership, RCIS, Central Repository of Curtailment Events (CRC)** – NERC maintains a number of legacy applications. Many of the legacy applications were developed and implemented five to ten years ago and are unable to benefit from contemporary application development. Some of these applications may have to be completely rewritten, or moved to the xRM application platform, as IT was able to do with Application Broker, NERC MyAccount and UMP in 2016. Funding in 2017 is required for

ongoing maintenance and enhancements until the applications can be rewritten or moved to the xRM platform or, in some cases, potentially divested or transferred to industry support.

c. **Quarterly Penetration and Vulnerability Testing All NERC Networks and Systems** – Expert consulting services to provide ongoing intrusion detection and vulnerability testing of the NERC public website and NERC's network, applications, and systems, is an essential requirement of ongoing operations. NERC is subject to frequent intrusion attempts where external parties try to gain access to its systems and infrastructure. Any vulnerability identified is documented and provided to NERC IT for rapid remediation.

d. **NERC Security Program -** NERC's IT department performs a number of technology initiatives to ensure the security of the network and infrastructure. However, in order to continually improve security, a more holistic approach is required that implements technology improvements and constructs an overarching security program to ensure all aspects of security have been considered, including information classification, review of retention policies, and enforcement of security guidelines. During 2016, IT undertook an initiative to improve several processes and will continue to place a high emphasis on security over the coming years.

Robust Planning for New Capital Projects

In connection with the 2016 business planning cycle, the company significantly improved its approach to evaluating potential capital investments in major enterprise software applications. The company has adopted an enterprise information technology investment planning methodology that ensures only projects with compelling and approved business cases are funded. The approval process uses four approval gates:

- A Business Unit Sponsor approval gate,
- A NERC VP/CTO approval gate,
- An ERO Technology Leadership Team (comprised of the NERC CEO and two Regional Entity CEOs) approval gate, and
- The full ERO-EMG (CEOs of NERC and each Regional Entities) approval gate.

This gated process provides the required rigor and discipline to ensure only high value enterprise IT investments are pursued. In addition, all Enterprise IT investments are subject to ongoing oversight by a subgroup consisting of four members of the Board's Standards Oversight and Technology Committee. The company will continue to use this process for the 2017 – 2019 budget planning cycle.

TEAMS, the RADS, and the document management program are three examples of applications or programs for which investments were approved in 2016 using the new enterprise information technology investment planning methodology.

TEAMS. The TEAMS application provides integration of events data systems, while enabling a more efficient and effective method for event data collection, tracking, analysis and reporting. This enhances the ability of the ERO and stakeholders to identify and focus on significant and emerging reliability risks. This tool is used by NERC and the Regional Entities, providing a consistent experience for all ERO clients involved in the events analysis business process. The benefits provided by the TEAMS application streamline ERO Enterprise reliability data sources with an event data collection platform that is consistent with the event analysis process. Benefits include:

- **Improving Efficiency:** TEAMS helps ensure the reliability of the Bulk Power System by facilitating:

  - The reporting of a BPS event
  - The evaluation of BPS events
  - The undertaking of appropriate levels of EA
  - The generation of lessons learned
  - The generation of reliability trend analysis

- **Managing Reliability Risk:** TEAMS enables the ERO Enterprise to integrate event reports with other reliability data sources and develop portfolios of risk information. This integration enables a more complete analysis into the cause of events, including transmission outages, generation trips, and load loss. With this analysis, the ERO Enterprise can better identify unplanned service interruptions and spotlight key areas for reliability improvement, with the ultimate goal of reducing the probability and reliability impact of future system events.
- **Fostering Collaboration:** Increased efficient and effective collaboration amongst NERC and the Regional Entities has resulted through the centralization and appropriately secure distribution of information across Regions (including EA results, trending analysis, and lessons learned), and the increased clarity and standardization of processes provided by the software solution.

RADS. The RADS provides for a more efficient method for NERC to complete seasonal and long-term reliability assessment reports. Specifically, RADS automates the importing of data, provides for ad hoc and pre-defined reporting, and provides access to historical data. In fact, a recent benchmarking exercise indicated that RADS enabled a routine data import process to be completed in 22 minutes as compared to prior manual work efforts totaling roughly 80 hours. This process improvement has allowed NERC's analysts and engineers to spend more time analyzing reliability and less time importing and managing data. Additional benefits of RADS include:

- **Management of Reliability Risk.** By allowing analysts to refocus their efforts on higher value work, the implementation of RADS is resulting in more and better analyses of future conditions and risks.
- **Improved Quality.** Part of the reason for the respected status of the ERO and its assessments conducted and published by the ERO is the high level of quality embodied within its documents. If factual errors were introduced into NERC's reliability assessments, such errors would considerably diminish the ERO's credibility. By centralizing information and reducing the number of manual interventions required to manage data, the RADS aids in ensuring that the information contained within NERC assessments is accurate and correct.
- **Increased Security.** NERC has obligations to ensure the integrity and security of assessment data. Having a central place to manage and store assessment data has reduced the number of instances of confidential proprietary data being handled and managed at NERC. As such, the risk of accidental inappropriate disclosure has been reduced.

Document Management. As a third example, as described previously, NERC commenced implementation of a document management program during 2015 and 2016. The evaluation of the cost-benefit of the document management program indicated tremendous value to the organization, primarily in terms of addressing the business requirements set forth above. The cost benefit analysis of this project also demonstrated that NERC's projected average cost per user is

comparable to market. In addition, assuming achievement of modest personnel efficiency gains (between 2-7 percent) from using the new system, the program will generate value in terms of increased resource availability well above anticipated costs. The project was reviewed in depth with the board of trustee's Standards Oversight and Technology Committee and Finance and Audit Committee, which, together with the Board, authorized reserve funding at their May, 2015 meetings to commence initiation of the program.

For all three of these projects, NERC's planning process and associated approval gates resulted in thorough review of both costs and benefits of the proposed technology projects prior to moving forward. As the planning process has matured, NERC has also begun to analyze potential benefits to the Regional Entities when considering the benefits from potential IT investments. In the Enterprise Reporting – GADS business case brought before the ERO Technology Leadership Team in April, NERC included estimates of productivity gain in terms of both NERC staff and the staff of the Regional Entities. NERC estimated that across the ERO Enterprise, in the first year of operation, 32 Regional Entity employees would save roughly 10 hours of time per employee and 42 NERC employees would save roughly 29 hours of time per employee, with benefits increasing in future years as users became more familiar with the system and as the system was expanded with additional data. This saved time represents additional value that those employees can provide by not having to manage data or duplicate work. Beyond this analysis, the business case considered less quantifiable benefits to both NERC and the Regional Entities in terms of supporting the ERO Enterprise Strategic Plan and reducing reliability risk.

As the planning process continues to develop and mature, NERC will continue to expand incorporation of regional staffing and budget impacts into its business case analysis, as well as identifying economies of scale, efficiency improvements, and enhancements to reliability through IT investment.

Resource Requirements

Personnel

The increase in Information Technology FTEs is due to the reallocation of personnel to strengthen project management oversight over NERC and ERO Enterprise software application development and implementation.

Contract and Consulting Resources to Support Internal Operations

The 2017 budgeted amounts are set forth in Exhibit C, with a comparison to 2016 budgeted amounts. The increase in the 2017 budget compared to 2016 is primarily due to ongoing maintenance costs for recently added ERO Enterprise applications and costs for the document management program.

2017 IT Operating Expenses

A summary of the major categories of IT Operating Expenses are set forth in the following table:

Office Costs	Budget 2016	Budget 2017	Variance
Telephone	$ 225,000	$ 230,000	$ 5,000
Telephone - Answering Service	3,000	2,500	(500)
Internet	350,000	358,920	8,920
Computer Supplies and Maintenance			
Computers	25,000	25,000	-
Computer Supplies	96,100	98,100	2,000
Maintenance & Service Agreements	1,365,295	1,706,088	340,793
Software	59,000	59,000	-
Subscription and Publications	108,300	108,300	
Dues	2,500	2,500	
Express Shipping	5,000	5,000	-
Total Office Costs	**$ 2,239,195**	**$ 2,595,408**	**$ 356,213**

Telephone Expenses
Office telephone costs are items associated with cellular phone, mobile laptop cellular air card, Session Internet Protocol (SIP) data circuits, and conference calling expenses.

Internet Expense
Internet expense is comprised of data circuits, and redundant capability in the event of primary service provider failure.

Computer Supplies and Maintenance
Computers (expensed) are lower cost computers, such as desktop computers or iPads that do not meet the criteria to be considered a capital expenditure. Computer supplies are expense items required for infrastructure support. Maintenance and service agreements are required to support internal and external access to routers, switches, firewalls, intrusion protection, file servers, audiovisual equipment, storage area networks, data backup services, network and security monitoring, co-location data center services, video conferencing, digital certificates, and development and virtualization software. Service agreements related to the co-location data center, offsite backup of data, conference calling, and network and security monitoring comprise a large portion of the maintenance and service agreements budget.

Software
Tools such as Adobe Creativity Suite, remote support tools, and various other IT support tools are included under this line item. The tools are primarily used for NERC infrastructure purposes to support and manage the application, server, and network environment.

2017 IT Fixed Asset (Capital) Expenses

The following table presents a summary of NERC's IT 2017 fixed asset (capital) budget[37] compared to the 2016 budget:

IT CAPITAL BUDGET	2016	2017
ERO Application Development	$ 1,500,000	$ 700,000
Document Management Program	465,000	335,000
Hardware (Storage, servers, laptops)	955,000	991,000
Other Equipment	535,000	885,000
Disaster Recovery	200,000	150,000
NERC Software licenses	256,000	211,000
Total IT Capital Budget	**$ 3,911,000**	**$ 3,272,000**

As in prior years, the goal of the fixed assets program, for the 2017–2019 planning period is to provide access, visibility, and analysis of data from many different sources; this requires ongoing investments in hardware, software, and associated tools. The overarching theme is to securely gather, analyze, and maintain data across the ERO Enterprise to support ERO operations. Adding the capability to centralize and mine data—in addition to foundational elements such as the Microsoft xRM application, SharePoint 2013, and disaster recovery and enhanced security—sets the stage for vastly improved reporting and business intelligence. It also allows the capability for collaboration and sharing of information vital to the ERO's mission.

In addition to the investments described in the preceding paragraph to support efficiency and consistency across the Enterprise, the 2017 budget also includes the cost of, network assets, software, servers, laptops, and other hardware to support daily operations.

Human Resources

Background and Scope

Human Resources (HR) manages all of NERC's HR functions, including staffing, benefits administration, employee relations, performance and compensation management, and training and development. Management has implemented a robust, objective, and auditable performance management system to track corporate and individual performance against pre-established goals, objectives, and measures. Each year NERC continues to refine and improve this system.

Leadership, Management, and Professional and Administrative Staff Training and Development

As part of the 3-year ERO Enterprise Strategic Plan to engage and retain highly qualified talent with the leadership and technical skills to support the mission, NERC's executives, managers, and professional and support staff participate in ongoing training and development to improve competencies critical to success and succession planning for critical roles. As such, NERC will continue to invest in learning opportunities in several areas. First, HR will continue to host and optimize an e-leaning platform, SkillSoft, to provide staff resources for improving soft and technical skills. Second, HR will provide broad-based staff development training though real-world access via tours of and training on control centers, electric substations, and power generation plants. Finally, staff will have access to additional education, including but not limited to degree-oriented university education, pursuit of specialized certifications, and other in-

[37] NERC's total 2017 fixed asset (capital) budget is $4,372,000, and includes $1.1M budgeted in E-ISAC for portal enhancements and other costs related to CRISP.

house and external training that provides essential competencies and skills development that will lead to improved organization performance.

Compensation Consulting
Consultants are periodically retained to examine appropriate compensation based on current market data. This ensures that decisions affecting compensation are made in light of the current market climate and that qualified employees are attracted and retained within a defined total remuneration range. NERC also periodically retains compensation subject matter experts to perform periodic assessments of the BOT compensation model to ensure alignment with market practices.

Surveys
NERC periodically retains a vendor to conduct Board of Trustees and committee effectiveness surveys to identify improvement opportunities. HR will also launch additional surveys as appropriate, based on business needs, which may include periodic internal climate surveys.

Succession Planning
Minimizing disruption of knowledge, skill, and experience of key staff is critical to the company's success. HR works with senior management to identify essential roles and develop strategies to build succession and contingency plans for any loss of staff.

HR Products and Services Automation
HR will continue to operate, maintain, and investigate investment in additional electronic platforms for HR support services that reduce administrative burden and improve employee access to tools and information.

Resource Requirements

Personnel
The slight increase in FTEs is due a lower vacancy rate in 2017 compared to 2016.

Contractor Expenses
Contractor and consultant expenses are set forth in additional detail in Exhibit C. The increase over 2016 is primarily due to increased investments for additional leadership and staff training.

Miscellaneous Expenses
Miscellaneous expenses include community responsibility and employee engagement, the year-end employee appreciation event, and employee rewards and recognition.

Finance and Accounting

Background and Scope
NERC's Finance and Accounting department manages all finance and accounting functions, including employee payroll, 401(k), 457(b), and 457(f) plans, travel and expense reporting, monthly financial reporting, sales and use tax, meeting and events planning and services, insurance, internal auditing, and facilities management. This area also holds primary responsibility for the development of the annual business plan and budget, as well as NERC's proposed ERO risk management framework. Over the past several years, NERC's Finance and Accounting department implemented additional policies, procedures, and controls governing day-to-day practices including contract and personnel procurements, meetings, conference planning and travel, expense reimbursement, and back office systems and procedures. The

department will continue to refine, improve and, where necessary, implement additional procedures and controls.

Resource Requirements

Personnel
The reduction in FTEs is due to a reallocation of resources to other departments in 2016.

Contractor Expenses
$457k is budgeted for outside contractor and consulting support, representing an increase compared to the 2016 budget. These costs are primarily for outside professional support for auditors to support various risk management and internal control and audit intiatives, as well as to provide finance and accounting support.

Statement of Activities and Fixed Assets Expenditures
2016 Budget & Projection, and 2017 Budget
ADMINISTRATIVE SERVICES

	2016 Budget	2016 Projection	Variance 2016 Projection v 2016 Budget Over(Under)	2017 Budget	Variance 2017 Budget v 2016 Budget Over(Under)
Funding					
ERO Funding					
NERC Assessments	$ 561,427	$ 626,997	$ 65,570	$ 519,083	$ (42,344)
Assessment Stabilization Reserve -	-	-	-	-	-
Total NERC Funding	**$ 561,427**	**$ 626,997**	**$ 65,570**	**$ 519,083**	**$ (42,344)**
Third-Party Funding	-	-	-	-	-
Testing Fees	-	-	-	-	-
Services & Software	-	-	-	-	-
Workshops	-	-	-	-	-
Interest	-	-	-	-	-
Miscellaneous	-	-	-	-	-
Total Funding (A)	**$ 561,427**	**$ 626,997**	**$ 65,570**	**$ 519,083**	**$ (42,344)**
Expenses					
Personnel Expenses					
Salaries	$ 11,054,511	$ 11,050,223	$ (4,288)	$ 11,858,590	$ 804,078
Payroll Taxes	662,269	656,558	(5,711)	669,299	7,030
Benefits	1,369,805	1,348,538	(21,267)	1,333,443	(36,362)
Retirement Costs	1,024,669	1,101,571	76,902	1,073,642	48,973
Total Personnel Expenses	**$ 14,111,254**	**$ 14,156,890**	**$ 45,636**	**$ 14,934,974**	**$ 823,720**
Meeting Expenses					
Meetings	$ 315,000	$ 351,681	$ 36,681	$ 350,000	$ 35,000
Travel	653,945	651,240	(2,705)	653,945	-
Conference Calls	63,300	62,110	(1,190)	19,307	(43,994)
Total Meeting Expenses	**$ 1,032,245**	**$ 1,065,031**	**$ 32,786**	**$ 1,023,251**	**$ (8,994)**
Operating Expenses					
Consultants & Contracts	$ 3,036,671	$ 2,585,495	$ (451,176)	$ 3,359,787	$ 323,116
Office Rent	3,054,287	2,987,777	(66,510)	3,117,009	62,722
Office Costs	2,920,678	2,713,155	(207,523)	3,275,952	355,274
Professional Services	2,334,300	1,961,280	(373,020)	2,293,135	(41,165)
Miscellaneous	32,000	32,000	-	32,000	-
Depreciation	1,920,234	1,751,253	(168,981)	1,233,650	(686,584)
Total Operating Expenses	**$ 13,298,171**	**$ 12,030,960**	**$ (1,267,210)**	**$ 13,311,534**	**$ 13,363**
Total Direct Expenses	**$ 28,441,669**	**$ 27,252,881**	**$ (1,188,788)**	**$ 29,269,759**	**$ 828,090**
Indirect Expenses	**$ (28,551,669)**	**$ (27,323,087)**	**$ 1,228,582**	**$ (29,376,484)**	**$ (824,815)**
Other Non-Operating Expenses	**$ 110,000**	**$ 70,206**	**$ (39,794)**	**$ 106,725**	**$ (3,275)**
Total Expenses (B)	**$ -**	**$ 0**	**$ (0)**	**$ -**	**$ 0**
Change in Assets	**$ 561,427**	**$ 626,997**	**$ 65,570**	**$ 519,083**	**$ (42,344)**
Fixed Assets					
Depreciation	(1,920,234)	(1,751,253)	168,981	(1,233,650)	686,584
Computer & Software CapEx	2,347,000	2,749,562	402,562	1,472,000	(875,000)
Furniture & Fixtures CapEx	-	14,611	14,611	-	-
Equipment CapEx	1,464,000	365,000	(1,099,000)	1,800,000	336,000
Leasehold Improvements	-	566,361	566,361	-	-
Allocation of Fixed Assets	(1,890,766)	(1,944,281)	(53,515)	(2,038,350)	(147,584)
Inc(Dec) in Fixed Assets (C)	**$ -**	**$ -**	**$ (0)**	**$ -**	**$ (0)**
TOTAL BUDGET (=B + C)	**$ -**	**$ 0**	**$ (0)**	**$ -**	**$ 0**
FTEs	**71.23**	**73.62**	**2.39**	**69.33**	**(1.91)**

Section B — Supplemental Financial Information

Breakdown by Statement of Activity Sections

The following detailed schedules support the consolidated Statement of Activities. All significant variances were described by program area in the preceding pages.

Table B-1
Operating Reserve and Assessment Analysis

Operating Reserve and Assessment Analysis Statutory		Total Reserves	Future Obligations Reserve[1]	Operating Contingency Reserve	Operator Certification	CRISP	Assessment Stabilization Reserve
Beginning Operating Reserves Balance - 1/1/2016		**8,346,782**	**3,431,795**	**1,213,419**	**930,568**	**500,000**	**2,271,000**
Generation or (Use) from 2016 Operations							
From 2016 budgeted operations		862,799		1,109,651	(246,852)		
From 2016 approved use of reserves		(1,117,056)	(320,218)	(796,838)			
Proceeds from financing activities (non-current portion only)	[2]	1,256,042		1,256,042			
Debt Service	[3]	(1,055,000)		(1,055,000)			
Other adjustments to reserves	[4]	(464,868)	(464,868)	-			
Projected Operating Reserves - 12/31/16		**7,828,700**	**2,646,709**	**1,727,275**	**683,716**	**500,000**	**2,271,000**
Required Working Capital and Operating Reserves - 12/31/17	[5]	**7,759,102**	2,646,709	2,227,275	714,118	500,000	1,671,000
Adjustment in funding to achieve required reserve balance		530,402	-	500,000	30,402	-	
Penalty sanctions received 7/1/2015 - 6/30/2016 (See Table B-2)		500,000					500,000
Less: Assessment Stabilization Reserve Release - Penalties		(1,100,000)		-			(1,100,000)
Total Adjustments to Reserves		**(69,598)**	**-**	**500,000**	**30,402**	**-**	**(600,000)**
Assessment Reconciliation							
2017 Expenses and Capital Expenditures		69,602,175					
Less: Assessment Stabilization Reserve Release - Penalties		(1,100,000)					
Adjustment in funding to achieve required reserve balance		530,402					
Less: Other Funding Sources		(9,195,347)					
Less: Proceeds from financing activities (non-current only)		(966,667)					
Plus: debt service		985,750					
2017 NERC Assessment		**59,856,314**					

[1] As further explained in the discussion of the Working Capital Reserve amount in Exhibit E, the Future Obligations Reserve offsets future, non-current liabilities. The calculation of Working Capital and Operating Reserve balances per 2015 audited financials and as projected for 2016 and 2017 is included with the Statements of Financial Position on page 91.

[2] Proceeds from financing amount is equal to two-thirds of the amount financed or to be financed in the year.

[3] Debt Service amount is equal to Annual Payments for Debt Service less Interest Expense. See Exhibit D.

[4] Represents transactions recored only on the Statement of Financial Position (balance sheet) and do not impact the Statement of Activities (income statement), including recording of capitalized leases, amortization of future obligations and funding the 457f plan.

[5] On August 11, 2016, the NERC Board of Trustees approved the Working Capital and Operating Reserve Balance at 12/31/17.

Table B-2
Penalties

Penalty Sanctions

The *NERC Policy – Accounting, Financial Statement and Budgetary Treatment of Penalties Imposed and Received for Violations of Reliability Standard*, as well as Section 1107.2 of the Rules of Procedure, specify that Penalty monies received by NERC during the 12 months ended June 30 are to be used in the subsequent budget year to offset assessments. In 2015, the NERC Board approved an updated Working Capital and Operating Reserves Policy that was approved by FERC. This updated Policy allows NERC, with Board and FERC approval pursuant to Section 1107.4 of the Rules of Procedure, to place penalty funds into a new Assessment Stabilization Reserve for use in future years to offset assessments. For the 2017 budget, NERC proposes to deposit $500,000 of penalty funds received during the 12 months ended June 30, 2016 into the Assessment Stabilization Reserve, resulting in a balance of $2,771,000 on January 1, 2017. NERC further proposes that $1,100,000 of those funds be used to offset assessments for the 2017 budget with the remaining $1,671,000 held in the Assessment Stabilization Reserve for future assessment offsets.

All penalties received during the 12 month period ended June 30, 2016 are detailed below, including the amount and date received.

Allocation Method

Penalty sanctions used to offset 2017 assessments have been allocated to the following statutory programs to reduce assessments: Reliability Standards, Compliance Assurance, Compliance Analysis and Certification, Compliance Enforcement, Reliability Assessments and System Analysis, Performance Analysis, Training and Education, Situation Awareness, Event Analysis, and E-ISAC. Penalty sanctions are allocated based on the number of FTEs in the program divided by the aggregate total FTEs in the programs receiving the allocation. In addition to the information noted below, an additional $500,000 is expected in May 2017 related to an agreed-upon penalty settlement with WECC resulting from the September 2011 blackout.

Penalty Sanctions	Date Received	Amount Received
Penalties received between 7/1/2015 and 6/30/2016		
	May-16	$ 500,000
		$ 500,000
Penalties received prior to 6/30/2015, held in the assessment stabilization reserve		$ 2,271,000
Total penalties available on 1/1/2017 to offset assessments		$ 2,771,000
Adjustments		
Total penalties released to offset assessments in the 2017 Budget		(1,100,000)
Total penalties held in Assessment Stabilization Reserve 12/31/2017		$ 1,671,000

Table B-3
Outside Funding

Outside Funding Breakdown By Program (Excludes Penalty Sanction)	Budget 2016	Projection 2016	Budget 2017	Variance 2017 Budget v 2016 Budget
Reliability Standards				
Workshops	$ 105,000	$ 105,000	$ 105,000	$ -
Interest Income Allocation	445	5,374	427	(18)
Total	$ 105,445	$ 110,374	$ 105,427	$ (18)
Compliance Analysis, Registration and Certification				
Interest Income Allocation	$ 251	$ 2,860	$ 187	$ (64)
Total	$ 251	$ 2,860	$ 187	$ (64)
Compliance Assurance				
Workshops	$ -	$ -	$ -	$ -
Interest Income Allocation	479	$ 4,710	386	(93)
Total	$ 479	$ 4,710	$ 386	$ (93)
Compliance Enforcement				
Interest Income Allocation	$ 302	$ 3,682	$ 327	$ 25
Total	$ 302	$ 3,682	$ 327	$ 25
Reliability Assessments and System Analysis				
pc_GAR Software	$ 50,000	$ -	$ 50,000	$ -
Workshops	15,000	15,000	15,000	-
Interest Income Allocation	462	3,634	351	(111)
Total	$ 65,462	$ 18,634	$ 65,351	$ (111)
Performance Analysis				
Interest Income Allocation	$ -	$ 2,554	$ 234	$ 234
Total	$ -	$ 2,554	$ 234	$ 234
Training and Education				
Testing Fees and Certificate Renewals	$ 1,267,972	$ 1,267,972	$ 1,321,900	$ 53,928
CEH Fees	600,000	600,000	600,000	-
Interest Income Allocation	183	2,096	175	(7)
Total	$ 1,868,155	$ 1,870,068	$ 1,922,075	$ 53,921
Event Analysis				
Workshops	$ 40,000	$ 78,073	$ 40,000	$ -
Interest Income Allocation	274	2,918	281	7
Total	$ 40,274	$ 80,991	$ 40,281	$ 7
Situation Awareness				
Workshops	$ -	$ 1,128	$ -	$ -
Interest Income Allocation	137	1,816	140	3
Total	$ 137	$ 2,944	$ 140	$ 3
E-ISAC				
Third Party Funding (CRISP)	$ 6,830,738	$ 7,335,757	$ 6,990,447	$ 159,709
Workshops	70,000	70,000	70,000	-
Interest Income Allocation	468	6,254	491	24
Total	$ 6,901,206	$ 7,412,011	$ 7,060,938	$ 159,732

- Testing Fees and Certificate Renewals – The 2017 budget reflects prior year actual results and the anticipated number of tests to be taken in 2017.
- E-ISAC – The increase in third-party funding is due to the increase in NERC costs, which are funded equally by participants in CRISP and through assessments.

Table B-4
Personnel

Personnel Expenses	Budget 2016	Projection 2016	Budget 2017	Variance 2017 Budget v 2016 Budget	Variance %
Total Salaries	$ 28,842,336	$ 29,052,918	$ 30,073,438	$ 1,231,102	4.3%
Total Payroll Taxes	1,871,367	1,830,724	1,847,130	(24,237)	-1.3%
Total Benefits	3,579,280	3,390,190	3,643,806	64,526	1.8%
Total Retirement	2,990,823	3,015,135	3,076,956	86,134	2.9%
Total Personnel Costs	$ 37,283,807	$ 37,288,967	$ 38,641,331	$ 1,357,525	3.6%
FTEs	192.47	145.02	189.88	(2.59)	-1.3%
Cost per FTE					
Salaries	$ 149,852	$ 200,337	$ 158,381	8,529	5.7%
Payroll Taxes	9,723	12,624	9,728	5	0.1%
Benefits	18,596	23,377	19,190	594	3.2%
Retirement	15,539	20,791	16,205	666	4.3%
Total Cost per FTE	**$ 193,710**	**$ 257,130**	**$ 203,504**	**$ 9,794**	**5.1%**

- Salaries - Total Salaries expense is comprised of base salaries, incentive compensation, deferred compensation, employment agency fees and temporary office expenses. The 2017 budget for base salaries assumes a 3% increase over actual 2016 base salaries and is inclusive of market adjustments and promotions. Due to the addition of more senior staff in 2016, and the need to pay higher market-based compensation than previously budgeted to attract and retain employees, the actual average salary is higher than the 2016 budget, which causes the comparison of 2017 budget to 2016 budget to be higher than 3%. The 2017 budget for incentive compensation is based on historical actuals and is slightly higher as a percent of base salaries, 20.9% in 2017 compared to 19.5% in 2016. The 2017 budgets for deferred compensation, employment agency fees and temporary office expenses are generally consistent with 2016.
- Payroll taxes are decreasing based upon the 2016 projection and the reduction in total FTEs. While total Salaries expense is increasing, the maximum salary subject to FICA taxes limits the change in employer costs.
- Benefits are budgeted to increase based on the most recent market data as provided by NERC's insurance broker.
- There have been no changes to NERC's retirement plans. Retirement expenses are increasing at a higher rate consistent with the 3% increase in base salaries.

Table B-5
Meetings

Meetings	Budget 2016	Projection 2016	Budget 2017	Variance 2017 Budget v 2016 Budget	Variance %
Meetings	$ 1,096,500	$ 1,194,500	$ 1,071,500	$ (25,000)	-2.28%
Travel	$ 2,203,786	$ 2,190,184	$ 2,203,786	(0)	0.62%
Conference Calls	$ 320,000	$ 261,880	$ 97,600	(222,400)	-62.73%
Total Meetings	**$ 3,620,286**	**$ 3,646,564**	**$ 3,372,886**	**$ (247,400)**	**-6.83%**

- The 2017 budget for Meetings expense in the Operator Certification Program is $25.0k lower than the 2016 budget based upon prior year actual results.
- The 2017 budget for Conference Calls is $222.4k, 69.5%, lower than 2016 based upon the planned execution of a contract with a new provider scheduled to occur in 2016. This reduction in Conference Calls expenses will offset an increase in maintenance costs associated with a new audio visual lease related to new equipment and associated service and maintenance agreements.

Table B-6
Consultants and Contracts

NOTE: This table has been replaced by Exhibit C, and is further discussed in the Executive Summary on page 13

Table B-7
Rent

Office Rent	Budget 2016	Projection 2016	Budget 2017	Variance 2017 Budget v 2016 Budget	Variance %
Office Rent	$ 2,954,287	$ 2,954,287	$ 2,838,144	$ (116,143)	-3.93%
Utilities	-		-	-	
Maintenance	100,000	270,000	278,866	178,866	178.87%
Total Office Rent	**$ 3,054,287**	**$ 3,224,287**	**$ 3,117,009**	**$ 62,722**	**2.05%**

- The decrease in Office Rent is due to the termination of the lease at NERC's former Washington, DC office.
- Maintenance costs at NERC offices increase year over year per the terms of the lease agreements. The 2016 projected expenses are significantly higher than the 2016 budget due to escalations that were not included in the budget and due to higher costs not covered by the lease agreements.

Table B-8
Office Costs

Office Costs	Budget 2016	Projection 2016	Budget 2017	Variance 2017 Budget v 2016 Budget	Variance %
Telephone	$ 548,596	$ 410,053	$ 539,737	$ (8,859)	-1.61%
Telephone Answering Srv	3,000	3,355	2,500	(500)	-16.67%
Internet	375,900	369,021	383,366	7,466	1.99%
Office Supplies	173,800	177,392	194,000	20,200	11.62%
Computer Supplies and Maintenance	-	-	-	-	
Computers	25,000	26,000	25,000	-	0.00%
Computer Supplies	98,400	85,607	101,400	3,000	3.05%
Maintenance & Service Agreements	1,875,126	1,858,992	2,426,139	551,013	29.39%
Software	117,500	226,643	122,500	5,000	4.26%
Network Supplies	-	-	-	-	
Publications & Subscriptions	167,650	190,852	180,460	12,810	7.64%
Dues	48,050	63,165	49,316	1,266	2.64%
Postage	16,350	15,786	16,221	(129)	-0.79%
Express Shipping	28,200	17,405	28,216	16	0.06%
Copying	105,000	104,993	110,123	5,123	4.88%
Reports	2,000	1,362	362	(1,638)	-81.90%
Stationary/Forms	2,500	1,090	2,500	-	0.00%
Equipment Repair/Service Contracts	75,000	75,000	75,000	-	0.00%
Bank Charges	42,500	26,494	25,000	(17,500)	-41.18%
Sales & Use Taxes	5,000	500	-	(5,000)	-100.00%
Merchant Card Fees	86,000	86,575	77,500	(8,500)	-9.88%
Total Office Costs	**$ 3,583,328**	**$ 3,740,288**	**$ 4,359,340**	**$ 563,768**	**21.66%**

- The increase in Office Supplies is primarily related to increased needs at NERC's Washington, D.C. office.
- The increase in Maintenance and Service agreement costs is primarily due to:
  - New software audit tool in Compliance Assurance, $100k
  - New software analytic tools used in RASA, $37k
  - Increase in maintenance costs for new data center hardware installed in 2015 and 2016, and new network storage devices, $200k
  - Increase in maintenance costs for new audio visual equipment planned for 2016, $164k

Table B-9
Professional Services

Professional Services	Budget 2016	Projection 2016	Budget 2017	Variance 2017 Budget v 2016 Budget	Variance %
Independent Trustee Fees	$ 1,126,354	$ 1,126,354	$ 1,226,000	$ 99,646	8.85%
Trustee Search Fee	100,000	100,000	100,000	-	0.00%
Outside Legal	690,000	590,000	515,000	(175,000)	-25.36%
Lobbying	50,000	50,000	60,000	10,000	20.00%
Accounting & Auditing Fees	154,500	154,500	159,135	4,635	3.00%
Insurance Commercial	225,000	225,000	230,000	5,000	2.22%
Outside Services	163,446	168,446	178,000	14,554	8.90%
Total Services	**$ 2,509,300**	**$ 2,414,300**	**$ 2,468,135**	**$ (41,165)**	**-1.64%**

- The increase in Independent Trustee Fees was approved by the Board of Trustees on August 13, 2015. The increase in fees is being implemented over a 3-year period from 2016 through 2018. Independent Trustee Fees are included in the Professional Services budget in the General and Administrative department.
- The reduction in outside legal fees, budgeted in the Legal and Regulatory department, is based on bringing more work in-house and a reduction in projected outside legal needs due to the completion of certain contract negotiations.
- The increase in Lobbying expense, budgeted in the Legal and Regulatory department, is based upon prior year actual expenses. This expense is primarily related to NERC's monitoring of regulatory and legislative issues and responding to information requests related to these activities.
- The increase in outside service costs is primarily due to various employee benefit management systems budgeted in the Human Resources department.

Table B-10
Miscellaneous

Miscellaneous Expenses	Budget 2016	Projection 2016	Budget 2017	Variance 2017 Budget v 2016 Budget	Variance %
Miscellaneous Expense	$ 6,500	$ 6,500	$ 6,500	$ -	0.0%
Employee Rewards and Recognition	10,000	$ 10,000	10,000	-	0.0%
Community Resp & Employee Engagement	10,000	10,000	5,000	(5,000)	-50.0%
Year-end Employee Recognition Event	10,000	10,000	15,500	5,500	55.0%
Total Miscellaneous Expenses	**$ 36,500**	**$ 36,500**	**$ 37,000**	**$ 500**	**1.4%**

The total 2017 Miscellaneous Expenses budget shows a small increase of $500 over the 2016 budget.

This budget is intended to cover the cost of:

- Token gifts to retiring employees, condolence flowers in the event of a death in the family of an employee, and similar types of miscellaneous expenses ($6.5k);
- Funds to support Community Responsibility and Employee Engagement Committee activities ($5.0k);
- Departmental and company team-building activities and employee rewards and recognition expenses that are not otherwise included in personnel expenses ($10.0k); and
- Year-end employee recognition meal expenses ($15.50k). $5.0k was reallocated from Community Responsibility and Employee Engagement expenses to the Year-End Employee Recognition Event to better align the budget with prior year actual results.

The budget for item (1) is spread throughout all Programs and Administrative departments. The budget for items (2) and (4) are included in the Human Resources department. The budget for item (3) was split equally between General and Administrative and Human Resources in the 2016 Budget, but is budgeted in Human Resources only in 2017.

Table B-11
Other Non-Operating Expenses

Other Non-Operating Expenses	Budget 2016	Projection 2016	Budget 2017	Variance 2017 Budget v 2016 Budget	Variance %
Property Tax Expense	$ 50,000	50,000	$ 50,000	-	
Interest Expense	60,000	60,000	56,725	(3,275)	-5.46%
Total Other Non-Operating Expenses	**$ 110,000**	**$ 110,000**	**$ 106,725**	**$ (3,275)**	**-2.98%**

Budgeted interest expense is calculated based on expected draws on the capital financing loan. Refer to Exhibit D, page 126 for more detailed information related to debt repayment and the interest expense calculation.

Table B-12
Fixed Assets

Fixed Assets	Budget 2016	Projection 2016	Budget 2017	Variance 2017 Budget v 2016 Budget	Variance %
Depreciation	$ (2,641,943)	$ (2,558,606)	$ (1,691,457)	$ 950,486	-35.98%
Computer & Software CapEx	2,447,000	2,362,402	2,572,000	125,000	5.11%
Furniture & Fixtures CapEx	-	-	-	-	
Equipment CapEx	1,464,000	1,545,797	1,800,000	336,000	22.95%
Leasehold Improvements	-	-	-	-	
	$ 1,269,057	**$ 1,349,593**	**$ 2,680,543**	**$ 1,411,486**	**111.22%**

As further explained in the Executive Summary on page 15 and in Section A in the Information Technology section on page 78 and the E-ISAC section on page 61, expenditures for fixed assets, excluding the reversal of Depreciation expense, are budgeted to be $461.0k higher in 2017 compared to 2016. The increase in Computer & Software CapEx is primarily due to the combination of lower costs resulting from a delay in the potential replacement for the current compliance monitoring and enforcement tracking tool, originally planned for 2017, and the increase in costs related to the portal enhancement project. This delay in the compliance monitoring and enforcement tracking tool resulted in a $800k decrease in ERO applications development from $1.5M in 2016 to $700k in 2017. The increase in Equipment CapEx is primarily for security devices.

Table B-13
2018-2019 Projections
NOTE: Refer to the Executive Summary beginning on page 20

Section C — Non-Statutory Activity

NERC has no non-statutory activities.

Section D — Supplemental Financial Statements

NORTH AMERICAN ELECTRIC RELIABILITY COPORATION

STATEMENT OF FINANCIAL POSITION

	12/31/2015 Per Audit	12/31/2016 - Projection	12/31/2017 - Projection
ASSETS			
Cash	40,308,955	39,464,020	39,091,525
Trade Accounts receivable, net of allowance for uncollectible accounts of $0 and $62,573 in 2013 and 2012	3,986,346	3,986,346	3,986,346
Prepaid expenses and other current assets	1,291,805	1,291,805	1,291,805
Security deposit	125,416	125,416	125,416
Plan Assets - 457b	744,439	744,439	744,439
Plan Assets - 457f	271,200	271,200	271,200
Property and equipment	8,301,730	9,411,545	12,669,171
Total Assets	**55,029,891**	**55,294,771**	**58,179,902**
LIABILITIES AND NET ASSETS			
Liabilities			
Current Portion			
Accounts payable and accrued expenses (incl, vacation accrual)	5,326,723	5,326,723	5,326,723
Accrued Incentive Comp	4,721,278	4,956,779	4,872,492
Deferred rent-current	322,016	400,434	480,457
Deferred compensation-current	-	-	-
Capital lease obligations - current	64,728	64,728	64,728
Accrued retirement liabilities	1,878,830	1,695,570	1,761,502
Debt Service - Current Portion	744,253	857,725	650,231
Deferred income	7,961,316	7,961,316	7,961,316
Deferred revenue - penalties	-	-	-
Deferred revenue - CRISP	2,508,514	2,508,514	2,508,514
Regional assessments	12,273,666	12,273,666	12,273,666
Total Current Portion	**35,801,324**	**36,045,455**	**35,899,629**
Long-Term Portion			
Deferred compensation[1]	1,038,350	1,038,350	1,038,350
Capital Project Financing - non-current	680,311	1,011,839	1,033,333
Deferred rent - non-current	3,412,298	3,011,864	2,531,407
CRISP Insurance Reserve	500,000	500,000	500,000
Deferred Revenue - Assessment Stabilization Reserve	-	2,271,000	2,271,000
Capital lease obligations - non-current	151,752	151,752	151,752
Total Non-Current Portion	**5,782,711**	**7,984,805**	**7,525,842**
Total Liabilities	**41,584,035**	**44,030,260**	**43,425,472**
Net Assets - unrestricted	9,735,856	10,764,511	14,254,430
Net Assets - restricted	3,710,000	500,000	500,000
Total Liabilities and Net Assets	**55,029,891**	**55,294,771**	**58,179,902**

[1]Includes 457b liability, life insurance for former executive, and retiree medical

NORTH AMERICAN ELECTRIC RELIABILITY COPRORATION

Statement of Activities, Fixed Asset Expenditures and Change in Working Capital by Program 2016 Budget	Statutory Total	Reliability Standards	Compliance Analysis, Registration & Certification	Compliance Assurance	Compliance Enforcement	Reliability Assessment and System Analysis	Performance Analysis	Operator Certification	Training and Continuing Education	Event Analysis	Situation Awareness	E-ISAC	General and Administrative (Includes Executive and Gov't Relations)	Legal and Regulatory	Information Technology	Human Resources	Accounting and Finance
	Statutory Activities																
Funding																	
ERO Funding																	
NERC Assessments	59,856,314	7,835,213	3,576,122	7,713,879	5,677,854	7,339,030	4,821,146		1,822,089	5,300,955	3,980,236	11,270,705	519,083	-	-	-	-
Assessment Stabilization Reserve - Penalties	1,100,000	159,642	69,980	144,334	122,465	131,213	87,475		43,738	104,970	52,485	183,698			-		
Total NERC Funding	**60,956,314**	**7,994,855**	**3,646,102**	**7,858,213**	**5,800,319**	**7,470,243**	**4,908,621**		**1,865,827**	**5,405,926**	**4,032,721**	**11,454,403**	**519,083**	**-**	**-**	**-**	**-**
Third-Party Funding (CRISP)	6,990,447											6,990,447					
Testing Fees	1,921,900							1,321,900	600,000								
Services & Software	50,000					50,000											
Workshops	230,000	105,000				15,000				40,000		70,000					
Interest	3,000	427	187	386	327	351	234	58	117	281	140	491					
Miscellaneous	-																
Total Funding (A)	**70,151,660**	**8,100,282**	**3,646,289**	**7,858,599**	**5,800,647**	**7,535,594**	**4,908,855**	**1,321,958**	**2,465,944**	**5,446,206**	**4,032,862**	**18,515,341**	**519,083**	**-**	**-**	**-**	**-**
Expenses																	
Personnel Expenses																	
Salaries	30,073,438	2,340,405	1,125,154	2,509,618	1,790,859	2,247,826	1,349,579	245,337	606,753	1,708,049	873,869	3,417,398	3,476,241	2,148,056	3,261,320	770,439	2,202,533
Payroll Taxes	1,847,130	151,658	76,383	163,335	117,205	142,919	92,093	18,342	44,385	108,739	58,749	204,023	173,245	119,055	216,747	28,144	132,107
Benefits	3,643,806	307,085	174,014	333,557	184,106	263,230	143,104	84,920	54,319	212,232	156,328	397,467	396,300	151,930	389,091	72,977	323,144
Retirement Costs	3,076,956	259,407	126,651	276,273	198,694	246,609	149,018	30,026	67,599	189,397	96,159	363,482	197,650	232,244	359,376	46,242	238,131
Total Personnel Expenses	38,641,331	3,058,556	1,502,203	3,282,783	2,290,865	2,900,585	1,733,794	378,625	773,056	2,218,416	1,185,105	4,382,370	4,243,437	2,651,285	4,226,534	917,802	2,895,916
Meeting Expenses																	
Meetings	1,071,500	207,000	4,000	60,000	2,500	74,000	1,000	30,000	25,000	81,500	6,500	230,000	334,000	4,000	7,500	2,000	2,500
Travel	2,203,786	271,988	155,146	276,343	56,736	208,338	118,172	7,389	13,751	152,487	33,005	256,488	444,515	93,231	56,508	8,728	50,963
Conference Calls	97,600	40,565	610	6,100	366	5,270	2,965	153	10,980	4,270	305	6,710	5,856	1,952	9,608	305	1,586
Total Meeting Expenses	3,372,886	519,553	159,756	342,443	59,602	287,608	122,137	37,541	49,731	238,257	39,810	493,198	784,371	99,183	73,616	11,033	55,049
Operating Expenses																	
Consultants & Contracts	13,127,749			50,000		525,000	528,082	219,800	360,800		1,295,850	6,788,429	15,000		2,312,787	575,000	457,000
Office Rent	3,117,009												3,117,009				
Office Costs	4,359,340	51,336	24,231	141,198	20,379	147,652	74,843	43,216	57,107	49,634	41,897	431,895	507,934	46,411	2,595,408	11,748	114,450
Professional Services	2,468,135											175,000	1,431,000	495,000		63,000	304,135
Miscellaneous	37,000	500	500	500	500	500	500		500	500	500	500	500	500	500	30,000	500
Depreciation	1,691,457	231,721				125,621			1,919	85,582	7,667	5,297	438,305		795,345		
Total Operating Expenses	24,800,690	283,556	24,731	191,698	20,879	798,773	603,426	263,016	420,326	135,715	1,345,914	7,401,121	5,509,749	541,911	5,704,041	679,748	876,085
Total Direct Expenses	**66,814,907**	**3,861,666**	**1,686,689**	**3,816,924**	**2,371,347**	**3,986,965**	**2,459,356**	**679,182**	**1,243,113**	**2,592,388**	**2,570,828**	**12,276,689**	**10,537,557**	**3,292,379**	**10,004,191**	**1,608,583**	**3,827,050**
Indirect Expenses	0	4,180,279	1,832,451	3,779,431	3,206,790	3,435,846	2,290,564	572,641	1,145,282	2,748,677	1,374,338	4,810,185	(10,644,282)	(3,292,379)	(10,004,191)	(1,608,583)	(3,827,050)
Other Non-Operating Expenses	**106,725**	-	-	-	-	-	-	-	-	-	-	-	106,725				
Total Expenses (B)	**66,921,632**	**8,041,945**	**3,519,141**	**7,596,355**	**5,578,137**	**7,422,812**	**4,749,920**	**1,251,823**	**2,388,395**	**5,341,065**	**3,945,167**	**17,086,873**	-	**-**	**-**	**-**	**-**
Change in Assets	**3,230,028**	**58,337**	**127,149**	**262,244**	**222,510**	**112,782**	**158,936**	**70,136**	**77,549**	**105,141**	**87,695**	**1,428,467**	**519,083**	**-**	**-**	**-**	**-**
Fixed Assets																	
Depreciation	(1,691,457)	(231,721)	-	-	-	(125,621)	-	-	(1,919)	(85,582)	(7,667)	(5,297)	(438,305)	-	(795,345)	-	-
Computer & Software CapEx	2,572,000											1,100,000			1,472,000		
Furniture & Fixtures CapEx	-																
Equipment CapEx	1,800,000														1,800,000		
Leasehold Improvements	-																
Allocation of Fixed Assets	0	290,058	127,149	262,244	222,510	238,403	158,936	39,734	79,468	190,723	95,361	333,765	438,305	-	(2,476,655)	-	-
Inc(Dec) in Fixed Assets (C)	**2,680,543**	**58,337**	**127,149**	**262,244**	**222,510**	**112,782**	**158,936**	**39,734**	**77,549**	**105,141**	**87,695**	**1,428,467**	-	**-**	**-**	**-**	**-**
TOTAL BUDGET (=B + C)	**69,602,175**	**8,100,282**	**3,646,289**	**7,858,599**	**5,800,647**	**7,535,594**	**4,908,855**	**1,291,557**	**2,465,944**	**5,446,206**	**4,032,862**	**18,515,341**	-	**-**	**-**	**-**	**-**
TOTAL CHANGE IN WORKING CAPITAL (=A-B-C)	**549,485**	**(0)**	-	-	-	**(0)**	**0**	**30,402**	-	-	**(0)**	**0**	**519,083**	-	-	-	-
FTEs	**189.88**	**17.16**	**7.52**	**15.51**	**13.16**	**14.10**	**9.40**	**2.35**	**4.70**	**11.28**	**5.64**	**19.74**	**16.92**	**11.28**	**23.27**	**2.82**	**15.04**

Exhibit A – Common Assumptions

Shared Business Plan and Budget Assumptions NERC and the Regional Entities 2016–2019 Planning Period (2017 Budget Cycle)

NERC and the eight Regional Entities are committed to a common operating model[38] that describes the characteristics of a highly effective and efficient electric reliability organization (ERO) Enterprise. This operating model includes action items to address coordinated strategic and business planning as well as performance monitoring processes across the enterprise. These processes remain transparent, with results reported out on a quarterly basis to NERC's Corporate Governance and Human Resources Committee and NERC Board of Trustees (Board) in support of the ERO corporate oversight function.

Recently, at its November 2015 meeting, the Board approved an updated version of the ERO Enterprise Strategic Plan with goals, objectives, and deliverables for the 2016–2019 planning period. The strategic plan lays out five goals that the ERO Enterprise will focus on over the next three years. They include (1) standards; (2) compliance, enforcement, registration, and certification; (3) risks to reliability; (4) emerging risks; and (5) coordination and collaboration. The plan also identifies a number of associated objectives and deliverables to achieve the goals of the ERO Enterprise. There are also four overarching performance metrics to assess the overall effectiveness of the ERO Enterprise in addressing risk to the Bulk Electric System (BES) and improving BES reliability in 2016. These metrics concentrate on (1) measuring progress in achieving reliability results, (2) assuring standards and compliance effectiveness, (3) improving risk mitigation, and (4) program execution.

The following set of common assumptions has been developed to guide ERO Enterprise resource projections[39] for the 2016–2019 period. Specifically, it supports the strategies heading into the 2016 year and establishes common assumptions, goals and objectives as the ERO Enterprise begins the 2017 Business Plan and Budget (BP&B) cycle. Additionally, it outlines how these goals and objectives set the stage for periods beyond 2017, all in support of achievement of the goals and objectives set forth in the Strategic Plan.

Similar to prior planning cycles, the specific resource needs and budgets of NERC and the Regional Entities will be publicly posted and made available on NERC's website for review. Each Regional Entity board approves its BP&Bs after an extensive review process that includes consideration of stakeholder input. Also, the BP&Bs of NERC and each Regional Entity are approved in open session by NERC's Finance and Audit Committee and Board of Trustees as part of the annual BP&B process. NERC's review of the Regional Entity BP&Bs will be primarily focused on ensuring alignment of activities with the Strategic Plan and adequacy of resources to support performance of delegated functions and key efforts. A 2017 BP&B schedule has been developed to identify important meeting dates, review periods, posting dates, etc. associated with the development and completion of the NERC and Regional Entity BP&Bs.

These assumptions will continue to be refined based on comments received from stakeholders and the ongoing work conducted by NERC and Regional Entity leadership regarding specific goals, objectives, and supporting activities over the planning period.

[38] ERO Enterprise Operating Model

[39] NERC recognizes there are often unique factors that drive differences in each entity or organization's final determination of its resource needs and budget. Regional Entity-specific assumptions are stated in each Regional Entity's BP&B as appropriate.

Legal and Operating Framework

NERC and the Regional Entities will continue to work under the existing regulatory framework governing the establishment and enforcement of reliability standards for the BES established by applicable governmental authorities in the United States, provincial regulatory and/or governmental authorities in Canada, and portions of Mexico, as well as the authorizations contained in the Federal Energy Regulatory Commission's (FERC) Order approving NERC as the ERO.

NERC continues to enhance its oversight of the Regional Entities' performance of their delegated functions. NERC in collaboration with the Regional Entities will continue to develop goals, measures, and reports to assess and evaluate the Regional Entities' performance of their Regional Delegation Agreements (RDAs), NERC's Rules of Procedure, the Compliance Monitoring and Enforcement Program, FERC requirements, and directives that are in effect pursuant to Section 8(c) of the RDAs. NERC will continue to provide feedback and direction to the Regional Entities on performance improvements. NERC and the Regional Entities will also continue to work collaboratively to refine and revise processes and procedures to eliminate duplication, increase operational efficiencies, enhance ERO-wide consistency, and achieve measureable reliability outcomes. Regional Entities will continue to have the primary responsibility for day-to-day operations and interactions with registered entities.

Stakeholder Participation

NERC and the Regional Entities develop their BP&B's based upon the assumption of continued stakeholder participation in support of key program areas, while recognizing that stakeholder resource limitations may affect specific levels of participation in any given activity. The availability and adequacy of industry resource support will be evaluated on an ongoing basis.

External Factors

The performance and execution of BP&B's for each entity in the ERO Enterprise may be impacted by various external factors. These factors include, but are not limited to, the following:

- FERC Orders, other applicable governmental authority actions, directives, audits, mitigation efforts, and performance assessments;
- Environmental Protection Agency (EPA) rules that could potentially impact the reliability and/or operation of the BES;
- Other governmental agencies or departments that may issue rules, guidelines, orders, or directives that may impact the operation of the BES;
- The number and significance of changes within Balancing Authorities' and Reliability Coordinators' areas, prompting the need for associated re-certification and reliability plan assessments;
- The unanticipated rise in the rate and severity of entity violations;
- The unanticipated rise in the rate and severity of system events requiring formal investigations beyond historic volumes, and causal drivers of these events;
- New technologies and changes in resource or demand composition that require additional reliability studies and reliability risk analysis, including new techniques for conducting relevant assessments;
- Changes in applicable laws and regulations, including environmental laws and others;
- Priority risk activities identified by the Reliability Issues Steering Committee, committees of the Board, and through other stakeholder input;

- The ability of stakeholders to support the pace and scope of the various activities while implementing the results of earlier efforts.

Collaboration with the Trade Associations and Forums

The activities of the North American Transmission Forum (NATF), North American Generator Forum (NAGF), and other trade forums and associations are expected to complement ERO Enterprise activities and mitigate incremental resource needs of NERC and Regional Entities in certain areas. NERC has a memorandum of understanding with the NATF and NAGF to help ensure that the common objectives of each organization are achieved in the most efficient and effective manner. Increased collaboration between the NERC and the NATF and NAGF is expected to continue.

Key Assumptions by Program Area[40]

Reliability Standards Program

- It is expected the number of continent-wide standards development projects will remain relatively stable, except as required to address any new FERC directives to create or modify reliability standards, or industry submittals of standard authorization requests.
- Continent-wide standards projects will consist primarily of conducting enhanced periodic reviews on existing standards to improve their content and quality, respond to identified risks to reliability (including those that may be identified through the implementation of risk-based Compliance Monitoring and Enforcement), and address FERC directives that may arise. This activity will require the allocation of technical resources from several internal NERC departments (e.g., Reliability Assessment and Performance Analysis (RAPA), Reliability Risk Management (RRM), Compliance Analysis and Certification, and Compliance Assurance) and support from across the ERO Enterprise.
- During the enhanced periodic review of ERO standards, any associated regional standards will be reviewed for potential incorporation as variances or as improvements to the continent-wide requirements. Regional and NERC standards development processes may require modification to accomplish efficiently this task. Each Regional Entity will work with NERC and possibly other Regional Entities on projects where there is a regional standard/variance. Regional standards development activity will be driven by requests the Regional Entity may receive or reliability issues the Regional Entity may identify. Regional standards development activity is expected to remain low.
- In coordination with Standard Drafting Teams and consistent with current approaches, Regional Entities may support outreach during standard development, and participate in the standard development activities as may be required to address reliability and stakeholder issues that may arise within their respective regions. Additionally, following FERC approval, NERC and the Regional Entities collectively will assist the transition of standards to compliance monitoring and enforcement by providing knowledge that supports industry and auditor training, or providing information regarding the intent of the standard.
- The number of interpretations are expected to remain low. However, guidance requests associated with the implementation of Standards may increase.

[40] These statements, which are generally organized by program area, are intended to help guide resource allocation decision-making in the development of the 2017 BP&Bs.

Compliance Monitoring and Enforcement, and Organization Registration and Certification Programs

Compliance and Enforcement

- The implementation of the risk-based compliance monitoring and enforcement program (CMEP) will continue to require the allocation of dedicated resources from both NERC and the Regional Entities for both compliance and enforcement. Regional Entities created a plan in 2016 to complete Inherent Risk Assessments (IRAs) for all their Reliability Coordinators, Balancing Authorities, and Transmission Operators and will require resources to complete the remaining IRAs in 2017. In addition, Regional Entities will require resources to update previously done IRAs based on identified triggers, and focus on creating compliance oversight plans that include compliance monitoring tools, the frequency of compliance monitoring, and the standards that are to be monitored as well as the depth of testing of those standards.
- NERC and the Regional Entities will continue the 2015-2016 ERO Enterprise exercises to evaluate business practices, implementation, and consistency within risk-based compliance monitoring.
- NERC and the Regional Entities will participate in ERO Enterprise consistency activities, including providing input into standards development.
- NERC and the Regional Entities are planning to support the training and education requirements and guidelines necessary to meet the criteria set forth by the *ERO Enterprise Compliance Monitoring and Enforcement Manual* and the *Competency Guide*.
- The suitability of software systems currently used for compliance, registration, analysis and tracking will continue to be evaluated from a strategic perspective, which may result in changing or replacing existing systems in the future. However, until such changes have been identified, reviewed and approved by the ERO Enterprise Technology Leadership Team and EROEMG for implementation, NERC and the Regional Entities should continue to maintain the necessary resources to support existing systems.
- Planning and operating standard violations are expected to level off or continue decreasing as most registered entities have been audited and thus have a greater understanding of compliance expectations, and the standards have matured.
- Compliance personnel will need to continue to support the implementation of cyber-security reliability standards version 5 (CIP V5):
    - NERC will lead the CIP V5 training development, coordination, and facilitation for the ERO Enterprise CIP auditors and industry outreach. ERO Enterprise CIP auditors will support these activities in collaboration with NERC to ensure appropriate knowledge and guidance is developed, understood by industry, and administered.
    - The allocation of resources in 2017 and 2018 should be responsive to continued implementation by registered entities of new versions of the CIP Standards, while recognizing that the risk-informed focus will be on monitoring “high” and “medium” impact requirements.
- Additional resource allocation may be necessary for increased Physical Security compliance monitoring activities for CIP-014.
- ERO Enterprise CMEP staff, particularly staff with visibility into risks occurring in the field, will provide feedback to the ERO Enterprise. This feedback may include information on risks seen in the field that are not addressed by a standard as well as information on where a standard is too broad. ERO Enterprise CMEP staff will participate in the development of a solution, regardless of whether the solution is a standard or other solution.

- ERO Enterprise CMEP staff will provide input for standards development teams on the risks seen in the field relating to a standard under development, as well as how a standard would be monitored.

Organization Registration and Certification

- Two central reforms have been identified as a result of the completion of the risk-based registration activity in 2015:

  1. Modifications to the NERC Registry Criteria have been approved, including the elimination of three functional entities (Purchasing-Selling Entities, Interchange Authorities, and Load-Serving Entities), modifications to the threshold criteria for Distribution Providers, and alignment of five registration categories with the BES definition.

  2. The NERC-led panel, which establishes subset lists of applicable reliability standards for registered entity functions (e.g., Under-Frequency Load Shedding-only Distribution Providers), has been incorporated into the rules.

These reforms strengthen the registration process and are important milestones in NERC's approach to managing risks to reliability. Deployment and implementation of these revisions began in 2015, with continued work in 2016 and possibly 2017.

- No further enhancements are anticipated to support the ongoing next phases of the risk-based registration activity.
- Based on the 2015 technical assessment of the Phase 2 registered functions (Transmission Operator, Transmission Owner, Generator Owner, and Generator Operator), development of subsets of standards are not necessary.
- The certification and registration programs will be assessed in 2016, which may result in modifications to the program in 2017.
- The activities associated with the implementation of the BES definition have decreased, therefore no additional resource demands are expected in the registration area.
- Planned oversight activities for 2017 will be aligned with the ERO Enterprise Operating Model and should not affect 2017 resource allocation and should have little effect on overall NERC resource requirements. NERC understands that each Regional Entity will need to evaluate its individual resource needs and allocations.

Reliability Assessment and Performance Analysis Program (RAPA)

- Support and leadership to (1) the Planning Committee and (2) standing committees' subcommittees, working groups, and task forces serving the standing committees will continue.
- NERC and the Regional Entities will continue to focus resources on high quality reliability assessments and performance analysis, including:
  - Development and implementation of expanded and enhanced enterprise-based data collection and analysis systems, and capabilities for performance analyses. This includes TADS, GADS, NERC RAS data, and misoperations data;
  - Support of the integration of RAPA information systems for assessments and associated data requirements, with focus on objective and technically sound reliability assessments supporting delivery of high quality reports (e.g., long-term, short-term, special or scenario assessments, and State of Reliability Report);

- Development of assessment and performance analysis techniques as well as resource capabilities and tools, including probabilistic and scenario evaluations, which address the reliability impacts of new technologies, changing resource or demand resource composition, and environmental related regulations or legislation;
- Providing technical resources and expertise to perform analyses as needed, including to support and identify risk priorities for standards development, compliance, and enforcement activities;
- Development of appropriately tailored analysis and overall assessment, including guidance for registered entities, of high impact, low frequency BES risks, including physical security and geomagnetic disturbance (GMD) vulnerability.
- Providing technical resources to support up to four short-term reliability assessments (6-18 month horizon replacing the current summer and winter assessments), which focus on specific reliability risk areas and geographic areas with specific reliability concerns, while also allowing for regional assessments;
- Support of the common approach developed for NERC reliability assessments to ensure consistent treatment of resource and reliability evaluations.

- NERC and the Regional Entities will advance analytical capabilities for identifying and determining reliability risks and conducting various reliability assessments by:
  - Integrating the analysis and measures of essential reliability services (ERS) into the Long-Term Reliability Assessment. The process encompasses new data collection and analysis approaches needed to address assessment objectives of identifying reliability issues due to a changing resource mix;
  - Requiring advanced powerflow and stability analysis tools and objective expert input for transmission/deliverability assessments and studies;
  - Maturing and developing interconnection-wide analysis groups to support the assessment of interconnection-wide risks, such as frequency response;
  - Providing technical resources and reliability leadership for the advancement of probabilistic analyses supporting the Long-Term Reliability Assessment;
  - Requiring advanced statistical analysis tools and objective expert input to support them for probabilistic assessments.
- NERC will support the maintenance of the BESnet application and manage processing of the Regional BES Exception Requests (ERs), including technical validation of the definition and exception requests, self-determined notification submittals, periodic reviews of network changes affecting BES determinations, as well as requests for registration and certification reviews. The Regional Entities will continue to process BES ERs per guidelines established in the NERC Rules of Procedure.[41]
- NERC and Regional Entities' resources (through the case building designee agreements) will support the Planning Coordinators' development of long-term sustainable interconnection-wide powerflow and dynamics model cases under reliability standards MOD-032 and MOD-033 that exhibit the accuracy and fidelity reflecting actual BES reliability performance and dynamic conditions. These models will integrate needed elements that address reliability behavior of changing resource mix and technology of both generation and loads, including:

[41] NERC Rules of Procedure

  - Development of a process to ensure the continued compilation and creation of annual sets of seasonal and future steady state and dynamic simulation model cases;
  - Provision of technical resources to support the effective and continuous improvement of the models that incorporate recognition of reliability behavior of loads and generation associated with the changing resource mix;

- NERC and the Regional Entities will work collaboratively to enhance the ERO Enterprise's capability for post event analysis, including:
  - Development of a process to ensure the compilation and creation of steady state and dynamic simulation model cases for use in the investigation and analysis of major power system disturbance events;
  - Development and tracking of metrics that demonstrate the accuracy of the powerflow and dynamics models to replicate actual system conditions and reliability behavior;
  - Evaluation of event disturbances using phasor measurements and other methods to assess sufficiency of data and models.
- NERC and the Regional Entities may require contractor and consultant services to maintain continued support and technical expertise associated with activities listed in the above assumptions and with supporting special assessment, scenario, or other technical research efforts. It could potentially impact both NERC and Regional Entity resource allocation:
  - If significant events occur, contractor services may be required to support wide-area system analyses and root cause evaluations.
  - Contractor services may be necessary to support special assessment analyses (e.g., EPA 111(d) evaluation or ERS), scenario analyses (e.g., polar vortex-like severe event analyses and gas-electric interdependence), and other technical research efforts (e.g., similar to geomagnetic disturbances, and FAC-003 Vegetation Management).

Training, Education, and Operator Certification Program

- NERC will continue to budget for the unified learning management system (LMS) focused initially on Regional Entity audit staff, with near-term consideration for risk-based compliance monitoring and enforcement related staff. Future inclusion of other ERO functional areas is expected as potential requirements present themselves during system development. NERC will work with the Regional Entities to consolidate training resources and promote better coordination, planning, delivery and management of training and outreach efforts across the enterprise without adversely impacting Region-specific training requirements.
- The implementation of CMEP staff training and competencies are expected to influence the allocation of training resources throughout the enterprise. NERC will continue the development of compliance training modules with assistance of qualified subject matter experts from the Regional Entities and incorporation of outside expertise/services.
- An allocation of additional resources may be required to support certain training and outreach activities of the risk-based CMEP:
  - Regional Entities should allocate resources to meet the requirements for the compliance and enforcement staff that are associated with the implementation of the risk-based CMEP.
- The Regional Entities, in collaboration with NERC, are expected to help assess and determine training and outreach needs. This includes flexibility in approach between Regional Entities, and

anticipating areas of support for their staff and stakeholders for standards, compliance monitoring and enforcement, situation awareness and event analysis, and information technology. Addressing these needs will likely require additional resource allocation and budgeting considerations.

- NERC, in collaboration with Regional Entities, will develop and deliver additional CIP V5 training to support the transition. This may require consideration for additional funding of the NERC training and education budget.
- The Operating Personnel Certification program is expected to remain at a steady state with no additional resources required from the Regional Entities.
- Contractor and consultant services may be necessary to maintain the continued support and technical expertise associated with some enterprise training, outreach and education activities.

Situation Awareness and Infrastructure Security (including Events Analysis)

- NERC will continue to provide required support and leadership for the Operating Committee and the Critical Infrastructure Protection Committee, and standing committees, subcommittees, working groups, and task forces serving the standing committees. Regional Entity involvement is expected to remain at current levels with no additional resources required from the Regional Entities.
- Registered Entity participation in the ERO Event Analysis Process, which involves active participation by Regional Entity staffs, will continue at or above current levels through 2016.
- NERC will continue to budget and incur costs to operate and maintain the software application known as Situational Awareness for FERC, NERC, and Regional Entities, Version 2 (SAFNRv2) for situation awareness, and The Event Analysis Management System (TEAMS) for Events Analysis. The allocation of additional resource investments are expected to maintain the capabilities of SAFNRv2 throughout the planning period. Any such investments will be NERC funded and not result in an allocation of cost to the Regional Entities.
- Regional Entities will continue to budget for event analysis and situational awareness activities based on their respective Region's historical workload, as they did in the past. Some Regional Entities will continue to allocate resources as part of the activities accounted for under their RAPA program, and should clearly delineate where the activities' resources are budgeted.
- Regional Entities will support critical infrastructure security activities in the context of situation awareness, using those designated resources, unless specifically budgeted and managed elsewhere.

Electricity Information Sharing and Analysis Center (E-ISAC)

- NERC will continue to fund, operate and maintain the E-ISAC, with no increased cost to the Regional Entities.
- NERC will continue to fund and conduct the Grid Security Exercise program, with no increased cost to the Regional Entities. Analysis and planning activities will occur during even-numbered years and execution of the exercise will take place in odd-numbered years.
- NERC will continue to fund and conduct the Grid Security Conference as an annual event. Other than funding registration fees for individual attendees from their Regional Entity, no Regional Entity funding is anticipated.

Information Technology and Project Management Office (PMO)

- NERC and the Regional Entities will work collaboratively to refine existing strategies and governance and procurement practices applicable to the development, operation, and maintenance of enterprise architecture, including software and data systems supporting both NERC and Regional Entity operations.
- NERC's BP&B will include ongoing funding support for the development, operation, and maintenance of ERO Executive Management Group (EMG)-approved enterprise applications. Enterprise application funding in any given year will be subject to the budget and funding limits set forth in NERC's approved BP&B. Regional Entities should include appropriate funding for applications and supporting systems designed to satisfy Regional business needs (if not within the mutually agreed upon scope of the ERO Enterprise applications that are funded by NERC).
- Regional Entities may be required to provide or augment business teams to help develop application business requirements and to test business functionality within the ERO applications.
- Ongoing investments will be required to develop, implement, and maintain enhancements to the NERC and Regional Entity websites, ERO applications, and ERO data repositories, which are required to improve access to information and data. NERC and the Regional Entities will separately fund any enhancements to their own websites.

ERO Enterprise-wide Risk Management

- A common ERO Enterprise risk management framework commenced in 2014 to focus on identifying, assessing, prioritizing, and mitigating risks associated with the performance of both NERC and the Regional Entities. This will be a multi-year activity with the project expected to reach steady state by 2017.
- NERC's Director of Risk Management and Internal Audit is responsible for the overall development of this framework, with the approval of the ERO Regional Executives and under the oversight of NERC's Enterprise Wide Risk Management Committee.
  NERC and the Regional Entities will continue to devote resources to implement this framework. Activities include validating and prioritizing risks for EROEMG review and approval. The results will serve as an input into the NERC's future audit plans, which are reviewed and approved by the NERC Board of Trustees Enterprise Risk Management Committee. Regional Entities may add risk management and internal control resources as needed.

Exhibit B – Application of NERC Section 215 Criteria

DISCUSSION OF HOW THE NERC MAJOR ACTIVITIES IN THE 2017 BUSINESS PLAN AND BUDGET MEET THE NERC WRITTEN CRITERIA FOR DETERMINING WHETHER A RELIABILITY ACTIVITY IS ELIGIBLE TO BE FUNDED UNDER FEDERAL POWER ACT SECTION 215

I. Introduction

This Exhibit discusses how the major activities in NERC's 2017 Business Plan and Budget meet the NERC written criteria for determining whether a reliability activity is eligible to be funded under §215 of the Federal Power Act ("FPA §215"). This Exhibit is intended to satisfy Recommendation No. 38 resulting from the financial performance of NERC conducted by the Commission's Division of Audits ("DA") in 2012-2013 and adopted by the Commission in its November 2, 2012 order on NERC's 2013 Business Plan and Budget.[1] NERC submitted the written criteria to the Commission in a compliance filing dated February 21, 2013 in Docket No. FA11-21-000.[2] The Commission approved the NERC written criteria, with modifications, in an order issued in that docket on April 18, 2013.[3] The NERC written criteria as used in this Exhibit incorporate the modifications specified in the Compliance Order.[4]

II. Reliability Standards Program 2017 Major Activities

The major activities of the Reliability Standards Program are described at pages 24-26 of the 2017 Business Plan and Budget. The Reliability Standards Program carries out the ERO's responsibility to develop, adopt, obtain approval of, and modify as and when appropriate, mandatory Reliability Standards for the reliable planning, operation, and critical infrastructure protection of the North American BES. The major activity areas for this program include (1) providing project management and leadership to the reliability standard development process to deliver high-quality, continent-wide reliability standards, both new and modified, including standard development outreach activities, facilitation of Standard Drafting Team activities, drafting support, assisting Standard Drafting Teams in adhering to the processes in the *Standard Processes Manual*, and ensuring that the quality of documents produced are appropriate for approval by industry and the NERC Board; (2) facilitating continent-wide industry engagement in the standard development processes; and (3) conducting industry balloting on standards, disseminating information on standards and the standard development processes, and supporting regulatory filings and proceedings relating to standards. Additionally, the Reliability Standards Program provides technical advice and final quality review for Regional Entity standards development processes, presents proposed regional standards to the

[1] *North American Electric Reliability Corporation, Order Accepting 2013 Business Plan and Budget of the North American Electric Reliability Corporation and Ordering Compliance Filing*, 141 FERC ¶ 61,086 (2012) ("2013 Budget Order"). Recommendation 38, as adopted in the 2013 Budget Order, is: "In its annual business plan and budget filings, [NERC should] provide an explanation as to why the proposed activities to be undertaken by each program area for the budget year are statutory, including, at a minimum: a description and the purpose of the major activities to be taken by each program area and an explanation for why the activity is a statutory activity." *Id.* at P 16.

[2] *Compliance Filing of the North American Electric Reliability Corporation in Response to Paragraph 30 of November 2, 2012 Commission Order – NERC Written Criteria for Determining Whether a Reliability Activity is Eligible to be Funded Under Federal Power Act Section 215*, filed February 1, 2013 in Docket No. FA 11-21-000 ("February 1, 2013 Compliance Filing").

[3] *North American Electric Reliability Corporation, Order on Compliance*, 143 FERC ¶ 61,052 (2013) ("Compliance Order").

[4] For ease of reference, the complete NERC written criteria, as modified in accordance with the Compliance Order, are provided at the end of this Exhibit.

NERC Board, and prepares submissions for approval of regional standards to the applicable regulatory authorities in the U.S. and Canada.

For 2017, the major activities of the Reliability Standards Program will focus on (1) selection of standards projects to be undertaken based on the nature of the reliability issue, cost compared to risks, and whether a standard or another solution is most appropriate to address the issue; (2) addressing Commission directives and responding to Commission orders as necessary through the standards process; (3) performing enhanced periodic reviews of standards; and (4) facilitating smooth transitions to new standards through developing guidelines, webinars, and other activities to support auditor and industry training for new standards. Identification of need for new standards projects will be based on sources such as Commission directives and reliability risks identified by the Reliability Risk Management Process or the Reliability Issues Steering Committee (RISC).

The major activities of the Reliability Standards Program satisfy the following criteria:

I.A: Is the activity necessary or appropriate for Reliability Standards development projects pursuant to the NERC Rules of Procedure (ROP)?

I.B: Is the activity necessary or appropriate for providing guidance and assistance to Regional Entities in carrying out Regional Reliability Standards development activities?

I.C: Is the activity necessary or appropriate for information gathering, collection and analysis activities to obtain information for Reliability Standards development, including for purposes of identifying areas in which new Reliability Standards could be developed, existing Reliability Standards could be revised, or existing Reliability Standards could be eliminated?

I.D: Is the activity necessary or appropriate for the provision of training and education concerning Reliability Standards development processes, procedures, and topics for/to (i) NERC personnel, (ii) Regional Entity personnel, (iii) industry personnel?

II.F.1: Is the activity necessary or appropriate for the provision of training, education and dissemination of information for/to (i) NERC personnel, (ii) Regional Entity personnel, and (ii) industry personnel with respect to compliance monitoring and enforcement topics and topics concerning reliability risks identified through compliance monitoring and enforcement activities, such as (1) Requirements of Reliability Standards, including how to comply and how to demonstrate compliance? This includes development of guidance and interpretation documents.

IV: Is the activity one that was required or directed by a Commission order issued pursuant to §215? (Reliability Standards development projects re often initiated in response to directives in Commission orders).

V: Is the activity one that is required or specified by, or carries out, the provisions of NERC's Rules of Procedure that have been approved by the Commission as "Electric Reliability Organization Rules" (defined in 18 C.F.R. §39.1) pursuant to FPA §215(f)? (The applicable Rules of Procedure provisions for these major activities are §300 and Appendix 3A.)

VI: Is the activity necessary or appropriate for the supervision and oversight of Regional Entities in the performance of their delegated responsibilities in accordance with FPA §215, 18

C.F.R. Part 39, the Commission-approved delegation agreement between NERC and the Regional Entity, the NERC ROP, and applicable provisions of Commission orders?

IX. Is the activity necessary or appropriate for NERC and Regional Entity committees, subcommittees and working groups engaged in activities encompassed by one or more of the other criteria?

X. Is the activity necessary or appropriate for the analysis and evaluation of activities encompassed by one or more of the other criteria for the purpose of identifying means of performing the activities more effectively and efficiently?

III. Compliance Monitoring and Enforcement and Organization Registration and Certification Program Area 2017 Major Activities

The major activities of the Compliance Monitoring and Enforcement and Organization Registration and Certification Program Area are described at pages 28-30, 32-33, and 35-41 of the 2017 Business Plan and Budget. This Program Area is comprised of three operational groups: (1) Compliance Assurance (addressing compliance monitoring), (2) Reliability Assurance (addressing assurance, organization registration and certification), and (3) Compliance Enforcement.

The Compliance Assurance group works collaboratively with the Regional Entities to ensure effective implementation of risk-based compliance monitoring under the Compliance Monitoring and Enforcement Program ("CMEP") across the entire ERO Enterprise. This group's activities include the following major activities and functions: (1) ensuring that Regional Entities monitor registered entities for compliance according to their specific facts and circumstances, developing customized compliance oversight plans (COPs) for each registered entity based on its inherent risk assessment (IRA); (2) overseeing Regional Entities' IRAs of registered entities; (3) oversight of the quality implementation of the risk-based compliance monitoring program; (4) development of the annual CMEP Implementation Plan; (5) oversight of use of necessary compliance-related processes, procedures, IT platforms, tools and templates; (6) development and delivery of education and training for ERO Enterprise staff; (7) conducting CIP V5 training and education programs and other outreach that support industry compliance and integration of risk assessment and internal controls; (8) conducting CIP-014-1 training and outreach activities related to effective implementation of the Physical Security Reliability Standard; (9) coordinating with the NERC Standards department for standards development to provide compliance information, statistics, and perspectives to standard drafting teams to foster development of standards that provide increased reliability benefit and clarify compliance risks, and to assist in smooth transitions for standards from development to enforceability, including by providing draft compliance monitoring guidance, information on how compliance with draft standards will be determined, and input on auditability and enforceability; (10) supporting Regional Entity and industry committees, working groups and task forces, such as the NERC Compliance and Certification Committee; (11) industry training for every Reliability Standard approved by the Commission, as well as industry-focused outreach events and webinars on risk-based CMEP activities; and (12) promoting registered entities' development of effective compliance programs and internal controls.

The ongoing and new major activities of the Compliance Assurance group for 2017 will include: (1) continuing to mature the risk-based compliance program, including fully developing customized COPs for registered entities; (2) working with NERC Enforcement and IT and with Regional Entity staffs on improvements in the existing compliance reporting, analysis, tracking system and other compliance tools

supporting risk-based activities; (3) supporting successful implementation of CIP V5 standards and subsequent enhancements that become effective in 2017 and beyond; (4) continuing to monitor and support effective implementation and monitoring of the Physical Security Reliability Standard; (5) initiating a training program to support implementation of common audit procedures for each standard; and (6) continuing to integrate standards and compliance functions for clear stakeholder implementation, including through a common set of Reliability Standards Audit Worksheets, measures, or successors for all standards and in initiating a compliance phase-in learning period for all standards.

The Compliance Analysis, Certification and Registration group is responsible for a range of requirements and activities embodied in Section 500 and Appendices 5A and 5B of the NERC ROP, including providing technical resource support to standards development, compliance monitoring, and enforcement; ensuring that all entities impacting the BES are registered commensurate with risk; ensuring all Reliability Coordinators ("RC"), Balancing Authorities ("BA") and Transmission Operators ("TOP") are certified; conducting industry reliability assurance activities; and ensuring that compliance gaps identified in reportable events are assessed and addressed if appropriate. Major activities of this group include (1) registration of BES users, owners, and operators who are responsible for compliance with Commission-approved Reliability Standards; (2) evaluating and certification of the competency of RCs, BAs and TOPs; (3) conducting activities to reasonably assure the ERO that certain actions have been taken as reported in response to NERC Alerts or guidance to industry; (4) providing oversight of Regional Entity implementation of regional registration, compliance, certification, investigation, and complaint programs and processes; (5) conducting investigations to identify Possible Violations of Reliability Standards in response to complaints, BES disturbances, or other triggers, including participating on all Regional Entity-led investigations and as observers as requested on Commission-led reliability investigations and inquiries; (6) working with Regional Entity staff to confirm that qualified events and disturbances are evaluated against the relevant Reliability Standards and to ensure formal compliance monitoring occurs if indicated; and (7) addressing formal complaints that allege violations of Reliability Standards. Specific major activities of Compliance Analysis, Certification and Registration for 2017 will include continuing to work with the NERC-led panel to review registered entities for deregistration or applicability to a reduced number of Reliability Standards; and implementing registration program improvements and certification program improvements identified in 2016, including conducting training as necessary.

The Compliance Enforcement department is responsible for overseeing enforcement processes, the application of penalties or sanctions, and activities to mitigate and prevent recurrence of noncompliance with Reliability Standards. The Department works collaboratively with the Regional Entities to ensure consistent and effective implementation of the risk-based CMEP, including evaluating the consistency of disposition methods including assessment of penalties or sanctions. It also focuses on ensuring that the ERO Enterprise dedicates resources to the matters that pose the greatest risk to reliability. The Compliance Enforcement department monitors Regional Entities' enforcement processes and provides oversight over the outcomes of such processes, to ensure due process, identify best practices and process efficiency opportunities, and promote consistency among Regional Entities' business practices; collects and analyzes compliance enforcement data and trends to assist with identification of emerging risks and help to inform development of enforcement policy and processes; files notices of penalty ("NOP") and other submittals associated with noncompliance discovered through Regional Entity compliance, monitoring and enforcement activities; processes and files NOPs and other submittals discovered through NERC-led investigations and audits; collaborates with other NERC departments, including Compliance Assurance, Reliability Standards and Regional Entity Coordination; and delivers training of the ERO Enterprise staff and outreach to registered entities on compliance and enforcement

topics. Compliance Enforcement also conducts outreach activities that focus on self-logging, compliance exceptions, risk elements, CIP V5, IRAs, and internal controls.

During 2017, the Compliance Enforcement department will continue to focus on the successful implementation of, as well as refining and improving, the risk-based CMEP. The major activities of Compliance Enforcement will include refining and improving risk-based CMEP processes; implementing in a transparent manner the risk-focused ERO Enterprise enforcement philosophy; expanding the feedback loop of information from Enforcement to Standards and other program areas; and working with Compliance Assurance, IT, and Regional Entity staffs regarding improvements in the existing compliance, reporting, analysis system and other compliance tools to support risk-based activities.

The major activities of the Compliance Monitoring and Enforcement and Organization Registration and Certification Program Area satisfy the following criteria:

I.A: Is the activity necessary or appropriate for Reliability Standards development projects pursuant to the NERC Rules of Procedure?

I.C: Is the activity necessary or appropriate for information gathering, collection and analysis activities to obtain information for Reliability Standards development, including for purposes of identifying areas in which new Reliability Standards could be developed, existing Reliability Standards could be revised, or existing Reliability Standards could be eliminated?

II.A: Is the activity necessary or appropriate for the identification and registration of users, owners, and operators of the Bulk Power System that are required to comply with Requirements of Reliability Standards applicable to the reliability functions for which they are registered?

II.B: Is the activity necessary or appropriate for the Certification of Reliability Coordinators, Transmission Operators and Balancing Authorities as having the requisite personnel, qualifications and facilities and equipment needed to perform these reliability functions in accordance with the applicable Requirements of Reliability Standards?

II.D: Is the activity necessary or appropriate for conducting, participating in or overseeing compliance monitoring and enforcement activities pursuant to the NERC ROP and (through the Regional Entities) the Commission-approved delegation agreements?

II.E: Is the activity necessary or appropriate for information gathering, collection and analysis activities to obtain information to monitor and enforce compliance with Reliability Standards, including evaluating the effectiveness of current compliance monitoring and enforcement processes, the need for new or revised compliance monitoring and enforcement processes, and the need for new or different means of training and education on compliance with Reliability Standards.

II.F: Is the activity necessary or appropriate for the provision of training, education and dissemination of information for/to (i) NERC personnel, (ii) Regional Entity personnel, and (iii) industry personnel with respect to compliance monitoring and enforcement topics and topics concerning reliability risks identified through compliance monitoring and enforcement activities, such as: (1) Requirements of Reliability Standards, including how to comply and how to demonstrate compliance? This includes development of guidance and interpretation documents.

(2) Compliance monitoring and enforcement processes, including how to conduct them, how to participate in them, and the expectations for the process? This includes development of guidance documents. (3) Disseminating, through workshops, webinars, Advisories/Recommendations/Essential Actions, and other publications, "lessons learned" information on compliance concerns and reliability risks obtained through compliance monitoring and enforcement activities, monitoring and investigation of Bulk Power System major events, off-normal occurrences and near miss events, and other Bulk Power System monitoring activities? (4) Registered Entity internal processes for compliance with Reliability Standards, such as development, implementation and maintenance of internal reliability compliance programs?

V: Is the activity one that is required or specified by, or carries out, the provisions of NERC's Rules of Procedure that have been approved by the Commission as "Electric Reliability Organization Rules" (defined in 18 C.F.R. §39.1) pursuant to FPA §215(f)? (The applicable Rules of Procedure provisions for these major activities are §400 and 500 and Appendices 4B, 4C, 5A, 5B and 5C.)

VI: Is the activity necessary or appropriate for the supervision and oversight of Regional Entities in the performance of their delegated responsibilities in accordance with FPA §215, 18 C.F.R. Part 39, the Commission-approved delegation agreement between NERC and the Regional Entity, the NERC ROP, and applicable provisions of Commission orders?

IX: Is the activity necessary or appropriate for NERC and Regional Entity committees, subcommittees and working groups engaged in the activities encompassed by one or more of the other criteria?

X: Is the activity necessary or appropriate for the analysis and evaluation of activities encompassed by one or more of the other criteria for the purpose of identifying means of performing the activities more effectively and efficiently?

IV. Reliability Assessment and System Analysis Program 2017 Major Activities

The major activities of the Reliability Assessment and System Analysis (RASA) Program are described at pages 43-47 of the 2017 Business Plan and Budget. The RASA Program carries out the ERO's responsibility to conduct assessments of the reliability and adequacy of the BES to provide insight and guidance about reliability risks. RASA focuses on developing a technical framework and understanding of the emerging reliability risks facing the industry. The principal activity areas of the RASA Program include: independent assessments and reports on the overall reliability and adequacy of the BES, and associated reliability risks that could impact the upcoming summer and winter seasons and the long-term (e.g. 10-year) planning horizon and other reliability issues requiring an in-depth analysis; interconnection-wide analysis for analyzing steady-state and dynamic conditions, including frequency, Essential Reliability Services, stability, and oscillatory behavior aspects; assurance oversight that electrical elements necessary for reliable operation of the BES are appropriately identified as BES elements; support for development and improvement of long-term sustainable interconnection-based power flow, dynamic and load models that exhibit the accuracy and fidelity reflecting actual BES reliability performance and dynamic conditions; advancement of industry and the ERO's understanding of power system characteristics and behaviors by gathering larger PMU datasets of data for advanced data analytics and modeling improvements; and establishing reliability leadership and consistent, technically sound guidance and recommendations that position industry and policy-makers to enhance reliability through effective outreach and

communications.

The RASA Program works with industry leaders to create a reliability strategy that is relevant, timely, and effective at addressing the most important reliability risks, through reviewing and addressing key priority risks identified by the NERC RISC, synthesizing information identified through analysis and assessment efforts, extracting and prioritizing the associated reliability risks; sharing and integrating risk analysis insights across the ERO Enterprise; and translating that knowledge into actionable guidance and recommendations for NERC management, the Board, and entities, and government policy makers. Reliability assessments evaluate the expected reliability behavior of the BPS through extensive deterministic and probabilistic analyses to identify potential reliability risks and potential mitigation approaches. RASA monitors the ongoing and historic reliability performance of the BES through data gathered to analyze historic trends and provides reports and recommendations regarding the associated conditions that could impact reliability, security and stability of the BPS. RASA assesses and reports on the reliability, adequacy and associated risks that could impact short-term and long-term study periods, and conducts special reliability assessments and identifies recommendations and guidance actions that may be warranted to lessen identified risks or enhance overall reliability. RASA also coordinates forecast reliability data between planning areas, the Regional Entities, and government organizations. A significant ongoing effort involving RASA, Regional Entity staff, and stakeholders focuses on continued development of effective Essential Reliability Services, leading to defined Essential Reliability Services, an evaluation of initial metrics and data compilation of actual performance, and ongoing assessment.

RASA works closely with other organizations such as the Electric Power Research Institute (EPRI), Department of Energy (DOE), Institute of Electrical and Electronics Engineers (IEEE), Institute of Nuclear Power Operations (INPO), North American Transmission Forum (NATF), North American Generation Forum (NAGF), Canadian Electricity Association (CEA), Interstate Natural Gas Association of America, and Natural Gas Supply Association, on a number of energy industry reliability issues such as geomagnetic disturbances, vegetation management, variable generation integration, and interdependency of gas and electric systems.

The ongoing and new major activities of the RASA Program for 2017 include: (1) implementing advanced reliability assessment and system analysis methods to address the changing nature of the grid, including issuing reliability assessment reports, guidelines, and recommendations to address high priority evolving performance trends and address emerging risks to reliability; (2) issue special assessments on identified high-priority risks as prioritized and recommended by the RISC, including on changing resource mix and maintaining Essential Reliability Services, increased penetration of distributed energy resources, increasing dependency on generation fuel by natural gas, and inter-area and local system oscillations in all interconnections and their potential impact on interconnection reliability; (3) providing the basis for industry to meet the regulatory requirements of Reliability Standard BAL-003-1, including the Frequency Response Annual Analysis and BAL-003 filing with the Commission and the determination of Interconnection Frequency Response Obligation and Balancing Authority Frequency Reporting Obligation values; (4) supporting Reliability Standard development by providing subject matter expertise; (5) Providing support and leadership to the NERC Planning Committee and to standing committees and subcommittees, working groups, and task forces; (6) supporting major event investigations, analyses, and reporting of major findings, recommendations, and lessons learned that will improve reliability; (7) providing feedback to interconnection-wide model-building groups on improvements to system model quality and fidelity; and (8) assist in development of approaches to registration and provide input to NERC staff in support of the development of CMEP risk elements, as well as supporting and leading the BES Definition Exception process and processing Self-Determined Notifications.

The major activities of the RASA Program satisfy the following criteria:

I.A: is the activity necessary or appropriate for Reliability Standards development projects pursuant to the NERC Rules of Procedure?

I.C.1: Is the activity necessary or appropriate for information gathering, collection and analysis activities to obtain information for Reliability Standards development, including for purposes of identifying areas in which new Reliability Standards could be developed, existing Reliability Standards could be revised, or existing Reliability Standards could be eliminated, such as: (1) Measuring reliability performance – past, present and future; publishing or disseminating the results of such measurements; analyzing the results of such measurements; identifying and analyzing risks to reliability of the Bulk Power System based on such measurements; and/or identifying approaches to mitigating or eliminating such risks?

II.A: Is the activity necessary or appropriate for the identification and registration of users, owners, and operators of the Bulk Power System that are required to comply with Requirements of Reliability Standards applicable to the reliability functions for which they are registered?

III.A: Is the activity necessary or appropriate for the preparation or dissemination of long-term, seasonal, and special assessments of the reliability and adequacy of the Bulk Power System?

III.B: Is the activity necessary or appropriate for measuring reliability performance – past, present and future; publishing or disseminating the results of such measurements; analyzing the results of such measurements; identifying and analyzing risks to reliability of the Bulk Power System based on such measurements; and/or identifying approaches to mitigating or eliminating such risks?

III.F: Is the activity necessary or appropriate for the development and dissemination of Advisories/Recommendations/Essential Actions regarding lessons learned and potential reliability risks to users, owners, and operators of the Bulk Power System?

IV: Is the activity one that was required or directed by a Commission order issued pursuant to §215? (FERC orders directed NERC to develop and implement a revised definition of "Bulk Electric System" and a procedure for requesting and receiving exceptions from the BES definition, and subsequently approved NERC's proposed revised BES definition and its proposed BES exception procedure.)

V. Is the activity one that is required or specified by, or carries out, the provisions of NERC's Rules of Procedure that have been approved by the Commission as "Electric Reliability Organization Rules" (defined in 18 C.F.R. §39.1) pursuant to FPA §215(f)? (The applicable Rules of Procedure provisions for this major activity are §801-806 and 809-810 and Appendix 5C.)

VI: Is the activity necessary or appropriate for the supervision and oversight of Regional Entities in the performance of their delegated responsibilities in accordance with FPA §215, 18 C.F.R. Part 39, the Commission-approved delegation agreement between NERC and the Regional Entity, the NERC ROP, and applicable provisions of Commission orders?

IX: Is the activity necessary or appropriate for NERC and Regional Entity committees, subcommittees and working groups engaged in activities encompassed by one or more of the other criteria?

X: Is the activity necessary or appropriate for the analysis and evaluation of activities encompassed by one or more of the other criteria for the purpose of identifying means of performing the activities more effectively and efficiently?

V. Performance Analysis 2017 Major Activities

The major activities of the Performance Analysis (PA) group are described at pages 49-51 of the 2017 Business Plan and Budget. The PA group provides analysis and guidance abut reliability risks and areas of concern based on analysis of historic system performance, including with respect to system, equipment, entity and organizational performance that may indicate a need to develop remediation strategies, action plans, or data used to revise or retire Reliability Standards or consider new Reliability Standards. PA focuses on developing a technical framework and understanding reliability risks facing the industry.

PA collects transmission outage, generator performance, demand response, and protection and control systems misoperation data in a common format using various industry databases; this data is used to develop and report grid metrics that analyze outage frequency, duration, causes, and other factors related to transmission and generator performance and automatic power system protection and control effectiveness. Trends, findings and recommendations from PA serve as technical input to Reliability Standards and to standards project prioritization, compliance process improvements, event analyses, reliability assessment, and critical infrastructure protection efforts. In 2017, PA will add wind generator data to the data collected. The analyses and results collected and produced are reported in the annual State of Reliability Report, which provides guidance and recommendations for enhanced bulk system reliability. In 2017, the State of Reliability Report will begin to reflect post-seasonal reliability review, insights from analysis of transmission, generator, and demand response data systems, and integration of event analysis and misoperations.

PA works closely with other organizations including EPI, DOE, IEEE, INPO, NATF, NAGF, and CEA, on a number of fronts, including the Transmission Availability Data System (TADS), Generator Data Availability System (GADS), and Demand Response Availability Data System (DADS).

PA's ongoing and new major activities for 2017 will include the following: (1) Issuing the State of Reliability Report and guidelines, recommendations, and alerts as needed, including verification and validation of data and information through Regional Entities and technical committees. (2) Overseeing and evaluating reliability trends that identify reliability risks, by analyzing data contained in TADS, GADS and TADS as well as reliability metrics and protection and control systems misoperations data. (3) Supporting Reliability Standards development by providing subject matter expertise. (4) Providing support and leadership to the NERC standing committees' subcommittees, working groups, and task forces serving the standing committees. (5) Assisting in the development of approaches to registration and providing input to NERC staff in support of development of CMEP risk elements. (6) Conducting major event investigations, analyses, and reporting of major findings, recommendations, and lessons learned that will improve reliability. (7) Providing insight on emerging system protection issues, and handing off any issues with future implications to RASA.

The major activities of PA satisfy the following criteria:

I.A: is the activity necessary or appropriate for Reliability Standards development projects pursuant to the NERC Rules of Procedure?

I.C.1: Is the activity necessary or appropriate for information gathering, collection and analysis activities to obtain information for Reliability Standards development, including for purposes of identifying areas in which new Reliability Standards could be developed, existing Reliability Standards could be revised, or existing Reliability Standards could be eliminated, such as: (1) Measuring reliability performance – past, present and future; publishing or disseminating the results of such measurements; analyzing the results of such measurements; identifying and analyzing risks to reliability of the Bulk Power System based on such measurements; and/or identifying approaches to mitigating or eliminating such risks? (2) Monitoring, event analysis and investigation of Bulk Power System major events, off-normal occurrences and near miss events?

II.A: Is the activity necessary or appropriate for the identification and registration of users, owners, and operators of the Bulk Power System that are required to comply with Requirements of Reliability Standards applicable to the reliability functions for which they are registered?

III.A: Is the activity necessary or appropriate for the preparation or dissemination of long-term, seasonal, and special assessments of the reliability and adequacy of the Bulk Power System?

III.B: Is the activity necessary or appropriate for measuring reliability performance – past, present and future; publishing or disseminating the results of such measurements; analyzing the results of such measurements; identifying and analyzing risks to reliability of the Bulk Power System based on such measurements; and/or identifying approaches to mitigating or eliminating such risks?

III.F: Is the activity necessary or appropriate for the development and dissemination of Advisories/Recommendations/Essential Actions regarding lessons learned and potential reliability risks to users, owners, and operators of the Bulk Power System?

V. Is the activity one that is required or specified by, or carries out, the provisions of NERC's Rules of Procedure that have been approved by the Commission as "Electric Reliability Organization Rules" (defined in 18 C.F.R. §39.1) pursuant to FPA §215(f)? (The applicable Rules of Procedure provisions for this major activity are §801-811 and Appendix 8.)

IX: Is the activity necessary or appropriate for NERC and Regional Entity committees, subcommittees and working groups engaged in activities encompassed by one or more of the other criteria?

VI. Reliability Risk Management (Situation Awareness and Event Analysis) 2017 Major Activities

The major activities of the Reliability Risk Management ("RRM") group, which is comprised of the Situation Awareness Department and the Event Analysis Department, are described at pages 53-55 and 57-58 of the 2017 Business Plan and Budget. The RRM group carries out the ERO's responsibility to perform assessments (including real-time and near-real-time continual awareness, detailed analysis of

significant events, and longer-term broad performance assessments) of the reliability and adequacy of the BES, including identifying potential issues of concern relating to system, equipment, entity, and human performance. RRM has six primary functions: (1) BES awareness, (2) event analysis and determination of root and contributing causes, (3) assessment of human performance challenges that affect BES reliability and identification of improvement opportunities, (4) continent-wide analysis and reporting of BES performance, (5) support of the NERC Operating Committee, and (6) support of the NERC Critical Infrastructure Protection Committee. Through awareness and continuous assessment, RRM identifies potential reliability risks to the BES, analyzes events in detail, ensures that industry is well informed of system events, emerging trends, risk analysis, and lessons learned, and provides data and analysis to inform other aspects of NERC's statutory functions.

The Situation Awareness department along, with the Regional Entities, monitors BES conditions, significant occurrences and emerging risks, and threats across the 14 Reliability Coordinator regions in North America. Situation Awareness also supports development and publication of NERC Alerts and awareness products, and facilitates information sharing among industry, Regions and government during crisis situations and major system disturbances. Situation Awareness is engaged in enhancement, replacement, streamlining or modification of several reliability-related situation awareness and monitoring tools, including SAFNRv2, operation and maintenance pending replacement of the current secure alert tool, refreshing the Reliability Coordinator Information System application, and continuing to set conditions to bring limited Synchrophasor data into NERC for wide-area situational awareness and event triage applications. The Situation Awareness Department uses the following reliability-related tools to support its activities: Resource Adequacy (ACE Frequency) Tool; Inadvertent Interchange; Frequency Monitoring and Analysis Tool; Intelligent Alarms Tool; and Genscape (PowerIQ and PowerRT tools).

The ongoing and new major activities of the Situation Awareness department for 2017 include: ensuring that the ERO is aware of all BES events above a threshold of impact; enabling the sharing of information and data to facilitate wide area situational awareness; during crisis situations, facilitating the exchange of information among industry, Regions, and U.S. and Canadian governments; keeping the industry informed of emerging reliability threats and risks to the BES, including any expected actions; conducting the annual NERC Monitoring and Situational Awareness Conference and Human Performance Conference; and administering the NERC Alerts process as specified in §810 of the Rules of Procedure to issue Advisory (Level 1) Alerts on significant and emerging reliability and security related topics, and facilitate the tracking of actions specified in Recommendation (Level 2) and Essential Action (Level 3) Alerts.

The Event Analysis department performs assessments of the reliability and adequacy of the BES to identify potential issues of concern related to system, equipment, entity, and human performance that may indicate a need to develop remediation strategies, action plans, or data used to revise Reliability Standards or consider new Reliability Standards. Event Analysis conducts analyses to determine the causes of events, promptly assures tracking of corrective actions to prevent recurrence, and provides lessons learned to the industry. Event Analysis analyzes all reportable events for sequence of events, root cause, risks to reliability, and mitigation and ensures that the industry is well-informed of system events, emerging trends, risk analysis, lessons learned, and expected actions. Event Analysis conducts in-depth analyses of approximately 150 events per year on average. Additionally, Event Analysis identifies human error risks and precursor factors that allow human error to affect BES reliability, and educates industry regarding such risks, precursors, and related mitigation methods. Event analysis also supports compliance and standards training initiatives and trending and analysis to identify emerging reliability risks to the BES. Event Analysis works in collaboration with and supports the activities of other groups involved in human

performance analysis including the NERC Operating Committee's Event Analysis Subcommittee, the WECC Human Performance Working Group, and others. Event Analysis also collaborates with industry groups including the NATF, NAGF, and trade associations.

The ongoing and new major activities for 2017 for the Event Analysis department include: (1) Working with Regional Entities to obtain and review information from registered entities on qualifying events and disturbances in order to advance awareness of events above a threshold level; facilitating analysis of root and contributing causes, risks to reliability, wide area assessments and remediation efforts; and disseminating information regarding events in a timely manner. (2) Ensuring that all reportable events are analyzed for sequence of events, root cause, risk to reliability, and mitigation. (3) Continuing to refine risk-based methodologies to support better identification of reliability risks, including use of more sophisticated cause codes for analysis. (4) Conducting training (webinars, workshops and conference support) to inform industry and the ERO of lessons learned, root cause analysis, trends, human performance, and cold weather preparedness and recommendations. (5) Developing reliability recommendations and alerts as needed, and tracking industry accountability for critical reliability recommendations. (6) Ensuring that industry is well informed of system events, emerging trends, risk analysis, lessons learned, and expected actions. (7) Conducting major event analysis and reporting of major findings and recommendations that will improve reliability. The Event Analysis department will also support several top priority reliability risk projects being led by the PA program.

The major activities of the RRM group satisfy the following criteria:

I.C.2: Is the activity necessary or appropriate for information gathering, collection and analysis activities to obtain information for Reliability Standards development, including for purposes of identifying areas in which new Reliability Standards could be developed, existing Reliability Standards could be revised, or existing Reliability Standards could be eliminated, such as: (2) Monitoring, event analysis and investigations of Bulk Power System major events, off-normal occurrences and near-miss events?

II.E.2: Is the activity necessary or appropriate for information gathering, collection and analysis activities to obtain information to monitor and enforce compliance with Reliability Standards, including evaluating the effectiveness of current compliance monitoring and enforcement processes, the need for new or revised compliance monitoring and enforcement processes, and the need for new or different means of training and education on compliance with Reliability Standards, such as: (2) Monitoring, event analysis and investigation of Bulk Power System major events, off-normal occurrences, and near miss events?

II.F.3: Is the activity necessary or appropriate for the provision of training, education and dissemination of information for/to (i) NERC personnel, (ii) Regional Entity personnel, and (iii) industry personnel with respect to compliance monitoring and enforcement topics and topics concerning reliability risks identified through compliance monitoring and enforcement activities, such as: (3) Disseminating, through workshops, webinars, Advisories, Recommendations, Essential Actions, and other publications; "lessons learned" information on compliance concerns and reliability risks obtained through compliance monitoring and enforcement activities; monitoring and investigation of Bulk Power System major events, off-normal occurrences and near miss events, and other Bulk Power System monitoring activities?

II.G: Is the activity necessary or appropriate for the development and provision of tools and services that are useful for the provision of adequate reliability, because they relate specifically to compliance with existing Reliability Standards and they proactively help avert Reliability Standard violations and Bulk Power System disturbances?

III.C: Is the activity necessary or appropriate for investigating, analyzing, evaluating, and disseminating information concerning, the causes of major events and off-normal occurrences, and/or providing coordination assistance, technical expertise and other assistance to users, owners, and operators of the Bulk Power System in connection with Bulk Power System major events and off-normal occurrences, but not real-time operational control of the Bulk Power System?

III.D: Is the activity necessary or appropriate for awareness of circumstances on the Bulk Power System and to contribute to understanding risks to reliability?

III.F: Is the activity necessary or appropriate for the development and dissemination of Advisories/Recommendations/Essential Actions regarding lessons learned and potential reliability risks to users, owners, and operators of the Bulk Power System?

V: Is the activity one that is required or specified by, or carries out, the provisions of NERC's Rules of Procedure that have been approved by the Commission as "Electric Reliability Organization Rules" (defined in 18 C.F.R. §39.1) pursuant to FPA §215(f)? (The applicable Rules of Procedure provisions for these major activities are §807, 808, 810 and 1001 and Appendix 8.)

IX. Is the activity necessary or appropriate for NERC and Regional Entity committees, subcommittees and working groups engaged in activities encompassed by one or more of the other criteria?

VII. Electricity Information Sharing and Analysis Center 2017 Major Activities

The major activities of the Electricity Information Sharing and Analysis Center ("E-ISAC") are described at pages 60-63 of the 2017 Business Plan and Budget. The primary function of E-ISAC is to reduce cyber and physical risk to the Electricity Subsector across North America by providing unique insights, leadership and coordination, and to be the trusted, timely, actionable resource of grid risk information and analysis to enhance electric reliability. The E-ISAC facilitates electricity sector coordination regarding physical security and cybersecurity events affecting the BES. E-ISAC analytic personnel maintain a detailed understanding of emerging vulnerabilities and threats within the broad industrial control systems community and the more focused BES community, utilizing, among other sources, intelligence reporting services. E-ISAC manages and executes NERC's responsibilities in the Cybersecurity Risk Information Sharing Program ("CRISP") and acts as the program manager for CRISP. The purpose of CRISP is to facilitate the sharing of cyber threat information and to develop situation awareness tools that enhance the electricity sector's ability to identify, prioritize, and coordinate protection of its critical infrastructure. Finally, ES-ISAC also supports an annual grid security conference and a biennial Grid Security Exercise. During 2017, the E-ISAC's and CRISP's activities will include beginning development and implementation of significant improvements to the E-ISAC portal to extend its functionality and allow for easier access to filter data for the cyber and physical security communities and for automated information sharing.

The major activities of the ES-ISAC satisfy the following criteria:

I.C.1: Is the activity necessary or appropriate for information gathering, collection and analysis activities to obtain information for Reliability Standards development, including for purposes of identifying areas in which new Reliability Standards could be developed, existing Reliability Standards could be revised, or existing Reliability Standards could be eliminated, such as: (1) Measuring reliability performance – past, present and future; publishing or disseminating the results of such measurements; analyzing the results of such measurements; identifying and analyzing risks to reliability of the Bulk Power System based on such measurements; and/or identifying approaches to mitigating or eliminating such risks? (2) Monitoring, event analysis and investigation of Bulk Power System major events, off-normal occurrences and near-miss events?

III.D: Is the activity necessary or appropriate for awareness of circumstances on the Bulk Power System and to contribute to understanding risks to reliability.

III.E: Is the activity necessary or appropriate for gathering, analyzing and sharing with and among industry and government participants, information regarding the physical or cyber security of the Bulk Power System.

III.F: Is the activity necessary or appropriate for the development and dissemination of Advisories/Recommendations/Essential Actions regarding lessons learned and potential reliability risks to users, owners, and operators of the Bulk Power System?

V: Is the activity one that is required or specified by, or carries out, the provisions of NERC's Rules of Procedure that have been approved by the Commission as "Electric Reliability Organization Rules" (defined in 18 C.F.R. §39.1) pursuant to FPA §215(f)? (The applicable Rules of Procedure provisions for these major activities are §810 and 1003.)

IX. Is the activity necessary or appropriate for NERC and Regional Entity committees, subcommittees and working groups engaged in activities encompassed by one or more of the other criteria?

VIII. Training, Education, and Operator Certification Program 2017 Major Activities

The major activities of the Training, Education, and Operator Certification Program are described at pages 65-67 of the 2017 Business Plan and Budget. The major activities of this program include oversight and coordination of the delivery of training programs to NERC and Regional Entity staff; as well as training and education for industry participants on the requirements of Reliability Standards, the Reliability Standards development process, and the compliance monitoring and enforcement process. The Training and Education Program supports the ERO's responsibilities to develop, adopt, and obtain approval of Reliability Standards and to monitor, enforce and achieve compliance with the mandatory standards. The Training and Education Program also supports NERC's System Operator Certification Program, which ensure that personnel operating the BES have the skills, training and qualifications needed to operate the BES reliably. This Program maintains the credentials required to work in system control centers across North America for over 6,000 system operators. The Training and Education Program prepares operators for complying with requirements of Reliability Standards and appropriately operating the BES during normal and emergency operations. Education and training activities include the following subject matter: risk-based compliance monitoring and enforcement; standards and compliance;

registration and certification; event analysis, cause analysis, and lessons learned; reliability assessment and system analysis; continuing education for system operators; and new system operator certification examinations for the Reliability Coordinator, Transmission Operator, Balancing and Interchange Operator, and Balancing, Interchange and Transmission Operator credentials.

The major activities of the Training, Education, and Operator Certification Program for 2017 include providing and expanding training and education for ERO personnel and industry in the following areas: Reliability Standards compliance, emerging cyber-related issues; auditor skills and consistent audit and investigation techniques and standards compliance reviews, including risk-based compliance monitoring and enforcement and other improvements in compliance and enforcement practices; development and implementation of clear and technically sound Reliability Standards; lessons learned and trends from events, and identified themes from trending and common cause analysis; effective root, apparent and common cause analysis methods; quality improvement of registered entity self-reporting and self-certification; entity registration processes, issues and alternatives; human performance fundamentals; and developing and incorporating a systematic approach to ongoing training. The Training, Education, and Operator Certification Program will continue to work with industry stakeholders and the System Operator Certification exam vendor to create certification exams that will promote reliability of the BPS. Further, the Continuing Education (CE) program will evaluate and revise the current program criteria as reflected in the CE program manual, taking into account the growth and maturation of industry training programs as well as ongoing research on adult learning to ensure the CE program continues to foster improvements in training and promotes quality in training programs.

The major activities of the Training, Education, and Operator Certification Program satisfy the following criteria:

I.D: Is the activity necessary or appropriate for the provision of training and education concerning Reliability Standards development processes, procedures and topics for/to (i) NERC personnel, (ii) Regional Entity personnel, and (iii) industry personnel?

II.C: Is the activity necessary or appropriate for the Certification of system operating personnel as qualified to carry out the duties and responsibilities of their positions in accordance with the Requirements of applicable Reliability Standards?

II.F: Is the activity necessary or appropriate for the provision of training, education and dissemination of information for/to (i) NERC personnel, (ii) Regional Entity personnel, and (iii) industry personnel with respect to compliance monitoring and enforcement topics and topics concerning reliability risks identified through compliance monitoring and enforcement activities, such as: (1) Requirements of Reliability Standards, including how to comply and how to demonstrate compliance? This includes development of guidance and interpretation documents. (2) Compliance monitoring and enforcement processes, including how to conduct them, how to participate in them, and the expectations for the processes? This includes development of guidance documents. (3) Disseminating, through workshops, webinars, Advisories/Recommendations/Essential Actions, and other publications, “lessons learned” information on compliance concerns and reliability risks obtained through compliance monitoring and enforcement activities, monitoring and investigation of Bulk Power System major events, off-normal occurrences and near miss events, and other Bulk Power System monitoring activities. (4) Registered Entity internal processes for compliance with Reliability Standards, such as development, implementation and maintenance of internal reliability compliance programs?

V: Is the activity one that is required or specified by, or carries out, the provisions of NERC's Rules of Procedure that have been approved by the Commission as "Electric Reliability Organization Rules" (defined in 18 C.F.R. §39.1) pursuant to FPA §215(f)? (The applicable Rules of Procedure provision for these major activities are §600 and 900.)

VI: Is the activity necessary or appropriate for the supervision and oversight of Regional Entities in the performance of their delegated responsibilities in accordance with FPA §215, 18 C.F.R. Part 39, the Commission-approved delegation agreement between NERC and the Regional Entity, the NERC ROP, and applicable provisions of Commission orders?

IX. Administrative Services 2017 Major Activities

NERC's Administrative Services Departments are Technical Committees and Member Forums (for which no funding for activities is budgeted for 2017), General and Administrative, Legal and Regulatory, Information Technology ("IT"), Human Resources, and Finance and Accounting. The major activities of these departments are described at pages 70-81 of the 2017 Business Plan and Budget.

General and Administrative includes the administration and general management of the organization, the Chief Executive Officer and Chief Reliability Officer, Board of Trustees fees and expenses, communications, external affairs and government relations, and office rent.

Legal and Regulatory provides legal support to the organization, including to management, and the Reliability Standards, Compliance Analysis, Certification and Registration, Reliability Risk Management, RASA, and Performance Analysis Programs, as well as general corporate legal support in areas including antitrust, corporate, commercial, insurance, contracts, employment, real estate, copyright, tax, and other areas.

IT supports NERC's computing, Internet, database and electronic data storage and maintenance, and telecommunications and internet needs, programs, applications and infrastructure, including management of the development and implementation of new software applications and infrastructure. The capital expenditure projects managed by IT represent capital expenditures in hardware, software and associated tools to securely gather, store, analyze and maintain data across the ERO Enterprise to support the ERO's operations, as well as necessary acquisition and replacement of computers, servers and related devices. IT's 2017 activities are focused on NERC infrastructure and support; improving, enhancing, or replacing existing functionalities; ERO Enterprise infrastructure and support; and ERO Enterprise new functionalities, including the document management program.

Human Resources manages all of NERC's human resources functions, including staffing, benefits administration, employee relations, performance and compensation management, succession planning, and training and development. Human Resources also obtains compensation studies, effectiveness studies, and other compensation consulting services when needed.

Finance and Accounting manages all finance and accounting functions of NERC, including employee payroll, 401(k), 457(b) and 457(f) plans, travel and expense reporting, monthly financial reporting, sales and use tax, meetings and events planning and services, insurance, internal audit, facilities management, development of the annual business plan and budget, and the ERO risk management

framework.

The major activities of NERC's Administrative Services Departments satisfy the following criteria:

I.A: Is the activity necessary or appropriate for Reliability Standards development projects pursuant to the NERC Rules of Procedure (ROP)?

II.A: Is the activity necessary or appropriate for the identification and registration of users, owners, and operators of the Bulk Power System that are required to comply with Requirements of Reliability Standards applicable to the reliability functions for which they are registered?

II.D: Is the activity necessary or appropriate for conducting, participating in or overseeing compliance monitoring and enforcement activities pursuant to the NERC ROP and (through the Regional Entities) the Commission-approved delegation agreements?

III.C: Is the activity necessary or appropriate for investigating, analyzing, evaluating, and disseminating information concerning, the causes of major events and off-normal occurrences, and/or providing coordination assistance, technical expertise and other assistance to users, owners, and operators of the Bulk Power System in connection with Bulk Power System major events and off-normal occurrences, but not real-time operational control of the Bulk Power System?

V: Is the activity one that is required or specified by, or carries out, the provisions of NERC's Rules of Procedure that have been approved by the Commission as "Electric Reliability Organization Rules" (defined in 18 C.F.R. §39.1) pursuant to FPA §215(f)? (The applicable Rules of Procedure provision for the major activities of Finance and Accounting is §1100.)

VI: Is the activity necessary or appropriate for the supervision and oversight of Regional Entities in the performance of their delegated responsibilities in accordance with FPA §215, 18 C.F.R. Part 39, the Commission-approved delegation agreement between NERC and the Regional Entity, the NERC ROP, and the applicable provisions of Commission orders.

IX. Is the activity necessary or appropriate for NERC and Regional Entity committees, subcommittees and working groups engaged in activities encompassed by one or more of the other criteria?

XI: Is the activity a governance or administrative/overhead function, activity or service necessary or appropriate for the activities encompassed by the other criteria and, in general, necessary and appropriate to operate a functioning organization?

NERC WRITTEN CRITERIA FOR DETERMINING WHETHER AN ACTIVITY IS ELIGIBLE TO BE FUNDED UNDER SECTION 215 OF THE FEDERAL POWER ACT

For purposes of internal management approval of a proposed new activity or group of related activities ("major activity"), the proposed activity or major activity must be shown to fall within at least one of the criteria listed below. When sub-criteria are listed below a roman numeral numbered major criterion, the proposed activity should be a positive answer to at least one of the sub-criteria. Conversely, an activity that falls under a sub-criterion should pertain to the subject matter of the major criterion.

NERC's annual business plan and budget will describe how each major activity falls within one or more of the criteria listed below. If the major activity is substantially the same as a major activity that was shown to fall within the criteria in a previous year's business plan and budget, the current year's business plan and budget can refer to the prior year business plan and budget.

A determination that an activity falls within FPA §215 does not necessarily mean that NERC will propose or undertake such activity. The determination of whether an activity falling under FPA §215 should or will be undertaken in a given budget year will be addressed in the context of the applicable business plan and budget and will include opportunities for stakeholder input.

The criteria listed below are not necessarily each distinct from the others. An activity or major activity may fall within more than one of the criteria listed below.

I. Is the activity necessary or appropriate for the development of Reliability Standards?

   A. Is the activity necessary or appropriate for Reliability Standards development projects pursuant to the NERC Rules of Procedure (ROP)?

   B. Is the activity necessary or appropriate for providing guidance and assistance to Regional Entities in carrying out Regional Reliability Standards development activities?

   C. Is the activity necessary or appropriate for information gathering, collection and analysis activities to obtain information for Reliability Standards development, including for purposes of identifying areas in which new Reliability Standards could be developed, existing Reliability Standards could be revised, or existing Reliability Standards could be eliminated, such as:

      1. Measuring reliability performance – past, present and future; publishing or disseminating the results of such measurements; analyzing the results of such measurements; identifying and analyzing risks to reliability of the Bulk Power System[46] based on such measurements; and/or identifying approaches to mitigating or eliminating such risks?

      2. Monitoring, event analysis and investigation of Bulk Power System major events, off-normal occurrences and near miss events?

   D. Is the activity necessary or appropriate for the provision of training and education concerning Reliability Standards development processes, procedures and topics for/to (i) NERC personnel, (ii) Regional Entity personnel, and (iii) industry personnel?

II. Is the activity necessary or appropriate for the monitoring and enforcement of compliance with Reliability Standards?

   A. Is the activity necessary or appropriate for the identification and registration of users, owners, and operators of the Bulk Power System that are required to comply with

[46] This document uses the term "Bulk Power System" because that is the term defined and used in FPA §215. NERC recognizes that a different term, "Bulk Electric System," is used to define the current reach of reliability standards. Reliability Standards.

Requirements of Reliability Standards applicable to the reliability functions for which they are registered?

B. Is the activity necessary or appropriate for the Certification of Reliability Coordinators, Transmission Operators and Balancing Authorities as having the requisite personnel, qualifications and facilities and equipment needed to perform these reliability functions in accordance with the applicable Requirements of Reliability Standards?

C. Is the activity necessary or appropriate for the Certification of system operating personnel as qualified to carry out the duties and responsibilities of their positions in accordance with the Requirements of applicable Reliability Standards?[47]

D. Is the activity necessary or appropriate for conducting, participating in or overseeing compliance monitoring and enforcement activities pursuant to the NERC ROP and (through the Regional Entities) the Commission-approved delegation agreements?

E. Is the activity necessary or appropriate for information gathering, collection and analysis activities to obtain information to monitor and enforce compliance with Reliability Standards, including evaluating the effectiveness of current compliance monitoring and enforcement processes, the need for new or revised compliance monitoring and enforcement processes, and the need for new or different means of training and education on compliance with Reliability Standards, such as:

1. Measuring reliability performance – past, present and future; publishing or disseminating the results of such measurements; analyzing the results of such measurements; identifying and analyzing risks to reliability of the Bulk Power System based on such measurements; and/or identifying approaches to mitigating or eliminating such risks?

2. Monitoring, event analysis and investigation of Bulk Power System major events, off-normal occurrences, and near miss events?

F. Is the activity necessary or appropriate for the provision of training, education and dissemination of information for/to (i) NERC personnel, (ii) Regional Entity personnel, and (iii) industry personnel with respect to compliance monitoring and enforcement topics and topics concerning reliability risks identified through compliance monitoring and enforcement activities, such as:

1. Requirements of Reliability Standards, including how to comply and how to demonstrate compliance? This includes development of guidance and interpretation documents.

2. Compliance monitoring and enforcement processes, including how to conduct them, how to participate in them, and the expectations for the processes? This includes development of guidance documents.

3. Disseminating, through workshops, webinars, Advisories, Recommendations, Essential Actions, and other publications; "lessons learned" information on compliance concerns and reliability risks obtained through compliance monitoring and enforcement activities; monitoring and investigation of Bulk Power System major events, off-normal occurrences and near miss events, and other Bulk Power System monitoring activities?

[47] Although certification of system operating personnel is an activity falling within the scope of, and eligible to be funded pursuant to, FPA §215, NERC strives to fully fund the costs of this activity through fees charged to participants.

4. Registered Entity internal processes for compliance with Reliability Standards, such as development, implementation and maintenance of internal reliability compliance programs?

G. Is the activity necessary or appropriate for the development and provision of tools and services that are useful for the provision of adequate reliability, because they relate specifically to compliance with existing Reliability Standards and they proactively help avert Reliability Standard violations and Bulk Power System disturbances?

III. Is the activity necessary or appropriate for conducting and disseminating periodic assessments of the reliability of the Bulk Power System or monitoring the reliability of the Bulk Power System?

A. Is the activity necessary or appropriate for the preparation or dissemination of long-term, seasonal, and special assessments of the reliability and adequacy of the Bulk Power System?

B. Is the activity necessary or appropriate for measuring reliability performance – past, present and future; publishing or disseminating the results of such measurements; analyzing the results of such measurements; identifying and analyzing risks to reliability of the Bulk Power System based on such measurements; and/or identifying approaches to mitigating or eliminating such risks?

C. Is the activity necessary or appropriate for investigating, analyzing, evaluating, and disseminating information concerning, the causes of major events and off-normal occurrences, and/or providing coordination assistance, technical expertise and other assistance to users, owners, and operators of the Bulk Power System in connection with Bulk Power System major events and off-normal occurrences, but not real-time operational control of the Bulk Power System?

D. Is the activity necessary or appropriate for awareness of circumstances on the Bulk Power System and to contribute to understanding risks to reliability?

E. Is the activity necessary or appropriate for gathering, analyzing and sharing with and among industry and government participants, information regarding the physical or cyber security of the Bulk Power System?

F. Is the activity necessary or appropriate for the development and dissemination of Advisories/Recommendations/Essential Actions regarding lessons learned and potential reliability risks to users, owners, and operators of the Bulk Power System?

G. Is the activity necessary or appropriate for data collection and analysis of information regarding Bulk Power System reliability matters mandated by the Commission?

IV. Is the activity one that was required or directed by a Commission order issued pursuant to FPA §215? Justification of an activity as a FPA §215 activity based on this category must reference the particular Commission order and directive.

V. Is the activity one that is required or specified by, or carries out, the provisions of NERC's Rules of Procedure that have been approved by the Commission as "Electric Reliability Organization Rules" (defined in 18 C.F.R. §39.1) pursuant to FPA §215(f)?

VI. Is the activity necessary or appropriate for the supervision and oversight of Regional Entities in the performance of their delegated responsibilities in accordance with FPA §215, 18 C.F.R. Part 39, the Commission-approved delegation agreement between NERC and the Regional Entity, the NERC ROP, and applicable provisions of Commission orders?

VII. Is the activity necessary or appropriate to maintain NERC's certification as the Electric Reliability Organization? This Criterion includes conducting periodic assessments of NERC's and the Regional Entities' performance as the Electric Reliability Organization as required by 18 C.F.R. §39.3(c).

VIII. Does the activity respond to or is it necessary or appropriate for audits of NERC and the Regional Entities conducted by the Commission?

IX. Is the activity necessary or appropriate for NERC and Regional Entity committees, subcommittees and working groups engaged in activities encompassed by one or more of the other criteria?

X. Is the activity necessary or appropriate for the analysis and evaluation of activities encompassed by one or more of the other criteria for the purpose of identifying means of performing the activities more effectively and efficiently?

XI. Is the activity a governance or administrative/overhead function, activity or service necessary or appropriate for the activities encompassed by the other criteria and, in general, necessary and appropriate to operate a functioning organization? (Should NERC perform any non-FPA §215 activities, the costs of governance and administrative/overhead functions must be appropriately allocated.)
NERC's current governance and administrative/overhead functions are carried out in the following program areas:

A. Technical Committees and Members' Forum Programs

B. General and administrative (includes, but is not limited to, executive, board of trustees, communications, government affairs, and facilities and related services).

C. Legal and Regulatory.

D. Information Technology

E. Human Resources

F. Accounting and Finance.

The following matters are excluded from the scope of FPA §215 activities. While a list of non-FPA §215 activities would be infinite, the following excluded matters are listed here because they are expressly referred to in FPA §215, the Commission's ERO regulations and/or a Commission order issued pursuant to FPA §215:

A. Developing or enforcing requirements to enlarge Bulk Power System facilities, or to construct new transmission capacity or generation capacity, or requirements for adequacy or safety of electric facilities or services.

B. Activities entailing Real-time operational control of the Bulk Power System.

C. Activities pertaining to facilities used in the local distribution of electricity.

Exhibit C – Contractor and Consulting Costs

Program	Consultants & Contracts	2016 BUDGET	2017 BUDGET	2017 vs 2016 Budget
Compliance Assurance	Reliability Assurance Initiative	200,000	50,000	(150,000)
	Compliance Assurance	**200,000**	**50,000**	**(150,000)**
Event Analysis	Reliability Assurance Project Support	56,000	-	(56,000)
	Event Analysis	**56,000**	**-**	**(56,000)**
Compliance Investigation, Registration and Certification	Risk-based Registration Phase 2 - Consulting Support	50,000	-	(50,000)
	Compliance Investigation, Registration and Certification	**50,000**	**-**	**(50,000)**
Reliability Assessments and System Analysis	Reliability affects of GMD	100,000	100,000	-
	Reliability consulting support	475,000	425,000	(50,000)
	Reliability Assessments and System Analysis	**575,000**	**525,000**	**(50,000)**
Performance Analysis	GADS/TADS/DADS/SED	509,039	528,082	19,044
	Performance Analysis	**509,039**	**528,082**	**19,044**
Situation Awareness	Reliability Tools	576,300	619,150	42,850
	Secure Alerting System	141,000	96,000	(45,000)
	SAFNR - Phase II	438,200	505,700	67,500
	Communication network (NERCnet replacement)	55,975	75,000	19,025
	Situation Awareness	**1,211,475**	**1,295,850**	**84,375**
E-ISAC	**GridEx Support**	-	383,000	383,000
	Program-Level Capabilities	499,500	353,000	(146,500)
	Software & Services	113,285	113,285	-
	Events & Outreach	50,550	50,550	-
	CRISP	5,888,594	5,888,594	-
	E-ISAC and CRISP	**6,551,929**	**6,788,429**	**236,500**
System Operator Certification	System Operator Testing Expenses	59,400	62,000	2,600
	System Operator Examination Development	69,000	70,000	1,000
	Database Development	24,000	-	(24,000)
	Database Maintenance	25,200	37,800	12,600
	SOCCED Database Improvement Project (funded from Working Capital generated from fees in excess of expenses)	150,000	50,000	(100,000)
	System Operator Certification	**327,600**	**219,800**	**(107,800)**
Training and Education	Continuing Education Program	133,200	145,800	12,600
	Web-based course hosting (Learning Management System)	55,000	55,000	-
	Enhanced Platform	-	-	-
	Course development and Support - External Training	125,000	125,000	-
	NERC Staff Technical Training	35,000	35,000	-
	Continuing Education, Training & Education	**348,200**	**360,800**	**12,600**
General & Administrative	Communications support	15,000	15,000	-
	ERO Effectiveness Survey	80,000	-	(80,000)
	General & Administrative	**95,000**	**15,000**	**(80,000)**
IT	ERO Development & Support	988,671	1,261,787	273,116
	ERO Data Analysis	100,000	200,000	100,000
	Applications Enhancements, Consulting and Help Desk Support	1,006,000	851,000	(155,000)
	Information Technology	**2,094,671**	**2,312,787**	**218,116**
HR	Training and Development	325,000	350,000	25,000
	Compensation Consulting	100,000	100,000	-
	Employee, industry and Board Surveys	50,000	50,000	-
	HR Consulting Services	75,000	75,000	-
	Human Resources	**550,000**	**575,000**	**25,000**
Finance	Internal Controls and Outside Auditor Consulting Support	200,000	300,000	100,000
	Finance and Accounting Support	97,000	157,000	60,000
	Finance and Accounting	**297,000**	**457,000**	**160,000**
	TOTAL CONSULTANTS AND CONTRACTS	**12,865,914**	**13,127,749**	**261,835**

Exhibit D – Capital Financing

The company successfully closed on its capital financing program on January 10, 2014. The interest rate is floating and equal to LIBOR plus 275 basis points, which yielded a rate of 2.91% at closing.[48] The total size of the non-revolving credit facility is $7.5M, with the total authorized borrowings each year limited to the amount approved by the Board of Trustees and FERC in that year's business plan and budget for IT hardware and the costs of developing software applications. Consistent with the terms of the loan documentation and its Board and FERC-approved 2014 budget, the company made an initial draw of $1.265M at the end of January 2014 related to 2013 expenditures. The company recorded new capital investments of approximately $1.65M in 2013 related to the development of software applications and IT hardware,[49] a portion of which was financed with the proceeds from this initial draw. This borrowing is amortized over three years, commencing January 31, 2014, and can be prepaid without penalty. A balance of $1.416M was available for draw during 2014, which was also consistent with NERC's 2014 approved budget. However, the company had sufficient funds available to pay for budgeted capital improvements without having to draw on this credit facility. A balance of $1.9M was available for draw during 2015, consistent with NERC's 2015 approved budget. New capital investments of $1.85M were financed with draws late in 2015 and early 2016. These new borrowings are also being amortized over three years, beginning January, 2016 and April, 2016.

The company is in discussions with the lender about renewing this facility for another three year term. The facility will continue to be used as a funding source for larger projects that primarily benefit the ERO Enterprise. The total amount of the credit facility will likely decline from the current $7.5M level since NERC expects a decline in applicable projects (likely $5-6M limit). NERC expects the terms and conditions of this renewed facility to be similar to those in the current agreement.

As further discussed in the Introduction and Executive Summary and in Section A, General and Administrative and set forth in the table below, NERC has a 2017 proposed capital budget of approximately $4.4M, $1.45M of which it is proposing to finance.

NERC CAPITAL BUDGET	2016	2017
ERO Application Development	$ 1,500,000	$ 700,000
E-ISAC Portal Improvement		1,000,000
Document Management Program	465,000	335,000
Hardware (Storage, servers, laptops)	955,000	991,000
Other Equipment	535,000	885,000
Disaster Recovery	200,000	150,000
NERC Software licenses	256,000	311,000
Total Capital Budget	**$ 3,911,000**	**$ 4,372,000**

The table below sets forth the projected principal and interest repayment schedule for the amounts financed to date and the additional planned $1.45M in capital financing.[50] This projection assumes an average interest rate of 3.5% over the term of the financing, which is consistent with the 2014, 2015 and 2016 budgets. Management is

[48] The interest rate at closing was lower than projected for purposes of the 2014 budget. As detailed in the company's approved *2014 Business Plan and Budget*, any difference between actual and budgeted interest expense for draws under the credit facility becomes an addition to the company's Unforeseen Contingency Operating Reserve balance.

[49] This capital investment amount is exclusive of approximately $640k in expenses which were incurred in 2013 in the development of the Events Information Data System application and expensed rather than capitalized, as further discussed in the company's Q1 2014 budget variance report (item 2.c.i) presented to the NERC Finance and Audit Committee.

[50] The company plans to finance $700k in ERO Application Development costs and $750k of the $1M E-ISAC Portal Development project.

recommending that 3.5% continue to be used given the potential for interest rate increases during 2016. The actual interest rate and interest rate expense will be reflected in the quarterly budget to actual variance reports the company posts on its website, reviews in open session with the NERC Finance and Audit Committee, and files with FERC. Any variations in interest expense will be captured and reported as a contribution to operating reserves, the expenditures of which are subject to the terms of the company's Working Capital and Operating Reserve Policy.

	YEAR-END OUTSTANDING DEBT BALANCE					
	2014	**2015**	**2016**	**2017**	**2018**	**2019**
2013 Expenditure / Closed 2014	$ 878,472	$ 456,806	$ 35,139	$ -	$ -	
2015 Budgeted	-	-	1,234,547	617,274	-	
2016 Budgeted	-	-	1,500,000	666,667	333,333	
2017 Projected	-	-	-	1,450,000	966,667	483,333
2018 Projected	-	-	-	-	1,800,000	1,200,000
Total Outstanding Balance	$ 878,472	$ 456,806	$2,769,686	$2,733,940	$3,100,000	$1,683,333

	ANNUAL PAYMENTS FOR DEBT SERVICE					
	2014	**2015**	**2016**	**2017**	**2018**	**2019**
2013 Expenditure / Closed 2014	$ 386,528	$ 421,667	$ 421,667	$ 35,139	$ -	
2015 Budgeted	-	-	617,274	617,274	617,274	
2016 Budgeted	-	-	-	333,333	333,333	333,333
2017 Projected	-	-	-	-	483,333	483,333
2018 Projected	-	-	-	-	-	600,000
Interest Expense	29,367	24,826	56,529	56,725	61,170	72,203
Total Principal and Interest Costs	$ 415,895	$ 446,493	$1,095,469	$1,042,471	$1,495,110	$1,488,869

Exhibit E – Working Capital and Operating Reserve Amounts

In September 2015, the Commission approved NERC's proposed amendments to the Company's Working Capital and Operating Reserve Policy, which had been approved by the NERC Board. A number of changes were made to the policy, including:

- Clarifying the definition of working capital to represent funding needed for cash flow purposes due to the timing of the receipt of funds and the payment of expenses.
- Creating four separate categories of operating reserves:
    1. A new subcategory of reserves entitled **Future Obligation Reserve** for funds that are being held to satisfy obligations that will be settled in a future year. Examples include leases, certain contracts, and credit agreements. These reserves were previously included within the definition of working capital, but are more accurately classified as a form of operating reserve.
    2. Continuation of a separate category of reserves for the Operator Certification Program called the **Operator Certification Reserve**.
    3. Elimination of the Known and Unforeseen Contingency categories of operating reserves and creating a single category of contingency reserves called the **Operating Contingency Reserve**.
    4. Creation of a separate category of reserves for CRISP called the **CRISP Reserve**.

Working Capital

Based on its 2016 cash flow projection and taking into account the historic manner in which NERC's assessments have been billed and paid, NERC does not anticipate needing access to working capital in 2017 to meet monthly cash flow needs. While individual reserve categories are increasing and decreasing based on operating needs and uses, the budget in total does not reflect additional net funding for reserves. In the unlikely event NERC experiences a temporary cash flow shortage, it has the ability to either request authorization from the Finance and Audit Committee and Board of Trustees to temporarily access operating contingency reserve funds, or draw on its $4M line of credit, as long as NERC is in compliance with the covenants under its bank credit agreement.

Operating Reserves

Total operating reserves are budgeted to be $6.1M at December 31, 2017 among all four categories, or $5.6M excluding the $500,000 CRISP Reserve. The Future Obligation Reserve is budgeted to be $2.6M and is primarily funds held to offset future liabilities under lease agreements for the Atlanta and Washington, DC, offices. System Operator Certification Reserves are budgeted at $714k and the Operating Contingency Reserve is budgeted for $2.2M. The CRISP Reserve (budgeted at $500k) is held pursuant to the terms of the Master Services Agreement between NERC and participating utilities, which calls for a separate third-party funded reserve established to fund certain contingencies in connection with CRISP.

In addition to the foregoing reserves, the amended policy also provides for an **Assessment Stabilization Reserve.** The goal of the Assessment Stabilization Reserve is to mitigate assessment volatility and have percentage changes in annual assessments track, within a reasonable band, percentage changes in the company's total annual budget, with the total budget reflecting prudent fiscal discipline and good stewardship of resources. Assessment stabilization funds will be used when available to help stabilize assessments and mitigate year-to-year swings in assessments. Those swings primarily result from the year-to-year variations in collections of penalty funds to be applied to offset assessments, but could also result from other factors like surplus funds available from a prior period, the need to replenish the Operating Contingency Reserve, or significant but relatively short-term operating or capital spending needs. Subject to Board and Commission approval, NERC proposes (1) to place the $500,000 of Penalties collected in the 12 months ended June 30, 2016, into the Assessment Stabilization Reserve, resulting in a balance on January 1, 2017 of approximately $2.7M, funded entirely by penalties, and (2) to use $1.1M of the

balance at January 1, 2017 to offset 2017 U.S. assessments. An additional penalty is expected in May 2017 for $500,000. This penalty results from a settlement reached through WECC related to the September 2011 blackout. NERC's proposals will result in a balance remaining in the Assessment Stabilization Reserve of $1,671,000 at December 31, 2017 (or $2,167,000 taking into account the $500,000 penalty scheduled to be received in May 2017 and assuming that after June 30, 2016, no additional Penalties are received and placed into the Assessment Stabilization Reserve). This balance will be available to be used, with Board and Commission approval, to mitigate annual assessment increases in future years.

Exhibit F – E-ISAC Portal Improvement

Why Information Sharing Matters

- Cyber and physical threats do not come from machines
  - They originate in the minds of human adversaries
  - Cyberspace is just a tool for the adversary
  - So are explosives, weapons, truck bombs, bolt cutters and social engineering
- Threat actors typically don't work alone
  - Strategic "existential" threats (the ones we should worry about) are typified by large, well connected organizations
  - These groups routinely share, collaborate, and analyze situations freely, using every tool available including the Internet and technology
- Our challenge is to be better at sharing, collaborating, and analyzing than our adversaries
  - We need better tools than those they have

Membership Involvement

- ESCC Strategic Review (July 2015) called for continued improvement to the portal
  - Recommended the use of STIX/TAXII standards
  - Recommended the exploration of ways to automate information sharing and analysis
- Updated portal launched in September 2015
- GridEx III Simulation Deck portal used in November 2015 offered several new ideas about grid security visualization
- MEC's OTT working group developed a comprehensive list of portal improvement recommendations

Portal to Platform Timeline

- 2016:
  - Fix existing portal bugs and issues identified by the E-ISAC and members
  - Build incremental improvements to meet short-term recommendations
  - Conduct scoping/discovery effort for transition to platform
  - Validate requirements with membership
  - Launch new “look and feel” for existing portal
- 2017:
  - Install new hardware
  - Launch new platform
  - Build incremental improvements to meet long-term requirements
  - Ongoing membership feedback

Expected Benefits

- Dramatic improvement to information sharing
  - Human to human via text, discussion, document, photo, etc. sharing
  - Machine to machine via built in STIX/TAXII compatibility
- Rapid response to emerging critical situations
  - Situational awareness of physical and cyber events
  - Coordination within and external to the Electricity Sector
- Extendable as new technologies emerge
  - Easy integration with mobile technologies
  - Designed to be modular and adaptable to future capability requirements
- Increased trust in the E-ISAC
  - Will result in increased sharing and collaboration

Portal vs Platform

- Existing portal characteristics
  - Designed for a specific audience with a specific purpose
  - Static content with infrequent changes
  - No user control over look/feel of layout
  - Not designed for high levels of interaction
  - Limited search capability
- Proposed platform characteristics
  - Designed for a wide audience with different needs
  - Highly customizable by users
  - Extendable to accommodate new technologies
  - Visual and graphical orientation (vs text-based)
  - Robust search, filtering, and native language queries of datasets
  - Server-side computation and analytics

Project Management

- Total proposed 2017 budget of $1 million
- Two parallel projects
  - Near-term quick fixes and user interface improvements
  - Long-term movement to a platform with significant changes
- Project implementation managed by NERC CTO and the ERO IT PMO
- Disciplined approach used to successfully manage and implement other recent IT projects
- Ongoing MEC engagement
- Scope will be managed within approved budget

MEC Feedback

- MEC briefed at June 15, 2016 face-to-face meeting
- Bill Spence (Chairman, President and CEO, PPL Corporation, Inc. and Chair, E-ISAC Member Executive Committee) briefed EEI's Executive Committee on June 14, 2016 and provided positive feedback
- The MEC provided NERC with written comments in support of the proposed funding on or before June 30, 2016.