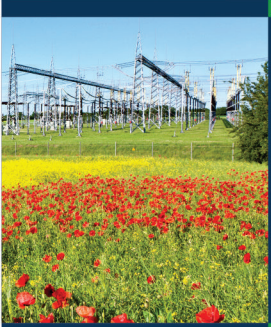


Federal Energy Regulatory Commission



Fiscal Year Congressional Performance Budget Request
2020

Fiscal Year Annual Performance Report
2018



Chairman Neil Chatterjee



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MISSION

ECONOMICALLY EFFICIENT, SAFE, RELIABLE, AND SECURE ENERGY FOR CONSUMERS

Assist consumers in obtaining economically efficient, safe, reliable, and secure energy services at a reasonable cost through appropriate regulatory and market means, and collaborative efforts.

GOAL 1

ENSURE JUST AND REASONABLE RATES, TERMS , AND CONDITIONS

Ensure that rates, terms and conditions of jurisdictional energy services are just, reasonable and not unduly discriminatory or preferential.

GOAL 2

PROMOTE SAFE, RELIABLE, AND SECURE INFRASTRUCTURE

Promote the development of safe, reliable, and secure infrastructure that serves the public interest.

GOAL 3

MISSION SUPPORT THROUGH ORGANIZATIONAL EXCELLENCE

Achieve organizational excellence by using resources effectively, adequately equipping FERC employees for success, and executing responsive and transparent processes that strengthen public trust.

Proposed Appropriation Language

For necessary expenses of the Federal Energy Regulatory Commission to carry out the provisions of the Department of Energy Organization Act (42 U.S.C. 7101 et seq.), including services as authorized by 5 U.S.C. 3109, the hire of passenger motor vehicles, and official reception and representation expenses not to exceed \$3,000, \$382,000,000, to remain available until expended: Provided, That notwithstanding any other provision of law, not to exceed \$382,000,000 of revenues from fees and annual charges, and other services and collections in fiscal year 2020 shall be retained and used for necessary expenses in this account, and shall be remain available until expended: Provided further, That the sum herein appropriated from the general fund shall be reduced as revenues are received during fiscal year 2020 so as to result in a final fiscal year 2020 appropriation from the general fund estimated at not more than \$0.

Full Cost Recovery

The Federal Energy Regulatory Commission (FERC or the Commission) recovers the full cost of its operations through annual charges and filing fees assessed on the industries it regulates as authorized by the Federal Power Act (FPA) and the Omnibus Budget Reconciliation Act of 1986. The Commission deposits this revenue into the Treasury as a direct offset to its appropriation, resulting in a net appropriation of zero.

| | FY 2018 Actual | FY 2019 Estimate | FY 2020 Request |
|-------------------------------|-------------------|---------------------|--------------------|
| Appropriation | \$367,600,000 | \$369,900,000 | \$382,000,000 |
| Offsetting Collections | (\$367,600,000) | (\$369,900,000) | (\$382,000,000) |
| Net Appropriation | \$ - | \$ - | \$ - |

Note: numbers may not add up due to rounding.

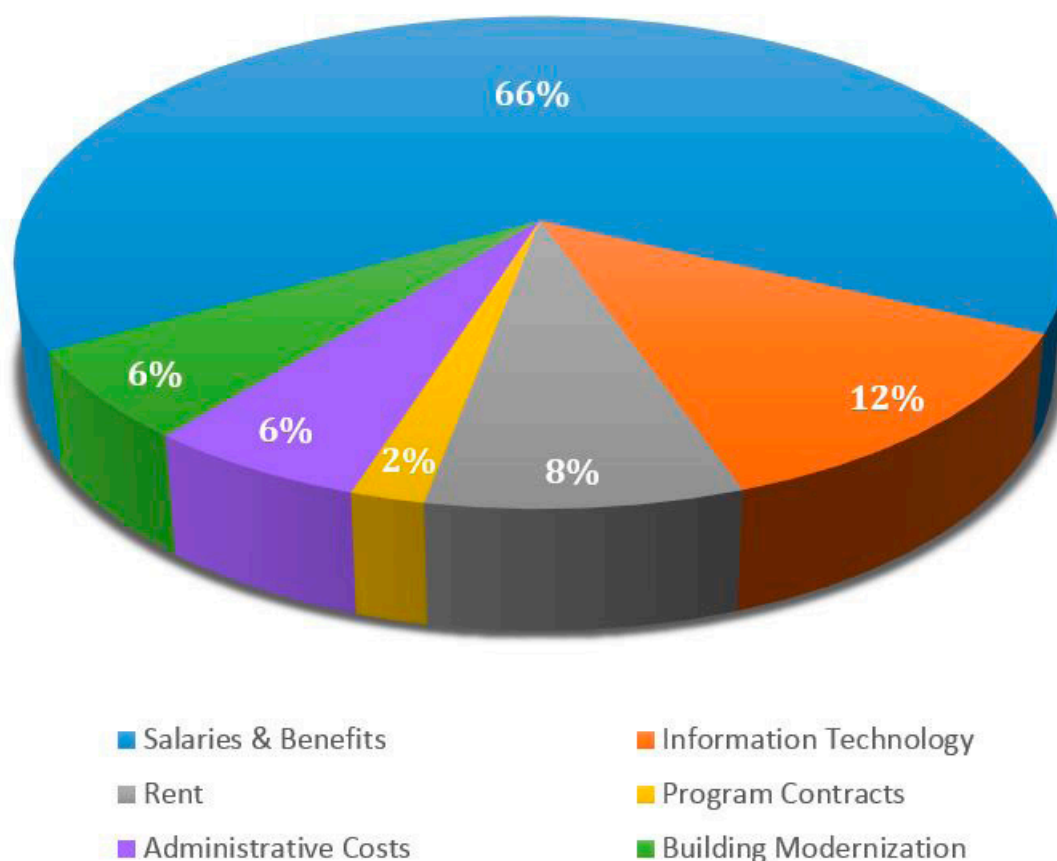
FY 2020 Request Summary

The Federal Energy Regulatory Commission (FERC or the Commission) requests an appropriation of \$382,000,000 and 1,465 full-time equivalents (FTEs) to execute its mission in fiscal year (FY) 2020. This funding request is an increase of \$12,100,000, or about 3 percent, above the FY 2019 Congressional Budget Request. The Commission's full funding requirement to meet base operating requirements and continuation of the headquarters building modernization effort is \$386,500,000. However, the Commission will apply \$4,500,000 of prior year unobligated budget authority to offset funding requirements in FY 2020.

The Commission allocated over two thirds of its budget to directly cover the compensation costs of its employees on an annual basis. The Commission's request reflects the necessary resources to support normal increases in salaries and benefits in FY 2020 but assumes no pay raise. The request also provides continued funding for program contracts associated with statutorily required hydropower environmental workload, natural gas pipeline construction oversight, liquefied natural gas (LNG) construction inspections, and expert witness contractor assistance in the Commission's enforcement program. This request provides resources to support the Commission's infrastructure review process for non-federal hydropower and natural gas pipeline facilities. Both programs have involved environmental review processes which include substantial efforts at public outreach and stakeholder engagement, as well as compliance oversight. Furthermore, the Commission's request includes an increased investment in new information technology projects that will further advance priority information technology (IT) initiatives and yield increased operational efficiency. These projects will modernize core mission and support systems, expand existing data analytics and visualization capabilities, and improve the agency's cyber security posture. Through the successful execution of these projects, the Commission expects to maintain a cost-effective suite of IT products and services that will meet its near-term mission needs and provide a scalable platform to support future needs beyond 2020, while meeting applicable security mandates.

This budget request includes continued funding for a multi-year building consolidation project. The Commission's request includes \$22.9 million in FY 2020 which supports the construction of two floors at FERC headquarters. The Commission is required to execute this modernization project pursuant to current GSA and OMB space use policy. Congress approved a Prospectus for the ten-year lease option on the 888 First Street Building (FERC Headquarters). As part of the terms of the Prospectus, the Commission is required to consolidate within the FERC Headquarters building to reduce its overall space utilization by 12 percent, which would include relocating employees currently located at 1100 First Street back to FERC Headquarters. The new lease term commenced on September 30, 2015.

FY 2020 Request by Major Category



Comparison of FYs 2019 and 2020 by Major Category

| Major Category | FY 2019 Estimate | FY 2020 Request | Difference | Percent Change FY 2019 to FY 2020 |
|---|----------------------|----------------------|-----------------------|-----------------------------------|
| Salaries & Benefits | \$250,738,900 | \$253,437,400 | \$2,698,500 | 1.1% |
| Rent | 34,827,200 | 32,050,300 | (2,776,900) | -8.0% |
| Environmental and Program Contracts | 12,482,600 | 7,546,200 | (4,936,400) | -39.5% |
| Information Technology | 61,074,000 | 48,111,100 | (12,962,900) | -21.2% |
| Administrative (including Travel and Training) | 24,584,500 | 22,455,000 | (2,129,500) | -8.7% |
| Building Modernization | 15,400,000 | 22,900,000 | 7,500,000 | 48.7% |
| Subtotals | \$399,107,200 | \$386,500,000 | \$(12,607,200) | -3.2% |
| Application of Prior Year (PY) Budget Authority | (29,207,200) | (4,500,000) | | |
| Totals | \$369,900,000 | \$382,000,000 | \$12,100,000 | 3.3% |

Note: numbers may not add up due to rounding.

Resources by Strategic Goals and Objectives

| Strategic Goal and Objectives (Dollars in thousands) | | FY 2018 Actual | FY 2019 Estimate | FY 2020 Request | Percent Change FY 2019 to FY 2020 |
|---|---------|-------------------|---------------------|--------------------|--|
| Goal 1 | Funding | 170,569 | 183,912 | 178,547 | -2.9% |
| | FTE | 664 | 685 | 685 | 0.0% |
| Objective 1.1 | | 128,895 | 141,348 | 138,191 | -2.2% |
| | | 510 | 532 | 532 | 0.0% |
| Objective 1.2 | | 41,674 | 42,564 | 40,356 | -5.2% |
| | | 154 | 154 | 154 | 0.0% |
| Goal 2 | Funding | 127,605 | 140,639 | 133,844 | -4.8% |
| | FTE | 477 | 492 | 492 | 0.0% |
| Objective 2.1 | | 68,051 | 76,054 | 70,636 | -7.1% |
| | | 248 | 256 | 256 | 0.0% |
| Objective 2.2 | | 59,554 | 64,585 | 63,208 | -2.1% |
| | | 229 | 236 | 236 | 0.0% |
| Goal 3 | Funding | 69,986 | 74,556 | 74,109 | -0.6% |
| | FTE | 287 | 288 | 288 | 0.0% |
| Objective 3.1 | | 52,849 | 56,768 | 56,073 | -1.2% |
| | | 217 | 219 | 219 | 0.0% |
| Objective 3.2 | | 17,137 | 17,788 | 18,036 | 1.4% |
| | | 70 | 69 | 69 | 0.0% |
| TOTAL | Funding | 368,160 | 399,107 | 386,500 | -3.2% |
| | FTE | 1,428 | 1,465 | 1,465 | 0.0% |
| Application of PY Budget Authority | | - | (29,207) | (4,500) | |
| TOTAL | Funding | 368,160 | 369,900 | 382,000 | 3.3% |
| | FTE | 1,428 | 1,465 | 1,465 | 0.0% |

Note: numbers may not add up due to rounding.

Resources by Industry

| Regulated Industry (Dollars in thousands) | | FY 2018 Actual | FY 2019 Estimate | FY 2020 Request | Percentage Change Between FY 2019 and FY 2020 |
|--|---------|-------------------|---------------------|--------------------|---|
| Electric | Funding | \$207,972 | \$224,107 | \$219,168 | -2.2% |
| | FTEs | 813 | 832 | 832 | 0.0% |
| Hydro | Funding | 81,642 | 87,181 | 84,565 | -3.0% |
| | FTEs | 313 | 322 | 322 | 0.0% |
| Natural Gas | Funding | 68,282 | 76,624 | 71,786 | -6.3% |
| | FTEs | 261 | 269 | 269 | 0.0% |
| Oil | Funding | 10,265 | 11,195 | 10,982 | -1.9% |
| | FTEs | 41 | 42 | 42 | 0.0% |
| Subtotal | | \$368,160 | \$399,107 | \$386,500 | -3.2% |
| Application of PY Budget Authority | | - | (29,207) | (4,500) | |
| Total | Funding | \$368,160 | \$369,900 | \$382,000 | 3.3% |
| | FTEs | 1,428 | 1,465 | 1,465 | 0.0% |

Note: numbers may not add up due to rounding.

Object Class Summary

| OBJECT CLASS SUMMARY (Dollars in thousands) | | | | |
|--|---|-------------------|---------------------|--------------------|
| | | FY 2018 Actual | FY 2019 Estimate | FY 2020 Request |
| 11.9 | Personnel Compensation | \$181,411 | \$188,421 | \$190,927 |
| 12.1 | Benefits | 59,191 | 62,318 | 62,510 |
| 13.0 | Benefits for Former Personnel | 43 | - | - |
| | Sub Total, Personnel Compensation & Benefits | \$240,645 | \$250,739 | \$253,437 |
| 21.0 | Travel and Transportation of Persons | 3,082 | 3,518 | 3,545 |
| 22.0 | Transportation of Things | 21 | 1 | 1 |
| 23.1 | Rental Payments to GSA | 33,310 | 34,827 | 32,050 |
| 23.2 | Rental Payments to Others | 972 | 834 | 867 |
| 23.3 | Communications, Utilities & Misc. Charges | 1,954 | 2,365 | 2,191 |
| 24.0 | Printing and Reproduction | 2,268 | 2,186 | 2,235 |
| 25.1 | Advisory and Assistance | 9,924 | 16,893 | 9,845 |
| 25.2 | Non-Federal | 12,368 | 15,151 | 13,779 |
| 25.3 | Federal | 1,731 | 1,968 | 1,861 |
| 25.4 | Operation & Maintenance of Facilities | 1,870 | 1,962 | 2,013 |
| 25.7 | Operation & Maintenance of Equipment | 33,983 | 34,964 | 33,833 |
| 26.0 | Supplies and Materials | 3,654 | 4,329 | 4,567 |
| 31.0 | Equipment | 4,333 | 20,519 | 10,047 |
| 32.0 | Leasehold Improvements | 18,032 | 8,642 | 16,155 |
| 41.0 | Grants, Subsidies & Contributions | 15 | 50 | 50 |
| 42.0 | Insurance Claims and Indemnities | - | 160 | 25 |
| | TOTAL, OBLIGATIONS | \$368,160 | \$399,107 | \$386,500 |
| | Application of PY Budget Authority | - | (29,207) | (4,500) |
| | GROSS BUDGET AUTHORITY | 368,160 | 369,900 | 382,000 |
| | Offsetting Receipts | (368,160) | (369,900) | (382,000) |
| | NET BUDGET AUTHORITY | \$- | \$- | \$- |

Note: numbers may not add up due to rounding.

Verification and Validation of Performance Information

The Commission collects, uses and reports performance data on its activities to inform decision making, track progress and meet statutory reporting requirements. The Commission believes the capacity and skill to measure performance is critical to maintaining operational effectiveness. FERC developed a process to verify and validate performance measure data to support the development of this capability, establish internal controls over performance information, and ensure the completeness and reliability of FERC performance measure data.

FERC's FY 2018 Annual Performance Report has been combined with its FY 2020 Congressional Performance Budget Request, which continues to serve as its Annual Performance Plan, to provide more complete and meaningful data on past performance and the Commission's efforts to improve performance in the coming fiscal years. The report is organized by the current strategic goals and objectives established in the FY 2018 – 2022 Strategic Plan.

The performance measures included in Appendix B of this report are aligned to the previous, FYs 2014 – 2018 strategic plan. This is the final reporting year for these measures.

FERC ensures that the performance data presented in this report meets the verification and validation criteria of being valid, complete, consistent, accurate, and timely based upon the following assessment steps:

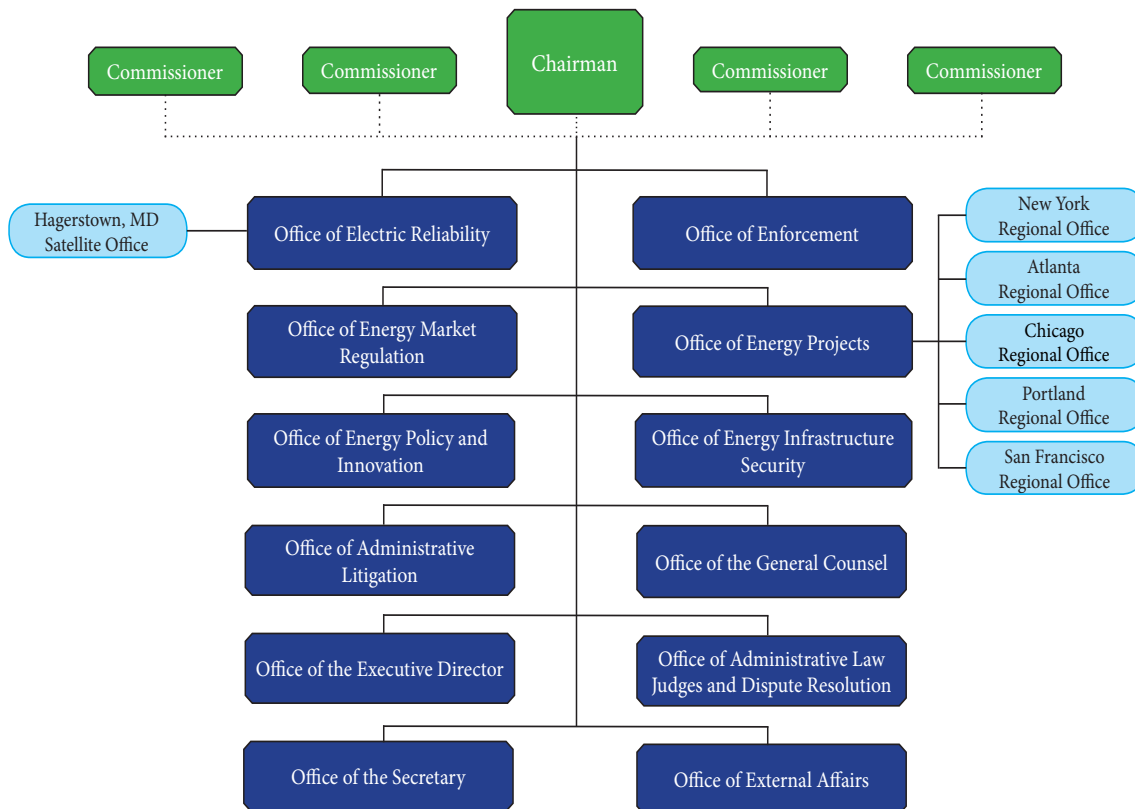
1. The Commission applies logic modeling to develop performance measures through its strategic planning process.
2. FERC's program offices document procedure manuals to ensure confidence in the reported performance data. The procedure manuals define:
 - purpose and interpretation of the measure
 - external factors that may impact the measure
 - data collection and storage procedures
 - data quality controls
 - reporting requirements
3. Performance results are calculated and reported according to established procedures, and approved by the office director.
4. Selected performance measures may undergo an independent Verification and Validation Assessment during the four year performance reporting cycle. As needed, an Independent Review Team will prepare a report evaluating the selected performance measure based on the five verification and validation criteria.

About the Federal Energy Regulatory Commission

Overview

The Federal Energy Regulatory Commission (FERC or the Commission) is an independent agency that regulates the transmission and wholesale sale of electricity and natural gas in interstate commerce, and regulates the transportation of oil by pipelines in interstate commerce. FERC also reviews proposals to build interstate natural gas pipelines, natural gas storage projects, and liquefied natural gas (LNG) terminals, and FERC licenses non-federal hydropower projects. Congress assigned these responsibilities to FERC in various laws enacted over nearly 100 years, such as the Federal Power Act, Public Utility Regulatory Policies Act, Natural Gas Act, and Interstate Commerce Act. More recently, as part of the Energy Policy Act of 2005, Congress gave FERC additional responsibilities to protect the reliability and cybersecurity of the bulk-power system through the establishment and enforcement of mandatory reliability standards, as well as additional authority to enforce FERC regulatory requirements through the imposition of civil penalties and other means.

FERC is composed of up to five commissioners who are appointed by the President of the United States with the advice and consent of the Senate. Commissioners serve staggered five-year terms and have an equal vote on the orders through which FERC acts. The President appoints one of the commissioners to be the chairman of FERC, the administrative head of the agency. FERC is a bipartisan body; no more than three commissioners may be of the same political party. To carry out its authorities, the Commission has approximately 1,500 staff that are organized into 12 offices¹. Commission staff are located primarily in the Washington D.C. region, with several field offices across the country.



¹ Office descriptions can be found at <http://www.ferc.gov/about/offices.asp>.

FERC's Responsibilities²

The Commission has many responsibilities under various statutes. There are, however, many energy-related areas that are outside FERC's jurisdictional responsibilities and fall to other federal agencies or state public utility commissions. Examples include:

| What FERC does | What FERC does not do |
|--|--|
| Regulates the transmission and wholesale sales of electricity in interstate commerce | Regulation of retail electricity and natural gas sales to consumers |
| Reviews certain mergers and acquisitions and corporate transactions by electricity companies | Approval for the physical construction of electric generation facilities |
| Regulates the transportation and sale of natural gas for resale in interstate commerce | Regulation of many activities of state and municipal power systems, federal power marketing agencies, and most rural electric cooperatives |
| Regulates the transportation of oil by pipeline in interstate commerce | Regulation of nuclear power plants |
| Approves the siting and abandonment of interstate natural gas pipelines and storage facilities | Issuance of state water quality certificates |
| Reviews siting applications for electric transmission projects under limited circumstances | Oversight for the construction of oil pipelines |
| Ensures the safe operation and reliability of proposed and operating LNG terminals | Abandonment of service as related to oil facilities |
| Licenses and inspects private, municipal and state hydroelectric projects | Mergers and acquisitions as related to natural gas and oil companies |
| Protects the reliability and security of the high-voltage interstate transmission system through mandatory reliability standards | Responsibility for pipeline safety or for pipeline transportation on or across the Outer Continental Shelf |
| Monitors and investigates energy markets | Regulation of local distribution of electricity and natural gas |
| Enforces FERC regulatory requirements through imposition of civil penalties and other means | Development and operation of natural gas vehicles |
| Oversees environmental matters related to natural gas and hydroelectricity projects and other matters | Reliability problems related to local distribution facilities |
| Administers accounting and financial reporting regulations and conduct of regulated companies | Tree trimming near local distribution power lines in residential neighborhoods |

² For more information regarding FERC's history and regulatory authorities, please refer to Appendix A.

Commission Offices

The **Office of Energy Projects** (OEP) fosters economic and environmental benefits for the nation through the approval and oversight of hydroelectric, natural gas pipeline, natural gas storage, and liquefied natural gas projects that are in the public interest.

The **Office of Energy Market Regulation** (OEMR) analyzes filings submitted by electric utilities and natural gas and oil pipelines to ensure that rates, terms, and conditions of service are just and reasonable and not unduly discriminatory or preferential, as well as electric utility corporate filings, including requests for approval of mergers and acquisitions. OEMR also analyzes filings submitted by the Electric Reliability Organization (ERO) dealing with its budget, rules of procedure, and bylaws.

The **Office of Enforcement** (OE) protects customers by conducting oversight of energy markets, identifying and remedying market problems in a timely manner, assuring compliance with rules and regulations, and detecting and investigating market manipulation.

The **Office of Energy Policy and Innovation** (OEPI) provides leadership in the development and formulation of policies and regulations for the Commission's consideration. OEPI focuses on potential reforms that advance the goals of the Commission, including policies to ensure the efficient development and use of transmission, generation, storage and emerging technologies, and wholesale and interstate markets generally. OEPI undertakes policy and quantitative analysis and conducts outreach with a range of entities.

The **Office of Electric Reliability** (OER) oversees the development and review of mandatory reliability and security standards by the ERO and ensures compliance with the approved mandatory standards by the users, owners, and operators of the bulk power system.

The **Office of Energy Infrastructure Security** (OEIS), working with other governmental agencies, industry, and other stakeholders, identifies and seeks comprehensive solutions to potential threats to FERC-jurisdictional infrastructure from cyber and physical attacks, including geomagnetic disturbance and electromagnetic pulse events.

The **Office of the General Counsel** (OGC) provides sound and timely legal counsel to the Commission and Commission staff by assisting in the development of Commission orders, rulemakings, and other decisions; representing the Commission before the courts; advising the Commission and Commission staff on legal matters; and advising other government agencies, regulated entities, and the public on matters within the Commission's jurisdiction.

The **Office of Administrative Litigation** (OAL) advances the public interest in cases set for hearing by providing expert and independent legal and technical analyses; building complete evidentiary records through the presentation of expert testimony and cross examination of witnesses at hearings; briefing issues to law judges and the Commission; and negotiating settlements that achieve prompt rate reductions for energy consumers, provide rate certainty, and conserve Commission resources.

The **Office of Administrative Law Judges and Dispute Resolution** (OALJDR) develops an evidentiary record in contested cases as directed by the Commission. Through trial-type hearings and the issuance of an initial decision, OALJDR ensures that the rights of all parties are preserved. In addition, the Administrative Law Judges act as settlement judges, mediators, and arbitrators to help resolve contested matters. OALJDR also assists interested parties engaged in disputes to achieve consensual decision making through services such as mediation, negotiation, conciliation, arbitration, and facilitation with the Dispute Resolution Service.

The **Office of the Secretary** (OSEC) serves as the focal point through which all filings are made for all proceedings before the Commission, notices of proceedings are given, and from which all official actions are issued by the Commission. OSEC promulgates and publishes all orders, rules, and regulations of the Commission and prescribes the issuance date for these unless such date is prescribed by the Commission.

The **Office of External Affairs** (OEA) communicates with the public, other governmental entities and industry on behalf of the Commission. OEA provides informational and educational services to Congress; federal, state and local governments; the news media and the public; regulated industries; and consumer and public interest groups. This office also is the Commission's liaison with foreign governments.

The **Office of the Executive Director** (OED) provides administrative support services to the Commission including human resources, procurement, information technology, organizational management, financial, logistics and security.

The Chairman and Commissioners



Chairman Neil Chatterjee

Sworn In: August 8, 2017

Term Expires: June 30, 2021



**Commissioner
Cheryl A. LaFleur**

Sworn In: July 29, 2014

Term Expires: June 30, 2019



**Commissioner
Bernard L. McNamee**

Sworn In: December 11, 2018

Term Expires: June 30, 2020



**Commissioner
Richard Glick**

Sworn In: November 29, 2017

Term Expires: June 30, 2022



**Commissioner
Vacant**

Sworn In:

Term Expires:

GOAL 1

ENSURE JUST AND REASONABLE RATES, TERMS , AND CONDITIONS

Ensure that rates, terms and conditions of jurisdictional energy services are just, reasonable and not unduly discriminatory or preferential.

The nation's security and economic prosperity depend on maintaining economically efficient, safe, reliable, and secure energy services at a reasonable cost for consumers. FERC's regulation ensures just and reasonable rates, terms, and conditions for jurisdictional services.

In carrying out its regulatory role, FERC uses a range of ratemaking activities as well as market oversight and enforcement. FERC's jurisdiction includes the wholesale sales and transmission of electricity and natural gas in interstate commerce, as well as the transportation of oil by pipeline in interstate commerce. FERC's ratemaking activities leverage both regulatory and market means, and involve the issuance of orders and the establishment of rules and policies. Its enforcement activities include both increasing compliance and detecting and deterring market manipulation.

Through these efforts, FERC ensures that consumers have reasonable access to the services they need and that service providers are appropriately compensated.

| Strategic Goal and Objectives (Dollars in thousands) | | FY 2018 Actual | FY 2019 Estimate | FY 2020 Request | Percent Change FY 2019 to FY 2020 |
|---|---------|-------------------|---------------------|--------------------|--|
| Objective 1.1 | FTE | 510 | 532 | 532 | 0.0% |
| | Funding | 128,895 | 141,349 | 138,191 | -2.2% |
| | Program | 88,551 | 93,929 | 94,585 | 0.7% |
| | Support | 40,344 | 47,420 | 43,606 | -8.0% |
| Objective 1.2 | FTE | 154 | 154 | 154 | 0.0% |
| | Funding | 41,674 | 42,564 | 40,356 | -5.2% |
| | Program | 29,534 | 28,852 | 27,746 | -3.8% |
| | Support | 12,140 | 13,713 | 12,610 | -8.0% |
| Goal 1 Subtotal | FTE | 664 | 685 | 685 | 0.0% |
| | Funding | 170,569 | 183,913 | 178,547 | -2.9% |
| Application of PY Budget Authority | | - | (13,459) | (2,079) | |
| Goal 1 Total | Funding | 170,569 | 170,454 | 176,468 | 3.5% |

Note: numbers may not add up due to rounding.

Objective

1.1

ESTABLISH COMMISSION RULES AND POLICIES THAT WILL RESULT IN JUST, REASONABLE, AND NOT UNDULY DISCRIMINATORY OR PREFERENTIAL RATES, TERMS, AND CONDITIONS OF JURISDICTIONAL SERVICE

Electricity, natural gas, and oil are vital resources that fuel economic activity and help to meet the nation's energy needs. Through the Federal Power Act, Public Utility Regulatory Policies Act, Natural Gas Act, and Interstate Commerce Act, among other laws, Congress gave FERC authority to regulate the transmission and wholesale sale of electricity and natural gas in interstate commerce, and to regulate the transportation of oil by pipeline in interstate commerce. The Commission's responsibility in the exercise of this authority is to ensure that rates, terms, and conditions for wholesale sales and transmission of electric energy and natural gas in interstate commerce, as well as for transportation of oil by pipeline in interstate commerce, are just and reasonable and not unduly discriminatory or preferential.

FERC carries out this responsibility by issuing orders and establishing rules and policies that continually balance two important interests: protecting energy consumers against excessive rates, and providing an opportunity for regulated entities to recover their costs and earn a reasonable return on their investments. FERC's orders, rules, and policies use both market and regulatory means to impact energy service provider practices. FERC leverages competitive market forces to promote efficiency for consumers where appropriate. When competitive market conditions do not exist or competitive forces are inadequate to protect consumers, FERC relies on traditional rate-setting authority and tools such as cost-of-service ratemaking.

In exercising its authority, FERC ensures that interested stakeholders have the opportunity to provide their views and that the Commission's ultimate decisions are adequately supported by the public record. Stakeholder engagement and transparency help FERC establish rules and policy that result in just, reasonable, and not unduly discriminatory or preferential rates, terms, and conditions.

SITUATIONAL ASSESSMENT

The Commission took specific actions to address strategic issues and opportunities described in the FY 18-22 Strategic Plan.

Situational Assessment Item 1: Changes in Energy Supply and Demand

Changes in both energy supply and demand are having an impact on the fuel mix of resources participating in wholesale electric markets, the dynamics of competitive markets, incentives for investment in infrastructure, and the security and resilience of the bulk-power system. These changes create new challenges and increase the complexity of maintaining just, reasonable, and not unduly discriminatory or preferential rates, terms, and conditions of jurisdictional service.

IMPLEMENTING THE STRATEGIC RESPONSE

The Commission will use its diverse resources to address this issue from multiple perspectives:

- Identify key services and products that contribute to meeting short-term and long-term consumer needs, including but not limited to reliability and the need for a secure and resilient bulk-power system, and ensure appropriate compensation for those services and products through just and reasonable rates.
- Perform analysis to consider compensation for necessary services and products that enhance bulk-power system reliability, security, and resilience and/or benefits consumers.
- Focus on removing barriers to technology that enhances

bulk-power system reliability, security, and resilience and/or benefits consumers by promoting market competitiveness.

- Explore whether evolving competitive opportunities warrant revision to the Commission's regulations implementing the Public Utility Regulatory Policies Act (PURPA) of 1978.
- Evaluate and revise, as appropriate, the current policies for the establishment of base return on equity in light of changes in market dynamics and court precedent.

The strategic response is still in the early stages of implementation. However, the Commission has taken several notable actions.

In January 2018, the Commission initiated a proceeding in Docket No. AD18-7-000 to evaluate the resilience of the bulk power system in the regions operated by RTOs/ISOs. The goal of the new proceeding is to: (1) develop a common understanding among the Commission, industry, and others of what resilience of the bulk power system means and requires; (2) understand how each RTO/ISO assesses resilience in its geographic footprint; and (3) use this information to evaluate



whether additional Commission action regarding resilience is appropriate at this time. The Commission directed RTOs/ISOs to respond to specific questions regarding: (1) a common understanding of resilience; (2) how RTOs/ISOs assess threats to resilience; and (3) how RTOs/ISOs mitigate threats to resilience. In addition to responses from RTOs/ISOs, the Commission permitted interested entities to submit reply comments. The Commission is currently evaluating the comments received in Docket No. AD18-7-000.

In February 2018, the Commission issued a final rule, Order No. 842, which requires newly interconnecting electric generators to install, maintain, and operate equipment capable of providing primary frequency response. FERC designed these changes to address the potential reliability impact of the evolving generation resource mix, and to ensure that the relevant provisions of the pro forma generator interconnection agreements are just, reasonable, and not unduly discriminatory or preferential. Transmission providers submitted compliance filings in May 2018. The Commission has been reviewing these filings and has processed almost all of them. Additionally, the Commission issued an order on rehearing requests of Order No. 842 in August 2018. Work in this proceeding will continue into FYs 2019 and 2020.

Also in February 2018, the Commission issued Order No. 841 to remove barriers to the participation of electric storage resources in the organized wholesale electric markets. The order requires each RTO and ISO to revise its tariff to establish a participation model consisting of market rules that facilitate the participation of electric storage resources in the RTO/ISO markets. RTOs and ISOs have submitted compliance filings. Rehearing is also pending on the rulemaking. Work is expected

to continue in FYs 2019 and 2020. The Commission is in the process of monitoring the implementation of this order and will track its progress and effectiveness through the strategic performance measure.

In Order No. 841, the Commission also stated its continued belief that removing unnecessary barriers to participation in RTO/ISO markets by distributed energy resource aggregations is important. However, the Commission stated that more information is needed with respect to those reforms. Thus, the Commission decided to continue that aspect of its rulemaking proceeding, which previously covered both issues, under a new Docket No. RM18-9-000. On April 10-11, 2018, the Commission held a technical conference to consider two broad sets of issues with respect to distributed energy resources. First, the Commission gathered additional information to determine what action to take on the distributed energy resource aggregation reforms proposed in the notice of proposed rulemaking proceeding. Second, the Commission sought to discuss more broadly the potential effects of distributed energy resources on the bulk power system. The Commission received comments on the technical conference on June 26, 2018, with related work expected to continue into FYs 2019 and 2020.

Under PURPA, the Commission implements regulations necessary to encourage cogeneration and small power production. The Commission's PURPA regulations, among other things, require utilities to purchase the output of cogenerators and small power production qualifying facilities at an appropriate rate, and establish the procedures by which cogenerators and small power production facilities can obtain qualifying facility status. In May 2018 Commission staff, at the direction of the Chairman, initiated a review of the Commission's PURPA regulations in light of changes to the electric industry since 1978,

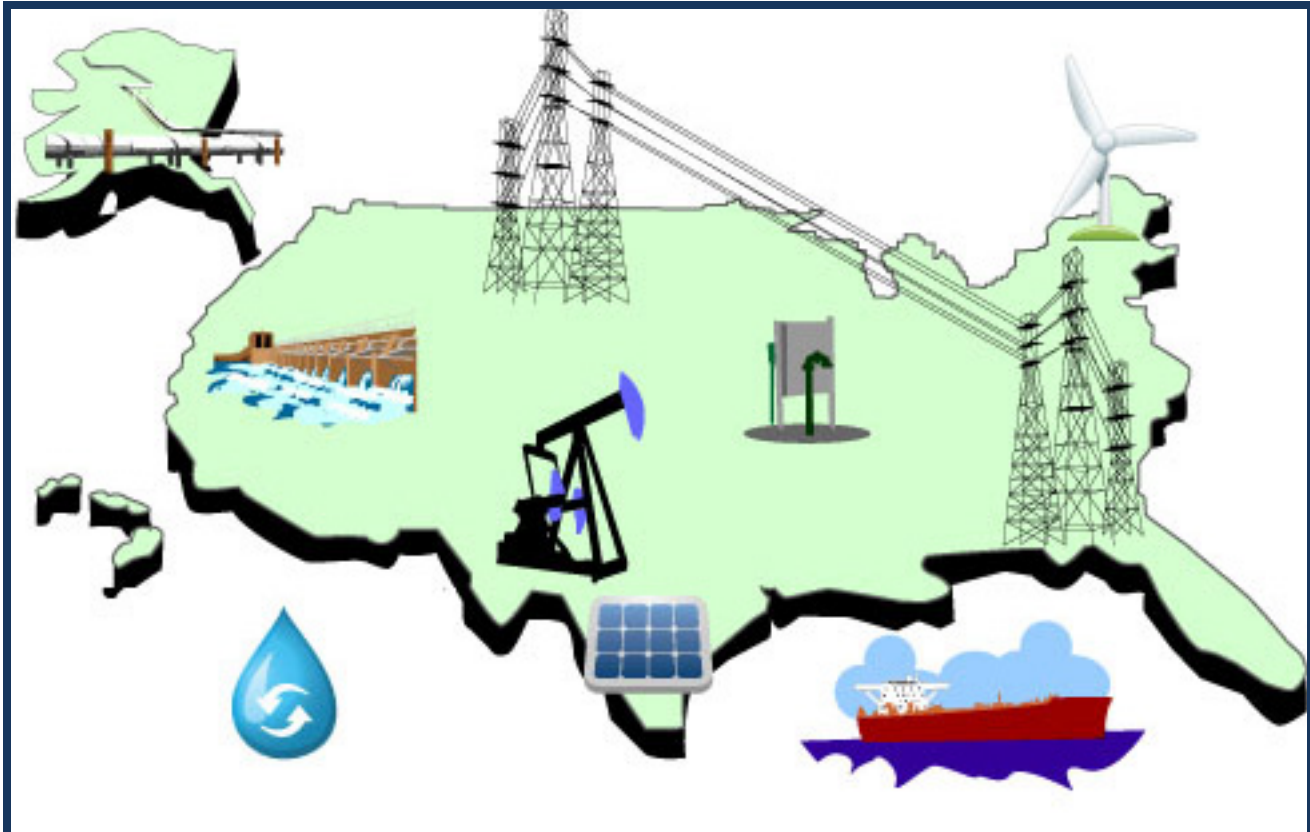
building on issues raised in a 2016 technical conference on PURPA (Docket No. AD16-16-000). Work on this proceeding will continue into FYs 2019 and 2020.

Commission-approved cost-of-service rates include a return on equity (ROE), which provides a just and reasonable return for equity investors. Historically, the Commission has relied on the Discounted Cash Flow methodology to determine the just and reasonable return on equity. In response to a 2017 remand from the U.S. Court of Appeals for the District of Columbia Circuit, the Commission has issued orders directing briefs suggesting that the return on equity for electric transmission facilities be determined by averaging the results of multiple models. The Commission also has announced that it will initiate a review of its ROE policy for electric transmission facilities. Related work will continue in FYs 2019 and 2020.

The direct impacts from all of these efforts will be seen on participants in the power industry, including new participants seeking entry into the markets. As the regulated entities comply with orders, FERC expects to see changes in electric market access by different technologies, a change in the incentives for market participants to provide key services and products, changes in infrastructure investment and reduced regulatory burdens.

MONITORING OF RISK FACTORS

A number of risk factors could impact the strategic response over the next two years. Jurisdictional challenges to FERC orders are always possible, potentially resulting in the delay of the implementation of FERC requirements. Changes in technology are progressing rapidly, potentially warranting further FERC action in order to ensure that new technologies have an opportunity to participate in FERC-jurisdictional markets. There are several factors that affect whether a new technology is seen as a viable enterprise. For example, an economic downturn could adversely affect the ability of resources to obtain financing and therefore impact their ability to enter the market. FERC expects that these factors will continue to be relevant over the next two years and will continue to take them into account while implementing its responsive actions.



CORE FUNCTIONS

In addition to addressing its strategic priorities, the Commission continued to perform its Core Functions and fulfill its responsibilities as a regulatory agency.

Core Function 1.1.1: Evaluate existing Commission rules and policies in light of emerging issues and changing circumstances to determine whether modification of such rules and policies is necessary or new rules or policies need to be developed.

RATE AND TARIFF RULES AND POLICIES

Market-Based Rate Rules. In accordance with Order No. 697, the Commission grants market-based rate authorization for wholesale sales of electric energy, capacity, and ancillary services by sellers that can demonstrate that they and their affiliates lack or have adequately mitigated horizontal and vertical market power. In FY 2016, the Commission issued a final rule, Order No. 816, to clarify and streamline certain aspects of its market-based rate program for wholesale sales of electric energy, capacity, and ancillary services.

The changes adopted in Order No. 816 will increase transparency while continuing to ensure that the market-based rate program results in rates that are just and reasonable. Among other things, the final rule streamlined the program by eliminating a requirement that market-based rate sellers file quarterly land acquisition reports for new generation sites. In FY 2016, the Commission addressed the requests for rehearing of the final rule by clarifying a number of requirements for market-based rate filings, such as those related to horizontal market power, wholesale market share and pivotal supplier indicative screens, and the asset appendices required of each market-based rate applicant.

In FY 2016, the Commission issued a Notice of Proposed Rulemaking addressing data collection for analytics and surveillance and market-based rate purposes, proposing that electric market-based rate sellers and entities trading virtual products or holding financial transmission rights provide certain affiliate and asset information to the Commission for collection in an electronic database. By collecting this information in a single database, the Commission would avoid duplication, minimize compliance burdens, and modernize data collection in both its electric market-based rate and its analytics and surveillance programs. Work is expected to continue into FYs 2019 and 2020.

Cost-Based Rates Rules – Oil Pipeline Rate Review. The Commission has established an indexing rate methodology that is designed to enable oil pipelines to recover costs by allowing pipelines to raise rates at the same pace as they are predicted to experience cost increases. This oil pipeline indexing rate methodology was established consistent with the Energy Policy Act of 1992. In FY 2016, the Commission completed its five year

review of the index and adopted a new index to establish annual rate ceiling levels for oil pipeline rate changes for the period July 1, 2016 through June 30, 2021.

In response to a petition for rulemaking filed by several oil pipeline shippers asking the Commission to require changes to the annual reports filed by oil pipeline companies, in FY 2015, Commission staff held a technical conference to discuss the issues raised in the petition. Subsequently, entities filed comments on the petition. In FY 2016 Commission staff met with stakeholders and reviewed comments on the proposal. In FY 2017, the Commission issued an Advanced Notice of Proposed Rulemaking seeking comment on proposed changes to the Commission's policies for evaluating oil pipeline's indexing rate methodology changes and proposed additions to oil pipeline reporting of data on FERC Form No. 6. Related work will continue in FYs 2019 and 2020.

In FY 2017, the Commission responded to a decision from the U.S. Court of Appeals for the District of Columbia Circuit by issuing a Notice of Inquiry regarding the potential for double recovery of tax costs for regulated entities with pass-through taxation, as well as proposed methods to resolve such concerns. Comments were filed in FY 2017. In response to the court remand and comments filed in response to the Notice of Inquiry, the Commission issued a revised policy statement on March 15, 2018, stating that it will generally not permit master limited partnerships to recover an income tax allowance in their cost of service rates. The revised policy statement explains that, while all partnerships seeking to recover an income tax allowance will need to address the double-recovery concern, the application of the revised policy to non-master limited partnerships will be addressed as those issues arise in subsequent proceedings. Related work will continue in FYs 2019 and 2020.

Open Access Transmission Tariff and Interconnection Rules. The Commission requires all public utilities that own, control, or operate facilities used for transmitting electric energy in interstate commerce to file open access non-discriminatory transmission tariffs. Open access transmission tariff reform contributes to the Commission's goal of removing impediments to competition in the wholesale bulk power marketplace

and bringing more efficient, lower cost power to the Nation's electricity consumers. The Commission will continue to evaluate and make improvements to the open access transmission tariff through FYs 2019 and 2020, as needed.

New Resource Interconnection Requirements. Open access transmission tariffs also include interconnection procedures and agreements. In 2003 and 2005, the Commission adopted, in Order Nos. 2003 and 2006, standard procedures for the interconnection of large and small generating facilities, including the development of standardized pro forma generator interconnection agreements and procedures. The Commission requires public utility transmission providers to use the standardized agreements and procedures to provide nondiscriminatory interconnection service. Because the agreements and procedures delineate the responsibilities and obligations of each party, the Commission may revise them to advance reforms by imposing certain requirements on newly interconnecting resources as a condition of interconnection. For instance, the Commission may advance such reforms to meet emerging system needs due to the changing resource mix. In this way, the Commission has made changes to the standardized agreements and procedures.

More recently, the Commission undertook a more comprehensive review of interconnection procedures and agreements, which resulted in a May 2016 technical conference. The technical conference focused on five interconnection topics: (1) the current state of generator interconnection queues; (2) transparency and timing in the generator interconnection process; (3) certainty in cost estimates and construction time; (4) other interconnection queue coordination and management issues; and (5) interconnection of electric storage resources. Subsequently, the Commission requested and received post-technical conference comments. Upon consideration of these issues and based in part on the input provided in comments and at the technical conference, the Commission proposed reforms to the interconnection processes in a notice of proposed rulemaking in December 2016 (Docket No. RM17-8-000).

After considering comments to the proposed rule, in April 2018, the Commission issued a final rule, Order No. 845, the Reform of Generator Interconnection Procedures and Agreements, adopting many of the proposed reforms. In this final rule, the Commission amended the interconnection procedures and agreements to improve certainty, promote more informed interconnection, and enhance interconnection processes. Rehearing on the final rule is pending. Compliance filings are due within ninety days after issuance of an order on addressing the pending requests for rehearing of Order No. 845. The Commission expects work on these interconnection issues to continue into FYs 2019 and 2020.

In April 2018, the Commission also held an additional technical conference in Docket No. AD18-8-000, addressing customer concerns related to the interaction between the transmission

provider that the customer plans to connect to and any neighboring transmission providers that may be affected by the proposed interconnection ("affected systems"). This issue was the subject of one of the topics discussed in the Notice of Proposed Rulemaking that led to Order No. 845. The Commission received comments related to this technical conference in May 2018. The Commission expects work on these interconnection issues to continue into FYs 2019 and 2020.

COMPETITIVE ELECTRICITY MARKETS

Electric Transmission Incentives. Section 219 of the FPA requires that the Commission develop rules to promote certain types of transmission investment through the availability of incentives. The Commission continues to evaluate individual requests for such incentives, which include enhanced return on equity, recovery of the cost of abandoned plant, and inclusion of Construction Work in Progress in rate base. The Commission also has announced that it will initiate a review of its incentives policy to more efficiently and effectively elicit needed new transmission facilities and consider current conditions. Related work will continue in FYs 2019 and 2020.

Capacity Markets. The Commission has approved forward-looking, auction-based capacity markets in the PJM Interconnection, L.L.C. (PJM) and ISO New England Inc. (ISO-NE) regions to allow load-serving entities to procure adequate capacity to meet the long-term electricity needs of consumers. In the New York Independent System Operator, Inc. (NYISO) region, the Commission has approved a monthly and a seasonal auction-based capacity market. The Midcontinent Independent System Operator, Inc. (MISO) also employs a Commission-approved auction mechanism to help meet resource adequacy requirements, and the Commission has approved an alternative approach for the California Independent System Operator Corporation (CAISO).

The Commission continually evaluates how the centralized capacity market rules and structures are supporting the procurement and retention of resources necessary to meet future reliability and operational needs established by the regions and the Commission approves auction parameters on a periodic basis for the different regions. The Commission also evaluates changes to capacity markets that accommodate the integration of new technologies and resources with different operating capabilities. While the capacity market mechanisms that the Commission approves often vary in design, all are intended to provide the proper price signals to, where appropriate, retain existing efficient resources and encourage the entry of new resources in areas where they are needed to meet electric supply needs. The Commission will continue evaluating and monitoring capacity market issues.

In the past few years, the Commission has held technical conferences and received comments to consider how RTOs/ISOs'

capacity market rules and structures were supporting the procurement and retention of resources necessary to meet future reliability and operational needs as well as the performance of resources during extreme weather. In May 2017, Commission staff convened a technical conference (Docket No. AD17-11-000) to discuss the interplay of state policy goals and wholesale energy and capacity markets and to examine the relative roles of markets operated by ISO-NE, NYISO, and PJM in shaping the quantity and composition of resources needed to cost-effectively meet future reliability and operational needs. Post-technical conference comments were received in June and July 2017, with work continuing into FYs 2019 and 2020. As discussed below, the Commission has also been addressing these issues in specific cases.

The Commission took steps to ensure that the rates in the wholesale capacity markets operated by ISO New England, Inc. (ISO-NE), NYISO, and PJM (i.e., the RTO for all or parts of 13 eastern and midwestern states and the District of Columbia) remain just, reasonable, and not unduly discriminatory or preferential in light of states' financial support for certain generating resources. In March 2018, the Commission approved revisions to ISO-NE's Forward Capacity Market to better incorporate state-sponsored resources into that market while limiting price impacts. In June 2018, in response to a proposal by PJM, the Commission instituted a paper hearing to evaluate options to better address the capacity market price effects of state resource preferences.

Price Formation in Energy Markets. The Commission reviews proposed market rules to ensure just and reasonable rates, terms, and conditions, and to maintain open access for diverse energy resources. In FYs 2019 and 2020, the Commission will continue to review wholesale energy and ancillary services market rules to ensure that they provide efficient price signals and incentivize performance for all eligible resources.

In June 2014, the Commission initiated a proceeding to evaluate issues regarding price formation in the organized wholesale electric energy and ancillary services markets operated by RTOs and ISOs. The goals of proper price formation are to: maximize market surplus for consumers and suppliers; provide correct incentives for market participants to follow commitment and dispatch instructions, make efficient investments in facilities and equipment, and maintain reliability; provide transparency so that market participants understand how prices reflect the actual marginal cost of serving load and the operational constraints of reliably operating the system; and ensure that all suppliers have an opportunity to recover their costs.

The Commission directed its staff to engage in outreach and convene workshops to explore improvements to market designs and operational practices of the organized markets. The Commission held three workshops in 2014 to further explore these issues. Following these workshops the Commission solicited additional stakeholder comments on various aspects of price formation in RTO and ISO markets that were discussed at the technical conferences. The Commission has undertak-



en several actions as described below, with work to complete these actions continuing in FYs 2019 and 2020.

As part of the price formation initiative, the Commission also issued an order directing reports in November 2015. In that order, the Commission directed each RTO/ISO to report on five areas that had the potential to improve price formation. Specifically, the reports focused on pricing of fast-start resources, commitments to manage multiple contingencies, look-ahead modeling, uplift cost allocation, and transparency. In addition to providing an update on the RTO/ISOs' current practices in the five areas, the reports have assisted the Commission in identifying best practices that in turn provide incentives to maintain reliability, to facilitate accurate and transparent pricing, to reduce uplift, and for market participants to operate consistently with dispatch signals. Further, the information has also assisted the Commission in understanding the reasons why each RTO/ISO has made its policy choices. Each RTO/ISO submitted its report in March 2016 and stakeholders commented on those reports in April 2016.

Settlement Intervals and Shortage Pricing. In June 2016, the Commission issued a final rule, Order No. 825, largely affirming its initial proposal and requiring that each RTO/ISO: (1) settle energy transactions in its real-time markets at the same time interval it dispatches energy; (2) settle operating reserves transactions in its real-time markets at the same time interval it prices operating reserves; and (3) settle intertie transactions at the same time interval it schedules intertie transactions. The final rule also required each RTO/ISO to trigger shortage pricing for any interval in which a shortage of energy or operating reserves is indicated during the pricing of resources for that interval. The Commission received compliance filings on this rule in January 2017. The Commission issued an order accepting the last compliance filing on July 17, 2018. Issuance of this order concludes actions on Order No. 825 filings.

Offer Caps. In November 2016, the Commission issued Order No. 831, a final rule revising the caps imposed on supply offers in day-ahead and real-time energy markets operated by RTOs/ISOs. Specifically, Order No. 831, requires that each RTO/ISO: (1) cap each resource's incremental energy offer at the higher of \$1,000/MWh or that resource's verified cost-based incremental energy offer, and (2) cap verified cost-based incremental energy offers at \$2,000/MWh when calculating locational marginal prices. The rule will ensure that (i) clearing prices better reflect the marginal cost of production, and (ii) a resource can recoup its short-run marginal costs when those costs exceed the offer cap.

The Commission issued an order on rehearing of this rule, Order No. 831-A, in November 2017. The Commission received compliance filings from five RTOs/ISOs in May 2017. CAISO was granted extensions to submit its compliance filing in April 2019. In FY 2018, the Commission continued to consider Or-

der No. 831 compliance filings. Work is expected to continue into FYs 2019 and 2020.

Fast-Start Pricing. In December 2016, the Commission issued a Notice of Proposed Rulemaking regarding fast-start resources. The Commission proposed that RTOs/ISOs incorporate the costs of fast-start resources into energy prices to better reflect the marginal cost of serving load when a fast-start resource is needed to serve load. The Commission received comments on the proposal in February 2017. In December 2017, the Commission withdrew the Notice of Proposed Rulemaking and instead initiated targeted Federal Power Act Section 206 investigations into the existing specific fast-start pricing practices of three RTOs/ISOs, PJM, NYISO and Southwest Power Pool, Inc. (SPP). These proceedings are pending. Related work will continue into FYs 2019 and 2020.

Uplift Cost Allocation and Transparency. In April 2018, the Commission issued the final rule, Order No. 844, Uplift Cost Allocation and Transparency in Markets Operated by Regional Transmission Organizations and Independent System Operators. This final rule required organized markets to post certain reports to provide transparency to actions, and related payments, that are needed to meet system needs but that are not reflected in prices. This final rule also withdrew an earlier proposal from the Commission on uplift cost allocation. The Commission received compliance filings on the final rule by September 2018 with related work continuing in FYs 2019 and potentially, FY 2020.

Ancillary Services. Ancillary services are necessary for the reliable and efficient transmission of electric power. These services, as defined in Order No. 888, include: Scheduling, System Control and Dispatch; Reactive Supply and Voltage Control from Generation Sources; Regulation and Frequency Response; and Energy Imbalance. As the energy mix changes due to a number of factors, including renewable energy portfolio requirements, there is a growing need for ancillary services to support grid functions and the integration of intermittent resources. Work related to ancillary services will continue into FYs 2019 and 2020.

Energy Imbalance Markets. In FY 2014, the Commission approved CAISO's implementation of an Energy Imbalance Market (EIM) allowing neighboring balancing area authorities in the western states to participate in the imbalance energy portion of CAISO's real-time market. The Commission continues to work with CAISO and the Energy Imbalance Market participants to address problems as they arise, and to approve appropriate market design improvements and tariff revisions to address identified deficiencies. As of 2015, the following market participants are actively participating in the EIM energy market: PacifiCorp, NV Energy, Puget Sound Energy, Arizona Public Service Company, Portland General Electric Company, Idaho Power Company, and Powerex Corporation. Seattle City

Light, Salt River Project, the Balancing Authority of Northern California (on the behalf of the Sacramento Municipal Utility District), and the Los Angeles Department of Water and Power all entered into implementation agreements with CAISO to join the EIM and have or are expected to file tariff provisions with the Commission to facilitate their participation. The Balancing Authority of Northern California (for the Sacramento Municipal Utility District) is scheduled to commence EIM operations in 2019, while Salt River Project, Los Angeles Department of Water and Power, and Seattle City Light are scheduled to commence EIM operations in 2020 and 2021 respectively. Additionally, NorthWestern Energy and Public Service Company of New Mexico (pending state commission approval) are scheduled to commence EIM operations in 2021. The Commission will continue to monitor the implementation, performance, and integration of existing and new balancing authority areas participating in the Energy Imbalance Markets as well as any enhancements CAISO proposes to its current Energy Imbalance Market design and processes in FYs 2019 and 2020.

MARKET EFFICIENCY & COORDINATION

Electric Transmission Planning. Although ownership of the interstate transmission grid is highly disaggregated, with more than 500 owners, transmission planning must be considered not only on a local basis, but also on a regional basis. To ensure that needed transmission is developed with the interests of all stakeholders in mind, the Commission requires that all public

utility transmission providers establish and participate in open and transparent regional transmission planning processes. These processes aim to improve the coordination of transmission planning among utilities and to support the development of an efficient transmission system, facilitating competitive markets by reducing barriers to trade between markets and among regions.

Following an extensive rulemaking process, the Commission issued Order No. 1000 in July 2011, Order No. 1000-A in May 2012, and Order No. 1000-B in October 2012. This rulemaking was designed to correct deficiencies in transmission planning processes and to ensure that Commission-jurisdictional transmission services are provided at just and reasonable rates and on a basis that is just and reasonable and not unduly discriminatory or preferential.

During FY 2013 through FY 2018, the Commission issued orders addressing all the initial and subsequent transmission planning regions' Order No. 1000 regional compliance filings, as well as all the initial and subsequent Order No. 1000 inter-regional compliance filings. The Order No. 1000 compliance process was completed with the Commission issuing the last compliance order in June 2018.

During FY 2015, staff developed a range of objective and standardized measures of various characteristics of the electric system and its performance to assess the effectiveness of the Commission's policies in achieving its goals regarding transmission investment, and to inform potential policy revisions going forward. Staff considered a range of potentially relevant metrics in three broad categories: (1) metrics designed to evaluate key goals of Order No. 1000; (2) metrics designed to indicate whether appropriate levels of transmission infrastructure exist in a particular region; and (3) metrics designed to permit analysis of the impact of Commission policy changes by comparing key values before and after these changes take place. In March 2016, staff released a report and presented the initial results of these metrics and in October 2017 staff released an updated report. In FY 2018, staff continued to refine the metrics and data used to calculate the metrics. Staff expects this work to continue in FYs 2019 and 2020.

In addition, in June 2016, the Commission held a technical conference to explore issues related to the competitive transmission development processes, including but not limited to, the use of cost containment provisions, the relationship of competitive transmission development to transmission incentives, and other ratemaking issues as well as issues relating to interregional transmission coordination, regional transmission planning, and other transmission development issues (Docket No. AD16-18-000). The Commission requested and received post-technical conference comments. The Commission has continued this work and expects it to continue into FYs 2019 and 2020.



Barriers to Efficient Trading Between Markets. The Commission seeks to identify and remove barriers to efficient trading between regional markets to ensure that trades result in just and reasonable rates. To this end, the Commission in several proceedings has considered issues related to seams between organized wholesale energy markets.

As a result of the Commission's monitoring and encouragement over the last few years, PJM and MISO have developed, and the Commission has accepted, solutions to specific problems. In April 2016, the Commission issued an order approving a proposal to implement Coordinated Transaction Scheduling between MISO and PJM. MISO and PJM agreed to define a common interface that would be used to calculate prices for interchange transactions. This has resulted in both MISO and PJM using the same methodology to price energy imported into their respective RTOs. Previously, MISO and PJM had been using different methodologies to price imported energy, resulting in a variety of market inefficiencies. Currently, the Commission continues to review information concerning issues such as firm flow entitlement freeze date, pseudo-ties, and overlapping congestion charges to understand what, if any, additional steps the Commission could take to improve the efficiency of operations at the PJM/MISO seam. Since November 2017, the Commission has issued several orders regarding pseudo-tie resources in the PJM and MISO regions. In addition, the Commission continues to review other proceedings related to challenges with the administration and coordination of pseudo-tie resources such as modeling, congestion management, congestion charges associated with pseudo-ties, pro forma pseudo-tie agreements, and planning and operation of pseudo-ties in the PJM/MISO balancing authority areas.

The Commission also considered the seam between MISO and SPP in several proceedings. In FY 2016, the Commission accepted an offer of settlement that resolved a long-standing dispute between MISO and SPP over such issues. In FY 2018, the Commission and the North American Electric Reliability Corporation (NERC) initiated a joint inquiry to assess the extreme cold weather event that occurred along the seam between MISO and SPP in January 2018. The inquiry will focus on identifying the causes of, and any contributing factors to, the event, and will identify any appropriate recommendations for improving operations under similar conditions.

The Commission will continue to seek to identify and address barriers to efficient trade between markets as appropriate during FYs 2019 and 2020.

Gas-Electric Coordination. Due to historically low natural gas prices, environmental considerations, and other factors, the electric industry has increasingly utilized natural gas as a fuel for generation. Recognizing this trend, the Commission has been exploring the interdependencies of the electric and natural gas industries.

After conducting extensive public outreach and building on prior work, FERC has undertaken efforts that have facilitated greater gas-electric coordination and greater situational awareness on the part of the operators of the bulk power system, in turn promoting more reliable operation of that system. In FY 2017, NAESB filed Version 3.1 of business practice standards adopted by the Wholesale Gas Quadrant applicable to natural gas pipelines in place of the currently incorporated Version 3.0. The revised standards require a common means of communication and common business practices to limit miscommunication for participants engaged in the sale of electric energy at wholesale and the transportation of natural gas. In August 2018, the Commission issued a Notice of Proposed Rulemaking proposing to amend its regulations to incorporate by reference, with certain enumerated exceptions, Version 3.1 of the NAESB business practice standards applicable to natural gas pipelines in place of the currently incorporated version (Version 3.0). The Commission issued a final rule, Order No. 587-Y, in November 2018.

An increased dependence on natural gas for electric generation in several regions has necessitated discussions about different regions' efforts in ensuring adequate and reliable power supply during winter. In addition to its earlier work, the Commission hosted its fourth annual discussion in October 2018, where it heard from all the RTOs and ISOs about their work in improving their system operations and the performance of their markets in preparation for the upcoming winter.

The Commission continues to assess issues, conduct outreach, and evaluate proposals designed to improve coordination and efficiency between the natural gas and electric power industries. This work is expected to continue into FYs 2019 and 2020.

ANALYSIS AND EVALUATION OF MARKETS AND OTHER INITIATIVES

Analysis and Outreach. The Commission regularly evaluates the energy markets and interstate grid to improve economic efficiency, system operations, and reliability in light of emerging challenges in the electric and natural gas industries. This evaluation entails examining energy market rules: to ensure adequate compensation for resources responding to system needs; to remove barriers to ensure access to the market and grid by all resources; and to enhance coordination between wholesale electric and natural gas systems.

As part of these evaluation efforts, Commission staff conducts quantitative and qualitative analysis of markets and market rules. This analysis can inform the consideration of proposed market rules and can lead to the initiation of rulemakings. This analysis also evaluates the effectiveness of previous rulemakings, which may lead to revisions of existing regulations or market rules.

Outreach is also part of these evaluation efforts. Commission staff conducts outreach with a variety of stakeholders and other regulatory bodies. For example, Commission staff conducted outreach with stakeholders to gather information helpful to its rulemakings on electric storage, distributed energy resource aggregations, and generator interconnection. These efforts will continue in FYs 2019 and 2020.

Internationally, in 2018, staff conducted information exchanges with several international regulatory agencies, such as the European Commission's Directorate General for Energy. These information exchanges provide an invaluable perspective on the energy challenges faced in the United States and provide a comparative framework for evaluating policies under consideration by the Commission. These information exchanges are ongoing and will continue in FYs 2019 and 2020.

Smart Grid. The Commission continues to encourage the efficient operation of the electric grid, which includes the development of a smart grid. The smart grid concept involves automating the electric grid by outfitting it with smart controls and two-way communications systems. These technologies have the potential to reduce power consumption through demand response, and to improve grid reliability. Commission staff released the 2018 Assessment of Demand Response and Advanced Metering Staff Report in November 2018. Work on this annual report will continue in FYs 2019 and 2020. In furtherance of section 1305(d) of the Energy Independence and Security Act of 2007, in FYs 2019 and 2020, the Commission will continue monitoring the development of smart grid interoperability standards.



Core Function 1.1.2: Analyze and act upon filings in a fair, clear, and timely manner. Where filings do not provide the Commission with sufficient information to act upon their merits, facilitate settlements of disputes or, in the absence of settlement, develop an adequate record for Commission action.

The Commission accomplishes a significant portion of its work to establish just, reasonable, and not unduly discriminatory or preferential rates, terms and conditions of service through the review of proposed rates and tariff provisions and other requests for Commission action from regulated entities and interested stakeholders.

However, when filings lack the necessary facts for Commission action, or when there is a material issue of fact in dispute, such matters are set for trial-type evidentiary hearings and/or settlement judge procedures. The Commission recognizes the value of resolving issues through consensual means and encourages settlements where possible. Settling cases benefits energy consumers as it dramatically limits the time, expense, and resources that the Commission and outside parties would

otherwise devote to litigating these cases. A settlement not only provides ratepayers reduced rates and refunds far more quickly than litigation, but also provides business certainty and can facilitate the construction of needed infrastructure in a more timely manner. Further, the resolution of a case through settlement is likely to be more acceptable to the parties than a litigated result, and therefore, reduces the likelihood of an appeal. The Commission also benefits because settlements limit the time, expense and resources needed to achieve a fair result for all parties. In the event a full settlement cannot be reached, the parties proceed through the hearing process. The Commission's trial staff and the parties conduct comprehensive discovery to develop facts relevant to the issues set for hearing and to create a record for the presiding judges and the Commission.

RATE AND TARIFF FILINGS

| <u>RATE AND TARIFF FILINGS BY INDUSTRY</u> | | | | | |
|---|---------------------------|---------------------------|---------------------------|-----------------------------|-----------------------------|
| | FY 2016 Actual | FY 2017 Actual | FY 2018 Actual | FY 2019 Estimate | FY 2020 Estimate |
| Electric | 5,446 | 4,939 | 4,525 | 5,500 | 5,000 |
| Gas | 1,609 | 1,303 | 1,451 | 1,650 | 1,350 |
| Oil | 778 | 750 | 862 | 750 | 750 |

All jurisdictional public utilities, natural gas pipelines, and oil pipelines are required to have their rates, terms, and conditions of service on file with the Commission. The Commission must review proposed changes to filed rates, terms, and conditions of service and all comments filed in response before determining how to address the proposed changes. The Commission expects to use qualitative and quantitative analysis, as appropriate, to inform the Commission’s decision-making on both an ex-ante and ex- post basis.

In FYs 2019 and 2020, the Commission will continue to dedicate a significant amount of resources to the analysis of rate and tariff filings to determine whether these filings are just, reasonable, and not unduly discriminatory or preferential given the large number of such filings that the Commission receives annually.

Market-Based Rates. The Commission reviews applications for market-based rate authorizations for the sale for resale of electricity, capacity, or ancillary services by public utilities; for storage services provided by natural gas companies; and for transportation services provided by oil pipelines. The Commission also permits natural gas pipelines to charge negotiated rates, subject to the availability of a cost-based recourse rate. Additionally, the Commission may grant merchant transmission developers authorization to sell transmission services at negotiated rates under certain circumstances. The Commission grants market-based rate authorization where the ability to exercise market power either is not present or has been adequately mitigated and where other conditions are met.

Cost-Based Rates. Public utilities and natural gas pipelines that the Commission has not granted market-based rate authority must establish their rates using a cost-based rate structure. Oil pipelines that the Commission has not granted market-based rates may establish their rates using a cost-based rate structure or by filing a sworn affidavit stating that the initial rate is agreed

to by at least one non-affiliated person who intends to use a new service.

RTO/ISO Filings. From a broader geographic perspective within the electric industry, the Commission also regularly reviews proposals from RTOs and ISOs to reform organized wholesale energy market rules to ensure that the dynamics for buying, selling and transmitting energy are robust and working as intended and to promote operational efficiency in wholesale markets. In particular, the Commission engages the RTOs/ISOs and stakeholders to ensure that energy, capacity and ancillary services markets provide appropriate price signals for new and existing resources, support market evolution, and provide appropriate opportunities to participate for all eligible resources, including emerging technologies.

Corporate Activities and Mergers. The Commission reviews proposed mergers, dispositions, and acquisitions involving public utilities, thereby ensuring that all such transactions are consistent with the public interest. The Commission ensures that the disposition, consolidation, or acquisition of jurisdictional facilities is in the public interest by reviewing each proposed transaction to ensure no adverse effect on rates, regulation, competition, or inappropriate cross-subsidization.

The Commission will protect customers from affiliate abuse and guard against cross-subsidization through oversight of public utility holding companies and by addressing complex issues associated with ownership and control of utility assets.

In July 2018, the Commission issued a Notice of Proposed Rulemaking to update and clarify our regulations covering “interlocking directorate” positions (i.e., those officers, directors or other persons concurrently performing executive-level duties or functions) for more than one public utility or a public utility and certain other entities. The proposed revisions should reduce filing and regulatory burdens for public utilities

and individuals holding, or seeking to hold, covered interlocking positions by (i) expanding the circumstances that do not require prior Commission authorization or notice of change filings, (ii) reassessing the Commission's policy of automatically denying late-filed applications and informational reports, and (iii) streamlining certain filing requirements. Work is expected to continue into FYs 2019 and 2020.

COMMISSION STAFF-INITIATED RATE REVIEWS

Cost-Based Electric Transmission Rates. Commission staff also performs annual reviews of cost-based electric transmission rates. Beginning in FY 2014, Commission staff annually performs a comprehensive review of electric utility formula rates and protocols. Based on the findings of those reviews, the Commission has initiated FPA section 206 proceedings to, among other things, require utilities to make annual informational filings to implement their formula rates. Staff has prepared written guidance that is posted on the Commission's website to assist all utilities in complying with Commission policies on formula rate updates. Staff devised a plan for monitoring and reviewing such filings in an organized fashion. Staff reviewed the formula rates in 2016, 2017, and 2018. Beginning in FY 2019, Commission staff will review formula rates every other year. The Commission will consider what additional steps may be warranted to address any issues identified in the course of these reviews.

Natural Gas Transportation and Storage Rates. In FY 2009, the Commission began an in-depth review each year of information filed annually by natural gas pipelines in their financial reports to determine whether the pipelines' returns are just and reasonable. Based on the findings, since FY 2010, the Commission has initiated 15 NGA section 5 actions to determine the justness and reasonableness of existing transportation and storage rates, including two initiated in FY 2018. In FYs 2019 and 2020, the Commission will continue to review the pipelines' financial reports to determine whether the pipelines' returns are just and reasonable. If any pipeline's returns appear to be excessive, the Commission will consider what additional steps may be warranted. Similarly, in FYs 2019 and 2020, the Commission will review the information filed by jurisdictional oil and product pipelines in their financial reports to determine whether the pipelines' earnings are just and reasonable.

Impact of Tax Cuts and Jobs Act of 2017 on Cost-Based Rates. In FY 2018, the Commission issued a Notice of Proposed Rulemaking, followed by a final rule, Order No. 849, which adopted procedures for determining which jurisdictional natural gas pipelines may be collecting unjust and unreasonable rates in light of the income tax reductions provided by the Tax Cuts and Jobs Act of 2017 and the Commission's Revised Policy Statement and precedent concerning tax allowances to address the double recovery issue identified by *United Airlines, Inc. v. FERC*. The Tax Cuts and Jobs Act, which was signed into

law by President Trump on December 22, 2017, reduced the federal corporate income tax rate from a maximum 35 percent rate to a flat 21 percent rate, effective January 1, 2018. The final rule required interstate natural gas pipelines to file a one-time report, called FERC Form No. 501-G, on the rate effect of the new tax law and changes to the Commission's income tax allowance policies. In addition to filing the one-time report, each pipeline has four options: (1) make a limited NGA section 4 filing to reduce its rates by the percentage reduction in its cost of service shown in its FERC Form No. 501-G; (2) commit to file either a prepackaged uncontested rate settlement or a general NGA section 4 rate case; (3) file a statement explaining why it does not believe it has to change its rates; or (4) file the FERC Form No. 501-G without taking further action. In the latter option, the Commission would consider whether to initiate an NGA section 5 investigation of any pipeline that has not submitted a limited NGA section 4 rate reduction filing or committed to file a general section 4 rate case. In addition, in order to provide an additional incentive for pipelines to make a limited NGA section 4 rate reduction filing, the final rule includes a guarantee that the Commission will not, for a three-year moratorium period, initiate a NGA section 5 rate investigation of a pipeline that makes such a filing, if that filing reduces the pipeline's return on equity to 12 percent or less. Order No. 849 established a staggered schedule for the filings of the FERC Form No. 501-G with the first batch due October 11, 2018, the second batch due November 8, 2018, and the third batch due December 6, 2018. Work is expected to continue into FYs 2019 and 2020.

In FY 2018, the Commission issued a Notice of Inquiry (NOI) in Docket No. RM18-12-000 seeking comments to address changes in the income tax rates for the electric transmission, interstate natural gas and oil pipeline companies that it regulates, stemming from the landmark Tax Cuts and Jobs Act. This means that all public utilities, interstate natural gas pipelines, and oil pipelines subject to federal corporate income taxes will compute those taxes owed to the Internal Revenue Service based on a flat 21 percent tax rate. Specifically, in the NOI, the Commission requested comments on information regarding whether and how the Commission should address accumulated deferred income taxes and bonus depreciation as to electric transmission companies, interstate gas and oil pipelines. NOI comments were filed on May 21, 2018. Based on comments received to the NOI, the Commission issued on November 15, 2018, a Notice of Proposed Rulemaking in Docket No. RM19-5-000, to require all public utility transmission providers with transmission rates under an OATT, a transmission owner tariff, or a rate schedule to revise those rates to account for changes caused by the Tax Cuts and Jobs Act. Specifically, for transmission formula rates, the Commission proposes to require that public utilities deduct excess accumulated deferred income taxes from or add deficient accumulated deferred income taxes to their rate bases and adjust their income tax allowances by amortized excess or deficient accumu-

lated deferred income taxes. The Commission also proposes to require all public utilities with transmission formula rates to incorporate a new permanent worksheet into their transmission formula rates that will annually track accumulated deferred income taxes information. Further, the Commission proposes to require all public utilities with transmission stated rates to determine the amount of excess and deferred income tax caused by the Tax Cuts and Jobs Act's reduction to the federal corporate income tax rate and return or recover this amount to or from customers. Comments are due in January, 2019. Related work will continue in FYs 2019 and 2020.

In addition, on November 15, 2018, the Commission issued a Policy Statement in Docket No. PL19-2-000, providing guidance regarding the treatment of accumulated deferred income taxes for both accounting and ratemaking purposes as to Commission-jurisdictional public utilities, natural gas pipelines and oil pipelines, in light of the Tax Cuts and Jobs Act. The Policy Statement also addressed the accounting and ratemaking treatment of accumulated deferred income taxes following the sale or retirement of an asset after December 31, 2017. Related work will continue in FYs 2019 and 2020.

In FY 2018, the Commission also issued two Federal Power Act show-cause orders involving 48 companies whose transmission tariffs specifically reference tax rates of 35 percent. The show-cause orders directed the companies to propose revisions to their transmission rates or show why they should not do so. The show-cause responses were filed on May 15, 2018. On November 15, 2018, the Commission issued orders accepting or holding in abeyance certain of the show-cause orders. Work is expected to continue into FYs 2019 and 2020. In reviewing filings, the Commission may determine that a filing lacks the necessary facts for Commission action, or that there is a material issue in dispute. In these instances, the Commission recognizes the value of resolving issues through consensual means where possible, and may recommend the filing for hearing and/or settlement judge procedures.

SETTLEMENTS AND TRIAL-TYPE EVIDENTIARY HEARINGS

Settlements. The Commission's staff, including administrative law judges (serving as settlement judges), trial staff, and dispute resolution staff all play important roles in resolving matters without full litigation. Settlement negotiations frequently take months, often involve numerous highly technical factual issues and complex legal questions, and require a delicate balancing of many different interests of parties representing state commissions, residential energy consumers, industrial and small commercial energy users, energy marketers and power generators.

In FY 2018, 89 full or partial settlements were achieved in cases set for hearing. Savings to ratepayers from these settlements



totaled approximately \$807 million (\$210 million in electric utility matters and \$597 million in natural gas pipeline and oil pipeline matters). The bulk of these savings to energy customers will continue in future years, until a subsequent rate case is filed, and thus provide long-term benefits beyond just the savings in FY 2018.

In addition, many matters are resolved through the efforts of dispute resolution staff serving as mediators or facilitators. During FY 2018, the dispute resolution staff (inclusive of the landowner helpline) successfully resolved 146 disputes, four of which were resolved through a negotiated settlement. In FYs 2019 and 2020, the Commission will continue to actively encourage settlement of proceedings to secure prompt benefits for ratepayers, jurisdictional entities, and the Commission.

Trial-type Evidentiary Hearings. In instances where a settlement cannot be achieved, the hearing process proceeds. When cases proceed to hearing, the presiding judges convene pre-hearing conferences, resolve discovery disputes, issue subpoenas, and issue orders. During the hearing, judges admit evidence, rule on motions to strike, and in general ensure that there is a full and complete record upon which the judge can issue an initial decision. The Commission's trial staff and the parties conduct comprehensive discovery to develop facts relevant to the issues set for hearing and to create a record for the presiding judges and the Commission. After discovery is complete, trial staff and the parties file several rounds of expert testimony and exhibits addressing the matters that are the subject of the hearing. In FY 2018, the Commission's trial staff filed 16 pieces of testimony. During the hearings, which can be lengthy, judges admit evidence, rule on motions and objections and ensure a complete and accurate record. Following a hearing, at which witnesses are cross-examined, trial staff and the parties file briefs addressing the factual, legal, and policy issues presented by the proceeding. Thereafter, the presiding judge issues an Initial Decision. If a participant contests the Initial

Decision, further briefs are filed with the Commission by the trial staff and parties, after which the Commission issues its final decision in the case. During FY 2018, the Commission’s trial staff filed 18 pre- and post-hearing briefs. In FY 2018, such proceedings resulted in the issuance of 4 Initial Decisions and 10 Commission opinions or orders on Initial Decisions. In FYs 2019 and 2020, the Commission will also continue to:

scrutinize filings to ensure that customers pay just and reasonable rates that ensure access to adequate energy supplies; actively encourage settlement of proceedings to secure prompt benefits for ratepayers, jurisdictional entities, and the Commission; and assure fair and thorough hearings of those cases that cannot be resolved through settlement.

PERFORMANCE MEASURE

Commission staff will use the following measure to assess performance in Objective 1.1. The result of this measure will be used in combination with other data and supplemental information to establish a more complete picture of performance on this objective.

Objective 1.1 Performance Measure: The degree to which electric storage resources are participating annually in organized wholesale electricity markets operated by regional transmission organizations (RTOs) and independent system operators (ISOs) after the issuance and implementation of Order No. 841 (Electric Storage Participation in Markets Operated by RTOs/ISOs)

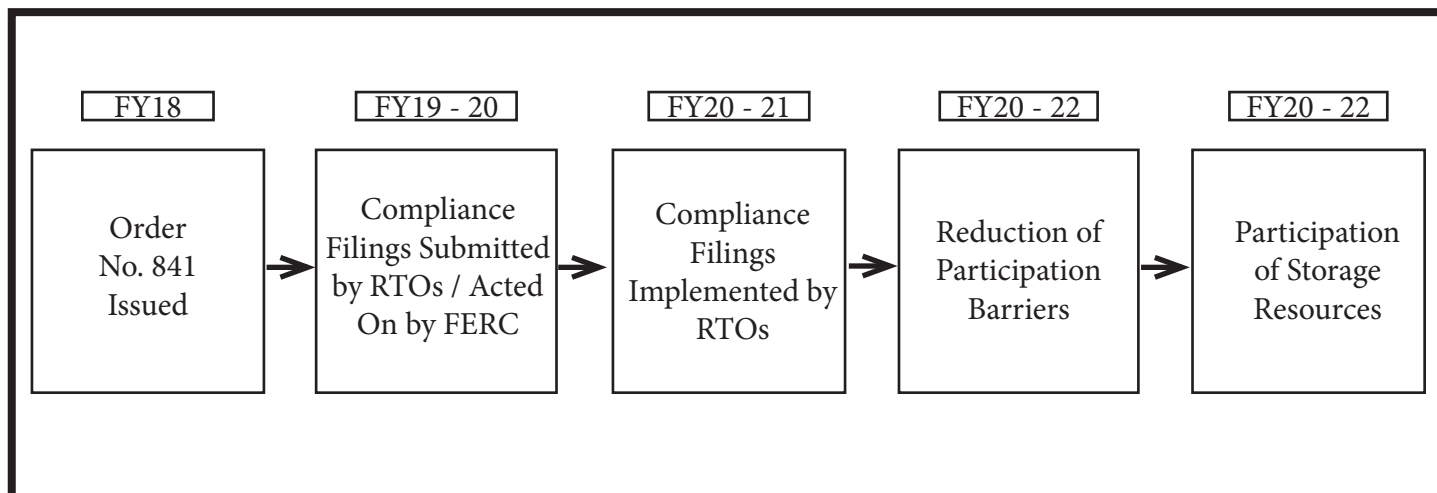
Description. The intent of Order No. 841 is to remove barriers to the participation of electric storage resources in organized wholesale electric markets. The entrance of these resources into organized wholesale electric markets will help to promote competitiveness and enhance bulk-power system resilience. An increase in both the number of electric storage resources in wholesale electric markets and the total capacity of those resource is an indication of increased market participation, which, in turn we would expect to be associated with increased competition in wholesale electric markets.

Note, because Order No. 841 is intended to remove barriers to the participation of electric storage resources in the wholesale electric markets and does not direct participation, the total number and capacity of storage resources participating in wholesale electric markets is only an indirect measure of the order’s outcome. The number and capacity of resources is expected to rise but could stay the same even if the order is effective at removing barriers to participation, as participation

will depend on economics and other factors. Nevertheless, a comparison of the results before and after the implementation of the order will provide some insight into the impact of the order.

Specifically, the order directs each RTO/ISO to submit a compliance filing to revise its tariff to establish a participation model for electric storage resources consisting of market rules that, recognizing the physical and operational characteristics of electric storage resources facilitates their participation in the RTO/ISO markets. Once the Commission acts on the RTO/ISO compliance filings, the RTOs/ISOs will implement the participation model. After implementation is complete, electric storage resources will experience fewer barriers to participation in wholesale electric markets and may elect to enter the market.

The following graphic illustrates the chain of influence for Order No. 841 and an expected timeframe for each stage.



| RTO/ISO | Number of electric storage resources participating in RTO/ISO electric markets | | | | | | |
|---------|--|----------------|----------------|----------------|----------------|----------------|----------------|
| | FY 2014 Actual | FY 2015 Actual | FY 2016 Actual | FY 2017 Actual | FY 2018 Actual | FY 2019 Target | FY 2020 Target |
| CAISO | 7 | 10 | 14 | 24 | 29 | N/A | 267 |
| ISO-NE | 0 | 1 | 1 | 6 | 9 | N/A | 60 |
| MISO | 1 | 1 | 3 | 3 | 4 | N/A | 22 |
| NYISO | 1 | 1 | 1 | 2 | 2 | N/A | 15 |
| PJM | 8 | 12 | 22 | 25 | 26 | N/A | 185 |
| SPP | 1 | 1 | 1 | 2 | 2 | N/A | 16 |

| RTO/ISO | Total capacity (MW) of electric storage resources participating in RTO/ISO electric markets | | | | | | |
|---------|---|----------------|----------------|----------------|----------------|----------------|----------------|
| | FY 2014 Actual | FY 2015 Actual | FY 2016 Actual | FY 2017 Actual | FY 2018 Actual | FY 2019 Target | FY 2020 Target |
| CAISO | 11 | 14 | 28 | 130 | 181 | N/A | 1,700 |
| ISO-NE | 0 | 2 | 2 | 23 | 27 | N/A | 152 |
| MISO | 1 | 1 | 22 | 22 | 23 | N/A | 135 |
| NYISO | 20 | 20 | 20 | 21 | 21 | N/A | 132 |
| PJM | 66 | 139 | 265 | 278 | 279 | N/A | 1,751 |
| SPP | 1 | 1 | 1 | 2 | 2 | N/A | 14 |

Data Table and Interpretation of Data. This performance measure has two parts: (1) the Commission expects to act on 75 percent of the six RTO/ISO compliance filings by the end of FY 2020; (2) beginning in FY 2020 and the implementation of Order No. 841, the Commission will measure the degree of participation of electric storage resources in at least three of the six RTOs/ISOs on an annual basis.

The Commission will track the percentage of compliance filings acted upon by the Commission and has established a target of acting on 75 percent of the six RTO/ISOs compliance filings by the end of FY 2020. This will establish an interim output measure of performance during the FYs 2018-2019 baseline period. This interim measure will provide supplemental information to aid the interpretation of the outcome measure and maintain the Commission's accountability to the RTO/ISOs subject to Order No. 841.

To assess the degree of participation, this measure reports both the total number and total capacity of electric storage resources participating in at least three of the six wholesale electric markets. An electric storage resource is defined as any type of device, facility, or technology that is capable of receiving electric energy from the grid and storing it for later injection of electricity back to the grid. In order to be counted for this measure, the electric storage resource must be operational and interconnected with the grid. In addition, it must have a capacity of at least 1 MW and be recognized as an electric storage resource by the RTO/ISO and Energy Information Admin-

istration (EIA). The measure does not include pumped hydro resources since they are typically very large relative to other types of electric storage resources and no new pumped hydro has come online in the past five years. The data source for the measure will be data collected through EIA's Monthly Electric Generator Inventory survey (Form EIA-860M).

The measure results provide an indication of the participation of electric storage resources in organized wholesale electric markets. This is an outcome measure, which along with other indicators and supplemental information (e.g., total megawatts of electric storage resources participating in the market), could provide a useful benchmark by which to evaluate the effectiveness of FERC's Order No. 841.

Analysis. This is a new measure. Because the RTO/ISO tariff revisions that Order No. 841 required will not be implemented until FY 2020, the results up through FY 2019 are considered baseline results.

The baseline results show growth in the number and capacity of installed electric storage resources in all RTOs/ISOs, however, there is significant variability across the different regions. Most new electric storage resource additions have occurred in CAISO and PJM, which account for more than 85 percent of total installed electric storage capacity in RTOs/ISOs in FY 2018. The overall baseline level is low and represents 1 percent of total installed generating capacity in each market. The FY 2018 results are similar to previous years in that CAI-

SO, ISO-NE, MISO, and PJM were the RTOs/ISOs that saw growth in the number of electric storage resources. No new electric storage resources came online in the remaining two RTOs/ISOs. In terms of capacity, CAISO's FY 2018 result is in line with the growth rate from previous years, while capacity in the other five markets was effectively flat relative to FY 2017.

The difference in the baseline results between CAISO and the other regions could be evidence of other factors beyond the current barriers to participation that affect electric storage participation. These potential factors include general economic conditions, state policies³, and the value of ancillary services that may affect the cost/benefit ratio and make participation in wholesale electric markets more or less desirable.

We do not expect Order No. 841 to have a significant impact on FY 2020 targets because jurisdictional entities may still be preparing additional compliance filings. In addition, many entities will not begin implementation of Order No. 841, i.e., establish rules for market participation, until FY 2020. Following the implementation phase, the time required for an electric storage resource to interconnect to an RTO/ISO system by advancing through the interconnection queue may further delay the impact of Order No. 841 beyond FY 2020.

To develop FY 2020 electric storage targets, we consider three information sources: the amount of electric storage currently in the RTO/ISO interconnection queues, independent forecasts for electric storage resources⁴, and state policies. Currently, there is over 25 GW of total electric storage resources in the six RTO/ISO interconnection queues. However, only a small portion of historical resources in the queue eventually become operational. Moreover, the time that has historically been required for a new resource to progress through an interconnection queue means that much of the electric storage resources currently in the interconnection queues will not be completed by FY 2020.

Consequently, Commission staff based the FY 2020 targets on electric storage projections in the EIA's Annual Energy Outlook (AEO) 2018 and state electric storage procurement targets. The AEO projects 6 GW of electric storage resources to be operational nationwide by 2020 (including electric storage resources in RTOs/ISOs and outside organized markets)⁵. Commission staff used the EIA Form 860 monthly data to scale the nationwide storage forecast by the percentage of electric storage in each RTO as of FY 2018⁶. To be conservative and attempt to account for possible forecast error, growth outside of RTOs, and growth of storage smaller than 1 MW, staff deducted 15 percent from the RTO/ISO targets. Since it is also assumed that California will meet its storage procurement target, the CAISO FY 2020 target was rounded up to the California investor-owned electric storage procurement target of 2020⁷. Finally, to calculate the FY 2020 electric storage unit targets, staff assumed the same growth rates for electric storage units between 2018 and 2020 as that of electric storage capacity and project that rate forward from 2018 actual figures to 2020.

Order No. 841 is intended to remove barriers to participation for electric storage resources in wholesale electric markets, but the decision to participate remains with individual resource owners. There are several factors that affect a resource owner's decision to participate in organized wholesale electric markets, including whether the technology is cost-effective or the resource is able to provide services needed by the RTO/ISO. These factors are considered to be risk factors because their influence could undermine, or at least mask, the impact of the order. As a result, it is difficult to precisely estimate the degree to which a change in electric storage resource participation in organized wholesale electric markets can be directly attributed to Order No. 841.

3 For example, in 2013, the California Public Utilities Commission implemented Assembly Bill 2514 requiring state investor-owned utilities to procure 1,325 MW of storage by 2020. Assembly Bill 2868 later required the procurement of an additional 500 MW of storage, with no more than 125 MW of customer-site storage, which we assume would be below the 1 MW capacity threshold for EIA data. See U.S. Energy Information Administration. US. Battery Storage Market Trends. May 2018, p. 18, available at https://www.eia.gov/analysis/studies/electricity/batterystorage/pdf/battery_storage.pdf.

4 U.S. Energy Information Administration. Annual Energy Outlook 2018 with projections to 2050. February 6, 2018 p. 95-96, available at <https://www.eia.gov/outlooks/aeo/pdf/AEO2018.pdf>.

5 *Id.*

6 U.S. Energy Information Administration. Preliminary Monthly Electric Generator Inventory (based on Form EIA-860M as a supplement to Form EIA-860). October 24, 2018, available at <https://www.eia.gov/electricity/data/eia860m/>.

7 U.S. Energy Information Administration. US. Battery Storage Market Trends. May 2018 p. 18, available at https://www.eia.gov/analysis/studies/electricity/batterystorage/pdf/battery_storage.pdf.

Objective 1.2

INCREASE COMPLIANCE WITH FERC RULES; DETECT AND DETER MARKET MANIPULATION

The Federal Power Act and the Natural Gas Act, along with other statutory authorities, give FERC oversight and enforcement responsibilities that focus on increasing compliance of regulated entities and detecting and deterring market manipulation. The Energy Policy Act of 2005 in particular increased both the Commission's responsibilities and its penalty authority.

Within the compliance focus of this objective, FERC gathers information about and analyzes market fundamentals, behavior, and trends in order to take proactive steps to reduce the probability that violations of applicable laws, the Commission's regulations, or market rules will occur. FERC also promotes internal compliance programs and employs a robust audit program to identify problems and provide recommendations to improve compliance. FERC also makes market and audit data transparent to the public and market participants so that market efficiency is promoted and anomalies and areas of concern may be identified and reported.

Fraud and market manipulation pose a significant threat to the markets overseen by the Commission, and the financial harm imposed by such actions ultimately is borne by consumers. To detect and deter fraud and market manipulation, FERC uses market surveillance and other sources to identify indications of misbehavior. FERC then conducts investigations, and, when appropriate, exercises the Commission's civil penalty authority to discourage violations.

Promoting compliance and inhibiting market misconduct strengthen markets, increase market confidence, and support the Commission's goal of ensuring that rates, terms, and conditions of jurisdictional energy services are just, reasonable, and not unduly discriminatory or preferential.

SITUATIONAL ASSESSMENT

The Commission took specific actions to address strategic issues and opportunities described in the FY 18-22 Strategic Plan.

Situational Assessment Item 1: Non-traditional Market Participants

The Commission recognizes that jurisdictional energy markets are continuing to evolve, including the increasing participation of non-traditional market participants, which offers opportunity to engage with traditional and new stakeholders to bolster compliance. Compared to traditional market participants like public utilities and natural gas companies, non-traditional market participants encompass a wider range of entities, including financial traders that possess different strategies and incentives for participating in jurisdictional energy markets. As such, these non-traditional participants may present different types of compliance challenges and may be less familiar with the Commission's requirements.

IMPLEMENTING THE STRATEGIC RESPONSE

The Commission will bolster its existing efforts and explore new ways to educate market participants, including with respect to market manipulation and the evolving nature of markets.

FERC has begun to implement its strategic response by seeking out opportunities for additional outreach to non-traditional market participants. FERC participated in more conferences,

workshops, and one-on-one discussions that included non-traditional market participants. FERC has also looked for ways to provide more transparency into its non-public surveillance and investigative activities by providing additional detail in its annual report on enforcement on matters that close with no public action.

Audits provide an opportunity to provide feedback and recommendations and ensure that auditees have a better understanding of market rules. Likewise, surveillance inquiries provide an opportunity for FERC analysts to discuss specific market activities that might result in surveillance alerts with market participants. In further efforts to assist in the development of strong compliance programs across all market participants, FERC has also developed white papers that outline effective and ineffective features of compliance programs and which provide information on the types of activities that have been found to be manipulation. FERC will consider providing similar or additional guidance in the future.

FERC will also continue to use its audit reports, enforcement settlement agreements, and enforcement reports as a means

to educate market participants as to which types of activities may constitute a violation of Commission requirements. Both settlements and audits will be published in eLibrary and summarized in the annual enforcement report. FERC will conduct outreach to let new market participants know about these resources.

The strategic response, and particularly the focus on educating non-traditional market participants is still in the early stages of implementation. However, FERC staff have found that there is a growing interest among non-traditional market participants to learn more about FERC's enforcement program, as evidenced by the increasing number of requests for FERC participation at industry conferences. Non-traditional market participants have expressed appreciation for the information and feedback they have received as part of the surveillance inquiry process.

Over the coming year, FERC will continue to conduct outreach through industry conferences and other venues to educate non-traditional market participants about compliance with FERC requirements and enforcement processes. In addition, FERC will look for opportunities to increase transparency into non-public matters that may help improve compliance.

The Commission expects these actions will produce a number of positive impacts related to compliance, particularly with regard to the non-traditional market participants. The Commis-

CORE FUNCTIONS

In addition to addressing its strategic priorities, the Commission continued to perform its Core Functions and fulfill its responsibilities as a regulatory agency.

Core Function 1.2.1: Increase compliance by identifying anomalies and potential rule improvements, and through stakeholder education and outreach.

The Commission's staff examines and analyzes the structure and operation of the markets to identify significant market anomalies, inefficient or deficient market rules, tariff and rule violations, and other unusual market behavior that may result from a lack of compliance with applicable laws, the Commission's regulations, and market rules. If Commission staff detects such anomalies, rule deficiencies and other factors that inhibit compliance, the Commission can take action to increase compliance through a number of means, including through the use of its audit and investigation programs.

MARKET OVERSIGHT

Today's evolving natural gas and electric markets require increasingly sophisticated data collection and analysis for effective oversight. Both natural gas and electric energy are traded in a variety of ways in a variety of markets, ranging from extremely complex transactions that require in-depth and time-con-

sion expects that the time needed for non-traditional participants to establish their compliance programs will decrease and that the quality of those programs will increase. Beyond the compliance programs, the Commission expects non-traditional, as well as traditional, market participants to provide better and more prepared responses to inquiries and investigations. The Commission also expects to see an increase in self-reporting of violations; and ultimately, a decrease in violations due to a lack of knowledge.

MONITORING OF THE RISK FACTORS

Non-traditional participants, which are often smaller than traditional market participants and subject to fewer FERC requirements, can enter and exit the market more quickly than traditional market participants. This makes it difficult to maintain a clear picture of the full population of new participants and their activities. As a result, the Commission's efforts may not be reaching everyone. New participants are also more diverse and tend to have unique compliance challenges. Therefore, the public information provided by FERC related to its enforcement program and compliance issues may not be relevant for all market participants. The diversity thus precludes the use of a single message or outreach mechanism and makes it more difficult to reach everyone. FERC expects that these factors will continue to be relevant over the next two years and will continue to take them into account while implementing its responsive actions.

suming data analysis, to relatively straightforward transactions. The Commission examines and monitors many elements of the physical energy markets, including the structure and operations of, and interaction between, the natural gas and electric markets, among other things. This regular monitoring of energy markets is designed to maintain market intelligence to identify market anomalies and potential misbehavior, and to promote market efficiency.

Electricity Markets and Energy Fuels Markets. On an ongoing basis, Commission staff accesses and synthesizes a large variety and quantity of data to review market fundamentals, identify emerging trends, and perform ex-post analysis of market-based rate authorizations and approved mergers and acquisitions. Commission staff reviews this information and develops intelligence on market events as they occur. Analyses of market data also identifies market outcomes that cannot

be readily explained by supply and demand fundamentals. The Commission examines such anomalies to determine, among other things, whether there are indications of market power, or possible fraud or manipulation.

In an effort to ensure that jurisdictional rates remain just and reasonable and not unduly discriminatory and preferential, Commission staff develops, refines, and implements tools and algorithmic indicators to conduct ongoing analysis of transactional and other market data to detect the presence of market power. This ex-post analysis evaluates transactions against market fundamentals at the time of execution, with the primary goal of identifying outcomes that may be inconsistent with expectations of a competitive market, and thus an indication of an exercise of market power. Once such outcomes are identified, there is coordination among Commission program offices to determine whether to recommend that the Commission take action to remedy market power concerns. Commission staff also uses these tools to analyze applications and filings for market-based rates, public utility mergers, and other docketed proceedings.

Commission staff also creates detailed market analytical reports for the Commission's use that cover various aspects of energy market dynamics and provide timely evaluations of market conditions within organized and bilateral markets.

Electric Quarterly Reports and Other Required Data Collections. In order to meet its statutory obligations under the Federal Power Act, the Natural Gas Act, and the Interstate Commerce Act, the Commission requires that companies participating in markets under its jurisdiction submit annual and quarterly reports regarding jurisdictional sales, financial statements, and operational data. This information is used by the Commission, market participants, and the public for a variety of purposes, including evaluating whether existing rates continue to be just and reasonable and for indications that public utilities have obtained or exercised market power.

Of particular note is the Electric Quarterly Report, which provides the Commission and the public access to information about electric energy sales and transmission sales under the Commission's jurisdiction. Electric Quarterly Report filings are used for ex-post analysis of entities which have been granted market-based rate authority by the Commission. Commission staff continues to refine and coordinate the ex-post analysis of sellers with market-based rate authority with related reviews conducted by other program offices.

Commission staff is developing a process to replace the Commission's current filing format for many of the forms submitted by industry. The new process will replace software that has size and accessibility limitations and will promote continued transparency of the Commission's publicly reported data. The Commission continues to improve the Electric Quarterly Re-

port filing process and conducts biannual Electric Quarterly Report User Group meetings with filers and data users to discuss improvements to the filing process or data quality. Commission staff also posts notifications on the Commission's website and emails Electric Quarterly Report filers of recent developments. Commission staff is conducting a thorough re-assessment of the substantive and technical requirements of the Electric Quarterly Report to determine changes to recommend to the Commission for possible implementation in FY 2020.

Outreach and Communication. Commission staff conducts regular outreach to independent market monitors for RTOs and ISOs to review issues regarding market participant behavior and the impact of approved market rule changes or other market events. Commission staff develops and presents its analyses, the annual State of the Markets Report, and seasonal assessments at the Commission's open meetings, and subsequently posts this information on the Commission's website.

Commission staff develops and posts on the Commission website various graphs and charts providing the public with easy access to market fundamentals. This process provides the public and state regulators access to and understanding of market information that they may not otherwise obtain and affords the Commission the opportunity to learn of relevant state and regional developments.

Commission staff is working on public release of an updated version of its "Energy Primer: A Handbook of Energy Market Basics," previously updated in November 2015.

Commission staff is also in frequent communication with jurisdictional entities to ensure they have adequate support for timely and accurate fulfillment of mandatory reporting requirements related to their cost-based rate and market-based rate authorizations.

Commission staff also produces reports on national developments in electricity and energy fuels markets and conducts semi-annual conference calls with representatives of public utility commissions and state agencies to discuss these developments.

AUDITS AND ACCOUNTING

The Commission conducts a variety of audits including, but not limited to, compliance, operational, and financial audits. These audits are undertaken to ensure that jurisdictional companies comply with the Commission's authorizing statutes, orders, rules, and regulations. The Commission processes accounting filings and analyzes accounting matters in other filings submitted by regulated entities to ensure compliance with Commission accounting and related financial reporting regulations and to bolster the accuracy, transparency, and use-

fulness of accounting information for the Commission, regulated entities, and interested parties in the development and oversight of rates. The Commission's accounting program is an instrumental component in ensuring that rates established for jurisdictional companies are just and reasonable and not unduly discriminatory or preferential.

Audits of Jurisdictional Entities for Compliance with Commission Rules and Regulations. In FY 2018, the Commission completed 14 audits of public utilities, natural gas pipelines, and oil pipelines, which resulted in 209 recommendations for corrective actions. The audit reports are available to the public to provide all jurisdictional entities transparency into the audit process and areas of noncompliance. The major topic areas of the Commission's FY 2019 audits and those anticipated for FY 2020 include: competitive energy markets, transmission formula rates, market-based rates, reliability, affiliated transactions, open access transmission tariffs and interconnections, natural gas pipeline tariffs, oil pipeline tariffs and FERC Form No. 6 reporting, impact of the Tax Cuts and Jobs Act of 2017, and other accounting and financial reporting matters.

Implementation of Audit Recommendations. The Commission continues to stress the importance of timely implementation of audit recommendations. Prompt implementation of recommendations ensures that potential risks or negative impacts of noncompliance are minimized and any refunds are promptly returned. Timely implementation of recommendations also demonstrates a commitment to improve compliance

Core Function 1.2.2: Detect and deter market manipulation by identifying potential violations and conducting investigations of potential violations.

The Commission conducts comprehensive surveillance of the natural gas and electric markets to identify potential market manipulation and other violations. When potential violations are identified, the Commission conducts comprehensive investigations to determine whether a violation has occurred and whether it is appropriate for the Commission to exercise its civil penalty authority. By closely monitoring market participant behavior, the Commission is able to quickly detect potential violations, preventing ongoing manipulative schemes and deterring market participants from engaging in market manipulation.

SURVEILLANCE OF NATURAL GAS AND ELECTRIC MARKETS

In an effort to improve the Commission's ability to identify inappropriate market behavior as it happens, Commission staff continues to develop, refine, and implement surveillance tools and algorithmic screens to perform continuous surveillance and analysis of market participant behavior, economic incentives, operations, and price formation, both in the natural gas and electricity markets.

with FERC precedents and strengthen regulatory operations and internal compliance programs.

Accounting and financial reporting requirements. The Commission processes accounting filings and analyzes accounting matters in other filings submitted by regulated entities to ensure compliance with Commission accounting and related financial reporting regulations and to bolster the accuracy, transparency, and usefulness of accounting information for the Commission, regulated entities, and interested parties in the development and oversight of rates. In FY 2018 the Commission processed 435 accounting filings, responded to 103 accounting inquiries, issued accounting guidance on employee benefit costs, and analyzed the accounting impacts of the Tax Cuts and Jobs Act of 2017. Work is expected to continue into FYs 2019 and 2020.

Outreach and Communication. The Commission regularly meets with industry groups and is actively engaged in emerging accounting issues such as changes to U.S. GAAP related to accounting for cloud computing, leases, and employee pensions; the International Accounting Standards Board's project on Rate-Regulated Activities; and the accounting impacts of the Tax Cuts and Jobs Act of 2017. The Chief Accountant and other Commission staff also regularly engage in informal meetings with representatives of the regulated industries to discuss relevant accounting topics and Commission actions.

Screen for Potential Violations. Commission staff develops its surveillance screening methods using market data collected from a variety of public and non-public sources. To enhance its surveillance efforts, the Commission is continuing its initiative to integrate the different public and non-public market data that it utilizes in an effort to (1) increase usability and accessibility of the data for Commission staff, (2) enhance the insights that can be gathered from the data; and (3) increase the efficiency of the Commission's surveillance functions so that it can more quickly detect and prevent misconduct. The models and data integration effort will help the Commission achieve the next level of providing robust surveillance.

In FY 2018, Commission staff ran algorithmic surveillance screens covering: the majority of physical and financial natural gas trading hubs in the United States; 37,000 hub and pricing nodes within the six RTO/ISOs, and non-RTO markets and cross-RTO portfolio trades. In FYs 2019 and 2020, the Commission will continue to focus on conducting surveillance to identify potential violations across the jurisdictional energy markets.

Inquires of Potential Violations. When a surveillance screen issues an alert, Commission staff conducts a series of analyses to gain information about the activity that caused it. First, it evaluates the activity using available information and market data to determine whether there is a fundamentals-based explanation for the activity. Most often, staff finds such an explanation. However, when the follow-up analyses fail to explain the alert, Commission staff performs a more in-depth review of the conduct, which may involve contacting the market participant to request additional information and explanations for the conduct. Staff classifies this enhanced review as the opening of a surveillance inquiry. If staff is still concerned that there is a potential violation after conducting a surveillance inquiry, it may recommend that the matter be investigated. In FY 2018, Commission staff recommended opening 5 investigations as a result of its surveillance screening.

INVESTIGATIONS

Conduct involving fraud and market manipulation poses a significant threat to the markets overseen by the Commission and, therefore, to the Commission's efforts to ensure just, reasonable, and not unduly discriminatory or preferential rates, terms, and conditions. Further, anticompetitive conduct and behavior that threatens market transparency undermines the confidence that market participants and consumers have in the energy markets.

While most market participants act in good faith and observe the relevant rules and regulations, there are instances in which some participants engage in manipulative behavior or violate known requirements when it is in their economic interest to do so. When such instances are suspected or identified, Commission staff conducts an investigation.

While investigations are non-public activities, the Commission provides guidance to the regulated community where possible, including in the Annual Report on Enforcement. The Commission staff also has regular interactions with regulated entities, conducts outreach efforts, encourages companies to implement effective compliance programs, and releases reports of investigations of alleged fraud or manipulation, when appropriate. Moreover, if the Commission finds a violation after a non-public investigation, matters become public through an order approving settlement or an order to show cause. These actions, and the Commission's imposition of civil penalties or other sanctions where circumstances warrant, act as a deterrent to fraud, market manipulation and other violations.

In FY 2018, Commission staff opened 24 new investigations and brought 23 investigations to closure. The length of an investigation depends upon its nature and complexity; some close in a few months while others may be ongoing for multiple years. From time to time, the Commission also brings subpoena enforcement actions in federal district court, when appropriate, against entities who do not comply fully with in-

vestigative requests. In some cases, the Commission works closely with the Department of Justice and with other federal enforcement agencies.

In FYs 2019 and 2020, the Commission will continue to focus on the following investigation and enforcement priorities:

- Fraud and market manipulation;
- Anticompetitive conduct;
- Serious violations of Reliability Standards; and
- Conduct that threatens the transparency of regulated markets.

Sources of Investigations. Commission investigations begin in a number of ways, including: referrals to the Office of Enforcement from other program offices within the Commission, referrals from organized markets or their monitoring units, other agencies, self-reports of violations, calls to the Enforcement Hotline, or as a result of other investigations.

The Commission receives self-reports of violations from regulated entities and market participants, many of which are resolved without any sanctions. In FY 2018, the Commission received 137 such self-reports. Information gathered from these self-reports is provided to the public and regulated entities in the Commission's Annual Report on Enforcement, which is released following the close of the fiscal year. During FY 2018, staff resolved 136 self-reports that had been submitted in FY 2018 and prior fiscal years.

The Commission also operates an Enforcement Hotline whereby the public or industry participants can anonymously provide information to the Commission concerning potential regulatory violations, market anomalies, or market participant misconduct. In FY 2018, the Commission received 171 Enforcement Hotline matters, most of which resulted in prompt, informal resolution. Additionally, 167 Hotline inquiries were resolved in FY 2018, some of which included pending matters from previous years.

Discovery and Data Analysis. Commission investigators gather relevant facts through a number of methods, including written requests for data, documents, or narrative information; sworn witness testimony; and witness interviews.

Often, the information gained in an investigation (e.g., trading information) requires extensive data analysis. This forensic analysis, which requires the assessment of millions of lines of sensitive data, allows the Commission to create a complete picture of the trading activities under review. Upon completion of the analytical process, Commission staff develops data-based explanations to inform the structure and substance of further investigation, settlement discussions, and Commission actions.



ENFORCEMENT HOTLINE

THE COMMISSION OPERATES AN ENFORCEMENT HOTLINE WHEREBY THE PUBLIC OR INDUSTRY PARTICIPANTS CAN ANONYMOUSLY PROVIDE INFORMATION TO THE COMMISSION CONCERNING POTENTIAL REGULATORY VIOLATIONS, MARKET ANOMALIES, OR MARKET PARTICIPANT MISCONDUCT.

IN FY 2018, THE COMMISSION RECEIVED 171 ENFORCEMENT HOTLINE MATTERS, MOST OF WHICH RESULTED IN PROMPT, INFORMAL RESOLUTION. ADDITIONALLY, 167 HOTLINE INQUIRIES WERE RESOLVED IN FY 2018, SOME OF WHICH INCLUDED PENDING MATTERS FROM PREVIOUS YEARS.

ENFORCEMENT PROCEEDINGS

During FY 2018, the Commission approved settlements in six matters. These FY 2018 settlements included almost \$83 million in civil penalties and over \$66 million in disgorged unjust profits plus interest.

In addition, two Natural Gas Act enforcement matters are pending before the Commission. In FY 2016, the Commission issued an Order to Show Cause under the Natural Gas Act in a matter captioned Total Gas & Power North America, Inc., S.A. Total Gas & Power, Ltd., Aaron Hall, and Therese Tran f/k/a Nguyen, with proposed civil penalties totaling \$216 million and disgorgement of \$9.18 million. A second pending Natural Gas Act matter concerns the Commission's, July 11, 2016, affirmance of an Initial Decision from an Administrative Law Judge following an investigation of BP America, Inc. for alleged market manipulation involving natural gas trading, ordering BP to pay \$20.16 million in civil penalties and disgorgement in the amount of \$207,169. That decision is pend-

ing rehearing at the Commission.

Commission staff are currently litigating in federal district court reviews of Orders Assessing Civil Penalties issued against Richard Silkman and Competitive Energy Services, LLC, for fraud in participation in an RTO's demand response program. Also being litigated in federal district court are reviews of Orders Assessing Civil Penalties issued in FY 2015 against Houlian Chen, Powhatan Energy Fund, LLC, HEEP Fund, LLC, and CU Fund, Inc. for fraud in the collection of marginal loss surplus allocation payments in PJM energy markets. In addition, Commission staff are currently litigating in district court the review of an Order Assessing Civil Penalties issued in FY 2016 against Coaltrain Energy L.P., Peter Jones, Shawn Sheehan, Robert Jones, Jack Wells, and Jeff Miller for engaging in fraud in the collection of marginal loss surplus payments in PJM energy markets.

PERFORMANCE MEASURE

Commission staff will use the following measure to assess performance in Objective 1.2. The result of this measure will be used in combination with other data and supplemental information to establish a more complete picture of performance on this objective.

Objective 1.2 Performance Measure: Percent of Audit Recommendations Implemented within Six Months of Issuance

Description. This measure tracks the timeliness of the industry's implementation of audit recommendations directed by FERC.

For each area of non-compliance identified during the audit, FERC provides a recommendation to rectify the deficiency. FERC has established a six-month timeframe for the regulated entity to implement a recommendation. FERC considers a recommendation as implemented if the corrective actions have been completed or, in the case of complex recommendations where the changes require more than six months to achieve, the entity has taken action and is continuously working to im-

plement the recommendation.

FERC's recommendations include corrective actions that improve compliance and enforce FERC's regulations of the interstate transmission of electricity, natural gas, and oil. Timely implementation of audit recommendations helps to maximize their impact. The sooner recommendations are implemented, the sooner the jurisdictional entity will experience the benefits. Timely implementation of recommendations also helps to demonstrate industry's commitment to compliance and fair, competitive markets.

| Percentage of audit recommendations implemented within six months of issuance | | | | | | | |
|---|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| FY 2014 Actual | FY 2015 Actual | FY 2016 Actual | FY 2017 Actual | FY 2018 Actual | FY 2018 Target | FY 2019 Target | FY 2020 Target |
| 95% | 96% | 98% | 98% | 98% | 95% | 95% | 95% |
| FY 2018 Target: Met | | | | | | | |

Data Table and Interpretation of Data. The result for FY 2018 exceeded the 95% target and represents a high level of performance. The results have remained at or above the 95% target level since FY14 and have been at 98% since FY16.

Analysis. The FY 2018 result, which exceeded the target, reflects FERC’s continuing efforts work with jurisdictional entities to improve their compliance programs and encourage a culture of compliance with their staff. FERC auditors engage a company’s staff throughout the audit and conduct explicit discussions with them to ensure they fully understand the scope and significance of the issues. Auditors also actively encourage companies to make changes before the audit has even concluded and provide specific guidance for how to make the change. After the audit, frequent follow-up and ongoing guidance helps to increase the responsiveness of companies in implementing the recommendations.

The targets for the next two years will remain at 95%. This target level establishes a minimum threshold intended to keep performance at or above this level. The 95% threshold represents an aggressive target and reflects FERC’s goal of maintaining a consistently high level of achievement.

Several risk factors may impact the FYs 2019 and 2020 results. These include delays caused when an audit is contested, changing regulations, and the entity’s own ability and willingness to implement a given recommendation. Regulated entities vary in terms of capability, resources and the level of internal controls, all of which can affect the timeliness of implementation. Additionally, the complexity and scope of audit topics is likely to increase requiring an increase in the complexity and scope of audit recommendations. This may make it more difficult for regulated entities to meet the six-month timeframe.

However, FERC will continue to engage an entity’s staff during the audit to provide guidance and ensure their understanding of any issues. FERC will also maintain contact and provide guidance during the implementation period to help ensure recommendations can continue to be implemented timely. In addition, FERC will monitor compliance and look for common compliance issues. FERC will consider developing new guidance to help regulated entities address these issues and consider whether additional and/or different outreach is needed.

GOAL 2

PROMOTE SAFE, RELIABLE, AND SECURE INFRASTRUCTURE

Promote the development of safe, reliable, and secure infrastructure that serves the public interest.

The nation's demand for energy continues to grow, requiring the expansion of the infrastructure that provides that energy. Infrastructure for which FERC approval is required includes interstate natural gas pipelines and storage projects, LNG facilities, and non-federal hydropower facilities. These facilities are critical to meet the nation's growing energy needs. Ensuring the development of safe, reliable, and secure infrastructure that provides energy for consumers at a reasonable cost is a significant, multi-faceted challenge. Because of its many uses, particularly as a fuel for electric power generation, the demand for natural gas in the United States is at its highest levels on record and natural gas production continues to increase due to the development of shale gas. Interest in developing hydropower projects has also increased. Hydropower facilities provide renewable, domestic energy.

FERC's role as an independent regulatory agency includes both the review of infrastructure projects as well as the minimization of risks to the public in the operation of the infrastructure. To promote safe, reliable, and secure infrastructure, FERC must ensure the sustainability and safety of non-federal hydropower projects and LNG facilities throughout their entire life cycle; oversee the development and review of, as well as compliance with, mandatory reliability and security standards for the bulk-power system; and help to secure the infrastructure from cyber and physical attacks.

| Strategic Goal and Objectives (Dollars in thousands) | | FY 2018 Actual | FY 2019 Estimate | FY 2020 Request | Percent Change FY 2019 to FY 2020 |
|---|---------|-------------------|---------------------|--------------------|--|
| Objective 2.1 | FTE | 248 | 256 | 256 | 0.0% |
| | Funding | 68,051 | 76,054 | 70,636 | -7.1% |
| Program | | 48,452 | 53,180 | 49,602 | -6.7% |
| Support | | 19,598 | 22,874 | 21,034 | -8.0% |
| Objective 2.2 | FTE | 229 | 236 | 236 | 0.0% |
| | Funding | 59,555 | 64,585 | 63,208 | -2.1% |
| Program | | 41,427 | 43,578 | 43,891 | 0.7% |
| Support | | 18,127 | 21,007 | 19,317 | -8.0% |
| Goal 2 Subtotal | FTE | 477 | 492 | 492 | 0.0% |
| | Funding | 127,605 | 140,639 | 133,844 | -4.8% |
| Application of PY Budget Authority | | - | (10,292) | (1,558) | |
| Goal 2 Total | Funding | 127,605 | 130,347 | 132,285 | 1.5% |

Note: numbers may not add up due to rounding.

Objective 2.1

FACILITATE BENEFITS TO THE NATION THROUGH THE REVIEW OF NATURAL GAS AND HYDROPOWER INFRASTRUCTURE PROPOSALS

The Natural Gas Act and the Federal Power Act, among other statutory authorities, charge FERC with the responsibility to oversee the development of robust, reliable and secure energy infrastructure that operates safely. More specifically, FERC is charged with authorizing the construction and operation of interstate natural gas pipelines and storage projects, LNG facilities, and non-federal hydropower projects. With the rising demand for natural gas and hydropower comes increased infrastructure construction, making it all the more important that FERC oversee the private sector development of safe, reliable, and secure infrastructure in a way that fosters economic and environmental benefits for the nation.

FERC achieves this objective through the review of applications to construct, operate, or modify natural gas and hydropower infrastructure by ensuring that facilities are constructed and operated in compliance with the conditions of FERC orders. FERC's review of proposed projects must balance a range of factors such as competing interests, legal requirements, and environmental impacts. FERC also coordinates with other agencies, as appropriate, to consider issues related to environmental statutes such as the Endangered Species Act, National Historic Preservation Act, Coastal Zone Management Act, and Clean Water Act. In exercising its authority, FERC ensures the development and operation of safe, reliable, and secure infrastructure while ensuring that impacts are mitigated to acceptable levels.

SITUATIONAL ASSESSMENT

The Commission took specific actions to address strategic issues and opportunities described in the FY 18-22 Strategic Plan.

Situational Assessment Item 1: Permitting Challenges

Changes in both energy supply and demand are having an impact on the fuel mix of resources participating in wholesale electric markets, the dynamics of competitive markets, incentives for investment in infrastructure, and the security and resilience of the bulk-power system. These changes create new challenges and increase the complexity of maintaining just, reasonable, and not unduly discriminatory or preferential rates, terms, and conditions of jurisdictional service.

IMPLEMENTING THE STRATEGIC RESPONSE

The Commission will implement a combination of internal and external process improvements and stakeholder communication to address permitting challenges:

- Seek and implement ways to make the Commission's permitting process more efficient. Such efforts include implementation of the Fixing America's Surface Transportation Act of 2015; enhanced interactions with other federal agencies, including pursuant to the One Federal Decision Memorandum of Understanding; and a formal review of the Commission's 1999 Certificate Policy Statement for Natural Gas Pipelines, launched in April of 2018.
- Provide to the public more detailed, project-specific information on FERC.gov.
- Develop and provide to the public clearer information on FERC's role and responsibilities with respect to infrastructure

permitting, as well as how FERC's permitting process works.

FERC has already undertaken a number of responsive actions, including those responsive to a number of recently enacted laws and executive actions that affect the Commission's regulatory responsibilities.

Most recently, in FY 2019, the America's Water Infrastructure Act of 2018 was signed into law and requires FERC to issue rules establishing an expedited process for issuing and amending licenses for qualifying facilities at existing non-powered dams and for closed-loop pumped storage projects. Similar to other Congressional directives, the end goal is that the processes must seek to ensure a final decision by the Commission on an application for a license by no later than two years after receipt of a completed application. In FY 2019, the Commission will convene an interagency task force to coordinate the regulatory processes associated with the authorizations required in connection with the new processes and issue the new rule in spring 2019. The Commission will prepare guidance and continue to monitor the effectiveness of the expedited processes in FY 2020 and beyond.

In FY 2018 the Commission continued to implement the Fixing America's Surface Transportation Act of 2015 (FAST-41), the intent of which is to improve coordination among govern-

ment agencies that permit infrastructure and provide transparency for stakeholders involved in the permitting process. Activities including regularly attending working group meetings and project specific meetings for FAST-41 projects; maintaining FERC's entries on the FAST-41 permitting dashboard and communicating with other agencies to update the Coordinated Project Plans and dashboard entries as needed. Going forward in FY 2019 and beyond, the Commission will continue to participate in and seek to capitalize on the coordination opportunities provided by the FAST-41 process.

In FY 2018, the Commission executed a memorandum of understanding (MOU) to implement the One Federal Decision (OFD) policy established in Executive Order (E.O.) 13807. The purpose of the MOU is to establish a cooperative relationship among federal agencies who have the responsibility to review or authorize infrastructure projects, and for these same agencies to commit to a more coordinated and simplified process of environmental reviews and authorization decisions for major infrastructure projects. To carry out the MOU, the Commission developed an OFD implementation plan; developed and implemented a training program on the OFD process for the staff of the Commission and other agencies; and created training materials to clarify the responsibilities and milestones under OFD. In FY 2019 the Commission will post the implementation plan to the Commission's website, develop an agency accountability system to track project review progress, and continue to collaborate with other agencies as part of the ongoing implementation of OFD. In FY 2020 and beyond, the Commission will continue to look for improvements to the OFD process and work with the OFD interagency working group to identify and implement efficiencies.

As part of its efforts to optimize existing processes, the Commission also entered into an MOU with the United States Department of Transportation's Pipeline and Hazardous Materials Safety Administration (PHMSA) in FY 2018 to more efficiently review applications for FERC jurisdictional LNG facilities. The MOU allows the Commission to rely on PHMSA staff's technical abilities and knowledge of the federal safety and siting regulations during the project review process. In doing so, reviews will be conducted expeditiously and stakeholders can have greater confidence in the resulting analysis. In FY 2019, the Commission will continue to implement the MOU, evaluate its efficacy, and work with PHMSA to improve and adapt the MOU as necessary to ensure a coordinated and smooth process between the two agencies.

In FY 2018, the Commission also committed resources to improving its own internal databases regarding permitting milestones and employed analytical tools to undertake a review of its historical timeframes for processing applications for natural gas pipelines. In FY 2019, using this information, staff will identify those areas which may require new strategies or resource allocations to increase the efficiency of processing

applications for new infrastructure. Throughout FY 2019 and FY 2020, the Commission will continue to review its processes and make adjustments to optimize execution of its Congressionally-mandated permitting responsibilities.

In FY 2018, the Commission also initiated a review of its 1999 Certificate Policy Statement for Natural Gas Pipelines in order to reassess its applicability, identify efficiencies, and improve the transparency of the certificate review process. In FY 2019, the Commission will review stakeholder comments and determine what, if any, actions are appropriate.

In addition to improving the efficiency of its process, the Commission is also committed to enhancing educational approaches and communications with stakeholders in an effort to address some of the uncertainty around permitting. In FY 2018, the Commission posted a comprehensive flowchart detailing the review process for natural gas infrastructure applications on www.ferc.gov. In FY 2019, the Commission will assess its existing brochures, pamphlets, and project specific information posted on its website to determine what other information could be made available to better inform stakeholders. Depending on the results of this assessment, the Commission will work to update these documents in FYs 2019 and 2020.

MONITORING OF RISK FACTORS

A number of risk factors could impact the strategic response over the next two years. Judicial reviews of FERC orders and other agency permits could result in the Commission needing to adjust its review processes, and scope of analysis, and timeline for the review of infrastructure proposals. In addition, many of FERC's initiatives in optimizing the permitting review process are dependent on other Federal and state agencies also improving their Congressionally-mandated review processes. A change in the priorities of these partners could affect the Commission's ability to improve the review process for infrastructure proposals. FERC expects that these factors will continue to be relevant over the next two years and remains committed to ongoing monitoring and mitigation of these risks, as appropriate.



CORE FUNCTIONS

In addition to addressing its strategic priorities, the Commission continued to perform its Core Functions and fulfill its responsibilities as a regulatory agency.

Core Function 2.1.1: Conduct thorough and timely technical review of applications to construct, operate, or modify natural gas and hydropower infrastructure.

To meet the demand for energy, the Commission must respond to energy infrastructure applications with timely and well-reasoned decisions that address all issues presented by the proposals. Therefore, each application undergoes a thorough review as part of FERC's authorization process.

NATURAL GAS PIPELINE, STORAGE, AND LNG PROJECT REVIEW

Demand for natural gas in the United States continues at high levels, and natural gas production continues to increase due to the development of shale gas. Among its many uses, natural gas is a substantial and growing resource for electric power generation, both in the U.S. and in Mexico. The increase in use of natural gas for electric power generation and increased exports of LNG continued this historic trend in 2018. The responsible development of jurisdictional natural gas infrastructure—pipelines, storage, and LNG facilities—is critical in ensuring that natural gas supply can reach market areas.

Pre-Filing. The established pre-filing process is intended to engage stakeholders in the identification and resolution of concerns prior to an applicant filing a formal application with the Commission. Commission staff's active participation and leadership in these efforts allows for the filing of more complete applications. In FY 2018, the Commission conducted the pre-filing review of 8 natural gas pipeline projects. The Commission anticipates 6 natural gas pipeline projects to be in pre-filing in FY 2019 and 5 in FY 2020. In FY 2018, the Commission conducted the pre-filing review of 5 LNG projects, consisting of both new LNG facilities and modifications of existing LNG facilities, and expects 3 in FY 2019 and 2 in FY 2020.

Post-Filing. Once the application is filed, the Commission is committed to the expeditious completion of the required environmental review consistent with NEPA. At the same time as the environmental review is occurring for natural gas applications, the Commission is also performing an engineering analysis of proposed facilities and reviewing the application to establish initial recourse rates, to ensure that the proposed tariff complies with the Commission's policies and regulations, and to ensure that the accounting treatment is consistent with the Commission's policies and regulations. Together, these activities provide for an efficient, timely, and well supported determination by the Commission. In FY 2018 the Commission authorized 68 natural gas pipeline projects, which result-

ed in approximately 1,916.85 miles of additional pipeline and 1,565,528 horsepower of mainline compression. The Commission expects the number of natural gas pipeline project applications to decrease in FYs 2019 and 2020; however, the level of demand for gas-fired electric generation and LNG exports remain high. One LNG project filed an application in FY 2018. In addition to previously pending LNG projects, this resulted in the Commission's processing of 15 applications for new LNG facilities or modifications to existing LNG facilities. Based upon industry filings with the Department of Energy and industry information provided during pre-filing meetings with Commission staff, the Commission expects three new LNG export terminal applications to be filed with the Commission through FY 2019.

Outreach. The Commission regularly conducts natural gas environmental training seminars to provide guidance and insight on the Commission's environmental review process and compliance-related matters. These sessions, which provide an opportunity for open dialogue between Commission staff and stakeholders, are typically attended by state, local and federal agency officials, natural gas company representatives, construction contractors, and consulting firm staff. These sessions provide information on the filing requirements for environmental reports, reporting requirements for blanket certificate projects, new regulations, an overview of the Commission's baseline construction and mitigation measures, and more. The seminars are instrumental in developing the understanding of and successful adherence to the Commission-issued certificates and authorizations. Further, the seminars focus on application filing requirements should help applicants to prepare more robust applications that can be reviewed more expeditiously. In FY 2018, Commission staff conducted three environmental training seminars and participated in several outreach sessions to natural gas companies and federal permitting agencies, addressing the Commission's certificate and environmental review processes. In addition, the Commission staff also conducted an LNG training seminar in FY 2018 to specifically provide guidance on the Commission's environmental and engineering review process for LNG projects. In FYs 2019 and 2020, the Commission proposes to conduct three natural gas environmental training seminars each.

In addition, E-Learning Modules were developed and made available on the FERC website in FY 2018 to provide a free overview/supplement to the seminars. These online modules

are an easily accessible outreach tool to provide all stakeholders access to information relating to FERC’s environmental review process and project construction compliance.

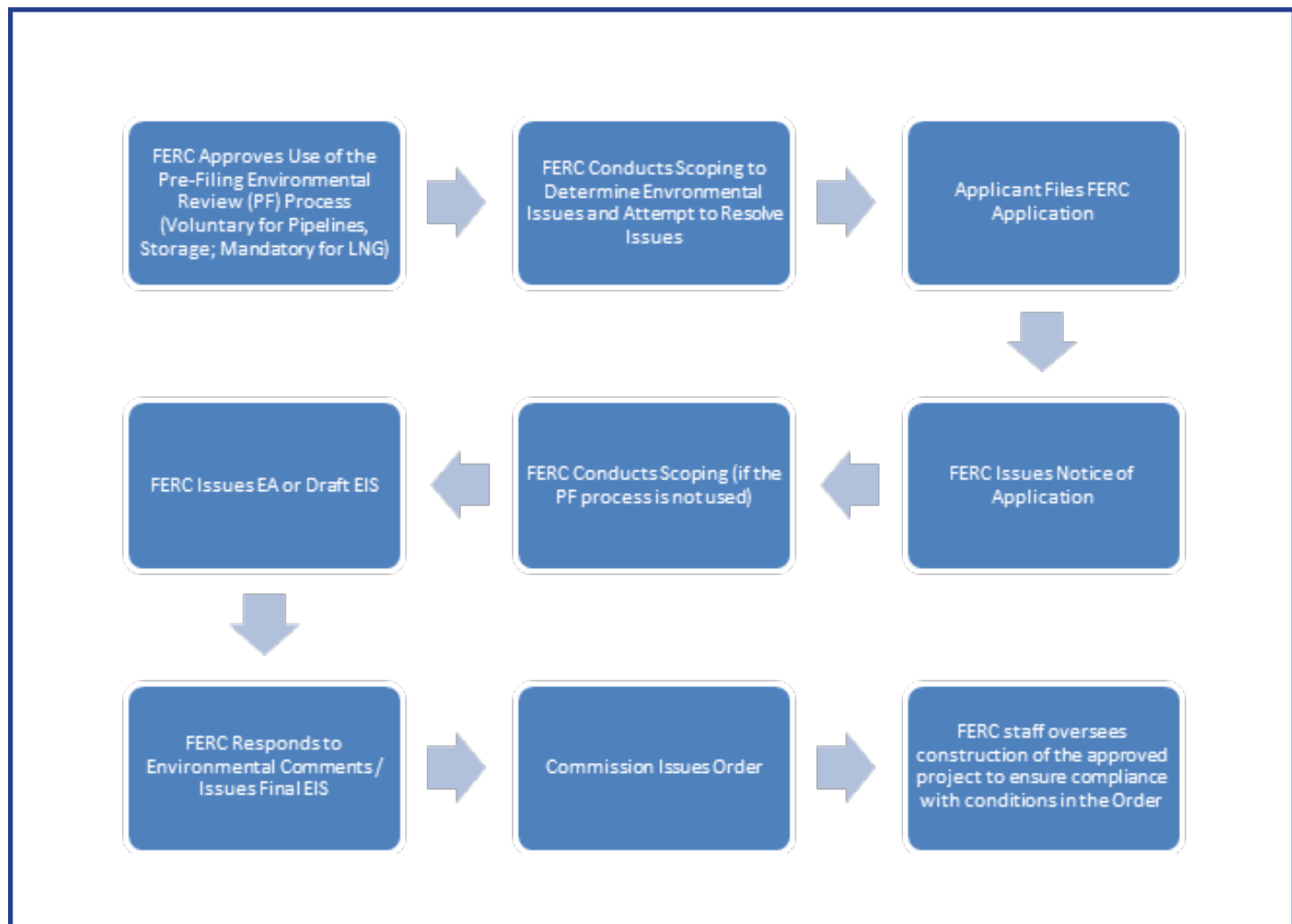
In FY 2018, Commission staff continued to extend its outreach efforts to federally-recognized Native American tribes to enhance their participation in the Commission’s environmental review process for natural gas pipeline proceedings and provide for a robust review of natural gas infrastructure proposed in these proceedings. FERC staff wrote 141 letters to various Indian tribes seeking input on 11 proceedings and FERC staff held or attended 8 meetings with various tribes. In addition, Commission staff participated in conferences, meetings, and teleconferences with representatives of tribes throughout the country who are interested in the review of natural gas projects. We expect a similar level of tribal outreach effort in FYs 2019 and 2020.

HYDROPOWER PROJECT REVIEW

Hydropower projects offer the benefits of a reliable, flexible, renewable, domestic energy source that supports efficient,

competitive electric markets. Hydropower projects can also provide other public benefits such as environmental protection and enhancement, water supply, irrigation, recreation and flood control.

Pre-Filing. The pre-filing process typically begins three years prior to the filing of a license application. Throughout this process, Commission staff consults with stakeholders to identify issues, develop study plans, address issues, and ensure that the licensing proposal is complete by the time the application is filed. During FY 2018, Commission staff completed 13 pre-filing processes. The Commission anticipates that approximately 60 new pre-filing processes will commence in FY 2019, which will add to the 55 pre-filing processes that will continue into FY 2019 from prior fiscal years. The Commission anticipates that approximately 25 new pre-filing processes will commence in FY 2020, which will add to the 86 pre-filing processes that will continue into FY 2020 from prior fiscal years. In the course of these processes, the Commission expects its staff to attend about 40 scoping and study plan, and tribal consultation meetings in FY 2019, which is about the same amount as FY 2018.





Post-Filing. Commission staff conducts a NEPA analysis on most hydropower project applications with the exception of conduits. The Commission is responsible for ensuring that the environmental document analyzes the project's effects on potentially affected resources, including geology and soils, aquatic resources (including water quality), terrestrial resources, threatened and endangered species, recreation, land use and aesthetic resources, and cultural resources -- and examines alternatives and makes recommendations for protection, mitigation, and enhancement measures to be included in any license issued. In FY 2018, Commission staff issued 21 environmental documents, with the final environmental document being issued on average about nine months after the date that reply comments were due on the Notice of Ready for Environmental Analysis. Commission staff expects to issue about 30 environmental documents and participate in 25 post-filing public meetings associated with its environmental analysis of hydropower applications in FYs 2019 and 2020.

The Commission also processes preliminary permit applications and monitors compliance with issued permits. A permit guarantees the holder "first-to-file" status for a particular site in cases where multiple applications are received by the Commission for a hydropower license. Permits also allow the holder to study a particular site for four years with the potential for an up to four-year extension for a total of up to eight years.

A permit does not authorize construction, nor is a permittee required to apply for, or receive, a license. In FY 2018, there were over 80 permits in effect.

In FY 2018, the Commission acted on nine license applications representing a total capacity of 167 megawatts. In FY 2018, the Commission received 13 license applications of which three were for original projects and 10 were for projects with expiring licenses. In FY 2019, the Commission expects to receive seven original license and small hydropower exemption applications.

In FY 2018, Commission staff completed 3,752 amendment-related filings. These filings included completing 276 plans for Commission approval. Commission staff issued six environmental assessments on amendment applications, with an average processing time of eight months. In FY 2018, the Commission acted on nine license surrender applications, which terminated Commission jurisdiction for each of these nine projects. In FY 2018, the Commission acted on 30 transfer of license or exemption applications. In FYs 2019 and 2020, the Commission expects to issue three environmental assessments on proposed amendments each year.

Outreach. In the past several years, Commission staff has held workshops to assist licensees with specific issues. In late FY 2018, staff held a shoreline management workshop in north-east Oklahoma that was attended by approximately 64 attendees representing 24 licensees from across the country to discuss shoreline management issues along project reservoirs, including: shoreline erosion; aquatic resources; public outreach programs; licensed project purposes; and shoreline monitoring, permitting, and enforcement practices. In April 2018, staff held a recreation workshop at Auburn University that was attended by approximately 60 individuals representing 17 licensees to discuss recreation management issues including: recreation ecology (impact of recreation on the environment); economic development for local communities via outdoor recreation opportunities; using partnerships to manage recreation facilities; and recreation management plan considerations. Based on the feedback from licensees at these workshops, Commission staff anticipates providing additional recreation and shoreline management workshops in FYs 2019 and 2020.

The Commission also regularly conducts hydropower licensing training sessions to provide guidance on how to obtain a license or exemption and how to effectively participate in the licensing and exemption processes. The sessions are typical-

ly attended by prospective licensees, federal and state natural resource agency personnel, Indian tribes, and members of the public, and cover such topics as what licensing process to use, when to file comments and recommendations for license or exemption conditions, and how to officially intervene in a license or exemption proceeding. In FY 2018, Commission staff conducted outreach sessions with Indian tribes, federal and state agencies, and hydropower industry personnel to prepare for the increased relicensing workload which began in FY 2016 and will continue beyond FY 2030. The Commission expects to conduct additional sessions in FY 2019 and FY 2020.

Commission staff has also continued to extend its outreach efforts to federally-recognized Native American tribes to enhance their participation in the Commission's environmental review process for hydropower projects. In FY 2018, FERC staff wrote 31 tribal letters seeking input for 32 proceedings to various Indian tribes and Native American organizations and FERC staff held or attended 9 meetings with various tribes and Native American organizations regarding hydropower proceedings. These included consultation meetings with representatives of six tribes for PacifiCorp's Klamath and Lower Klamath Projects and seven tribes for Grand River Dam Authority's Pensacola Hydroelectric Project.

CORE FUNCTIONS

In addition to addressing its strategic priorities, the Commission continued to perform its Core Functions and fulfill its responsibilities as a regulatory agency.

Core Function 2.1.2: Ensure natural gas and hydropower infrastructure is constructed and operated in compliance with environmental mitigation conditions in FERC orders.

The Commission conducts environmental inspections of licensed and exempted hydropower projects and authorized natural gas pipelines and LNG facilities to evaluate and assess compliance with environmental conditions of the Commission's Orders.

NATURAL GAS PIPELINE INSPECTIONS

The Commission's on-site environmental inspection program assesses implementation and compliance with the environmental protection and mitigation measures in its authorizations for natural gas pipeline facilities.

While major pipeline facilities are under construction, Commission staff conduct inspections at least once every 28 days to ensure adherence to the prescribed environmental measures. An optional program may also include full time third-party inspectors who provide a compliance summary report to the Commission staff on a weekly basis. Compliance inspections are conducted throughout the construction and restoration phase, until project sites are deemed successfully restored. Staff require corrective actions for deficiencies in environmen-

tal compliance identified during construction and restoration inspections. Similarly, landowner concerns received directly by staff or via the Commission's Landowner Helpline can be more efficiently and effectively resolved by on-site review during construction and restoration inspections. In FY 2018, 716 natural gas facility compliance inspections were completed at pipeline project sites, and the Commission expects to conduct a similar number of inspections in FY 2019 as many of the projects will be ongoing into FY 2019. In FY 2020, the Commission expects the number of pipeline facility construction inspections will decrease to 550 compliance inspections.

NATURAL GAS PIPELINE, STORAGE, AND LNG ON-GOING MONITORING AND COMPLIANCE

Commission staff conducts post-construction restoration inspections of pipeline facilities after the first and second growing seasons, at a minimum. Staff also conducts restoration inspections of certain projects completed under blanket certificate authority which are reported annually. Quarterly and annual reporting is required for pipeline facilities following

construction for at least two years following commencement of service to ensure the success of revegetation, identify corrective actions taken, and address landowner concerns. Wetland restoration reports are required within three years after construction to identify the status of the wetland revegetation efforts and document restoration success. Staff reviews all quarterly and wetland restoration reports to ensure compliance with the Commission's requirements for successful restoration of authorized project activities.

NATURAL GAS PIPELINE, STORAGE, AND LNG ANNUAL REPORTING

Commission blanket regulations require regulated companies to file annual reports each year documenting any activities performed under these regulations. In FY 2018 regulated companies filed 157 reports under 18 C.F.R. 157.207; 148 reports under 18 C.F.R. 2.55; and 90 reports under 18 C.F.R. 284.11 for a total of 394 annual reports which were reviewed by staff. The Commission expects to receive and review a similar number in each of FYs 2019 and 2020.

HYDROPOWER ENVIRONMENTAL INSPECTIONS

The Commission conducts environmental inspections of licensed and exempted projects to evaluate and assess compliance with environmental and public use conditions of licenses. Environmental and public use requirements typically result from terms and conditions specified by the state and federal resource agencies during the licensing and exemption processes. Environmental inspectors look at the required environmental protection and enhancement measures at a project and work with licensees and exemptees to identify common problem areas and assist them with their responsibilities for maintaining compliance with license conditions.

The nature and frequency of environmental inspections at licensed or exempted projects depends on the type of environmental and public use impacts. Generally, those projects with significant environmental or public use requirements such as high recreational use, fish passage facilities, and wildlife mitigation areas are inspected on 5-8 year cycles. The vast majority of projects under the Commission's jurisdiction are inspected much less frequently. In FY 2018, the Commission inspected 69 hydropower projects; and for FYs 2019 and 2020, it is projected that the Commission will inspect approximately 80 each

year. With over 1,200 projects under the Commission's jurisdiction, the rate at which an environmental inspection occurs at any project over the course of a 40-50 year license term, is limited.

In FY 2018, Commission staff completed a total of 127 engineering reviews for construction and maintenance activities at Commission-licensed projects; 101 of these instances required more detailed environmental reviews to ensure compliance with all environmental laws.

HYDROPOWER ON-GOING MONITORING AND COMPLIANCE

Section 13 of the FPA sets the deadlines for the commencement of construction of project works for hydroelectric projects. These deadlines apply to new, unconstructed licensed hydroelectric projects and to the redevelopment of existing sites that were previously used for non-power purposes or that had been previously abandoned. Section 13 of the FPA states that a licensee must commence construction within the timeframe fixed in the license, which shall not be more than two years from the issuance date of the license. The period for commencement of construction may be extended once, but not longer than two years. If the licensee has not commenced construction within the time prescribed, or as extended by the Commission, the Commission must terminate the license. America's Water Infrastructure Act of 2018 will allow the Commission to grant additional extensions to commence project construction for not more than eight years from the issuance of the license; and it is expected that more projects are likely to request additional extensions of time for commencement of project construction in FYs 2019 and 2020.

Commission staff reviews licensees' and exemptee's compliance with requirements and terms and conditions specified in license or exemption orders and approved plans. Typical examples of instances of non-compliance include: minimum flow deviations, reservoir elevation deviations, water-quality deviations, and deviations of required fish passage facility operations. Commission staff completed 382 investigations of deviations from project operations in FY 2018. In most cases, the licensees and exemptees were not found in violation of their requirements. The Commission anticipates completing a similar number of investigations regarding deviations in FYs 2019 and 2020.

PERFORMANCE MEASURE

Commission staff will use the following measure to assess performance in Objective 2.1. The result of this measure will be used in combination with other data and supplemental information to establish a more complete picture of performance on this objective.

Objective 2.1 Performance Measure: Percent of orders issued within established timeframes

Description. The results for hydropower and natural gas orders are compiled separately and have different targets due to the inherent differences in the two programs.

| % of hydropower orders issued within 24 months | | | | | | | |
|---|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| FY 2014 Actual | FY 2015 Actual | FY 2016 Actual | FY 2017 Actual | FY 2018 Actual | FY 2018 Target | FY 2019 Target | FY 2020 Target |
| 80% | 94% | 89% | 96% | 90% | 90% | 90% | 90% |
| FY 2018 Target: Met | | | | | | | |

| % of natural gas orders issued within the appropriate timeline depending upon the category | | | | | | | |
|---|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| FY 2014 Actual | FY 2015 Actual | FY 2016 Actual | FY 2017 Actual | FY 2018 Actual | FY 2018 Target | FY 2019 Target | FY 2020 Target |
| 92% | 88% | 96% | 76% | 82% | 90% | 90% | 90% |
| FY 2018 Target: Not Met | | | | | | | |

Data Table and Interpretation of Data. For hydropower orders, 90% (9 of 10 cases) were issued within the established timeframe, which demonstrates a slight decrease in performance relative to FY 2017. For natural gas orders, 82% (42 of 51 cases) were issued within established timeframes, which demonstrated an increase in performance relative to FY 2017. Overall the results do not show any noticeable trend.

Analysis. Of the nine untimely gas orders, three were heavily contested, large greenfield pipelines; five were contested pipeline expansions; and one was a contentious service area determination presenting jurisdictional issues of first impression. The untimely hydro order missed the timeframe by one month. In general, orders were delayed as a result of projects involving facilities that were larger in scope and complexity; required extensive coordination with other federal permitting agencies; required the resolution of complex environmental or engineering issues; and/or the applicant submitted new information about the project after filing an application.

The FY 2018 results reflect FERC’s continued efforts to coordinate with other agencies to ensure they have the necessary in-

formation to complete their reviews in a timely fashion. FERC also continued to encourage and help applicants to effectively utilize the pre-filing process, which significantly increases the likelihood that applicants provide all the necessary information. In FY 2018, the Commission also took action to improve the timeliness of processing applications through execution of a Memorandum of Understanding implementing Executive Order 13807. The Commission plans to continue these efforts into FYs 2019 and 2020 and the targets for the next two years will remain at 90%.

Several risk factors may impact the FY 2019 and FY 2020 results. The results will continue to be impacted by the quality and completeness of filed applications. In addition, an expected surge in applications could cause a “backup” at other federal and state agencies who play a role in our process. In the hydro program, statutory filing requirements (e.g., state water quality certifications and federal fish and wildlife agencies’ biological opinions) could cause delays in the issuance of orders.

Cross Agency Priority Goal

The Commission has been named as an Agency Partner to achieve a Cross-Agency Priority (CAP) Goal. CAP Goals have been established to drive implementation of the President’s Management Agenda and tackle critical government-wide challenges that cut across agencies.

Per the GPRA Modernization Act requirement to address CAP Goals in the agency strategic plan, the annual performance plan, and the annual performance report, please refer to www.Performance.gov for the agency’s contributions to those goals and progress, where applicable. The Commission currently contributes to the Modernizing the Infrastructure Permitting Process CAP Goal.

As a lead agency responsible for the environmental review of non-federal hydropower, interstate natural gas facilities, and natural gas import/export projects, the Commission contributes to this CAP Goal by providing a more predictable and transparent review process, based on concurrent and synchronized evaluations with other agencies. In accordance with the CAP Goal, the Commission will seek to review proposals within an average of two years from complete application to decision. FY 2018 contributing results, along with planned activities and performance goals for FYs 2019 and 2020 have been described more fully throughout this Objective.

Objective 2.2

MINIMIZE RISKS TO PUBLIC ASSOCIATED WITH FERC-JURISDICTIONAL ENERGY INFRASTRUCTURE

The Natural Gas Act and the Federal Power Act, among other statutory authorities, charge FERC with ensuring that energy infrastructure, once authorized, continues to operate safely and reliably. Failure of LNG or hydropower infrastructure due to structural issues, unsafe operations, natural disasters, cyber and physical attacks, or other hazards can result in loss of life as well as environmental and economic consequences. In addition, the Energy Policy Act of 2005 amended the Federal Power Act to give FERC authority with respect to reliability standards for the bulk-power system and oversight of an Electric Reliability Organization (ERO). In fulfilling these responsibilities, it is critical that FERC minimize risks to the public associated with FERC-jurisdictional energy infrastructure.

FERC achieves this objective through a range of activities. FERC conducts timely safety reviews and inspections with rigorous requirements, thereby advancing the safety of non-federal hydropower projects and LNG facilities throughout their entire life cycle. FERC also oversees the development and review of mandatory reliability and security standards for the bulk-power system, as well as compliance with these standards. In addition, FERC collaborates with regulated entities and other federal and state governmental agencies to identify and seek solutions to cyber and physical threats to FERC-jurisdictional infrastructure, facilitating proactive efforts that prevent or mitigate loss or damage.

SITUATIONAL ASSESSMENT

The Commission took specific actions to address strategic issues and opportunities described in the FY 18-22 Strategic Plan.

Situational Assessment Item 1: Public and Environmental Safety Impacts

The Commission has witnessed recent incidents at jurisdictional facilities that have highlighted the safety and environmental impacts that can be associated with hydropower and natural gas infrastructure.

IMPLEMENTING THE STRATEGIC RESPONSE

The Commission will take additional actions to address emerging public and environmental safety issues:

- Focus on identifying areas for improvement based on the results of the peer review analysis of the Commission's dam safety program performed after the Oroville incident.
- Continue to improve the Commission's compliance program to ensure that the regulated community is held to the high standards set forth in project-specific certificate conditions.

In FY 2017, the Commission engaged an outside team of experts to evaluate its dam safety program. This panel conducted a review during FYs 2017 and 2018 and issued recommendations to the Commission in early FY 2019. The overarching recommendations to the Commission focused on bolstering the existing program to ensure that its effectiveness is increased. The Commission is currently reviewing all of the recommendations with the goal of outlining an action plan and beginning implementation during FY 2019.

Lessons learned in dealing with natural gas project construc-

tion provided an opportunity to further increase the effectiveness of the Commission's programs. Issues that developed in horizontal directional drilling across wetlands and water bodies resulted in the Commission setting up an internal working group in FY 2018 to evaluate past incidents and develop guidance for the regulated community. The guidance is intended to provide the regulated community with best planning practices to allow them to minimize the number and severity of potential impacts to the environment from horizontal directional drilling activities. The Commission issued draft guidance for comment at the beginning of FY 2019 and expects to issue final guidance addressing any substantive comments by the end of the fiscal year.

A high density of pipeline construction projects in areas of steep topography, coupled with record amounts of rain, served to highlight the need for more efficacious restoration and stabilization approaches. Going forward in FY 2019, the Commission will request that project sponsors provide additional steep-slope project review assessments for proposed pipelines where routing is unable to avoid side-slope cuts that could lead to situations which undermine the integrity of the right-of-way. In addition, the Commission will investigate what additional commitments can be required of project sponsors to increase rapid restoration efforts and minimize winter construction/stabilization.



MONITORING OF THE RISK FACTORS

At this point, FERC has not identified any significant risk factors that could impact the implementation or impact of strategic response over the next two years. The Commission will

continue to monitor this item and responsive activities to ensure it is fully addressed and potential risks are timely identified and managed.

Situational Assessment Item 2: New and Evolving Threats

FERC-jurisdictional infrastructure and facilities are at increased risk from new and evolving threats, including physical and cyber security threats, by sophisticated perpetrators that often have access to significant resources.

strengthened or best practices applied.

- Work with other federal agencies to improve information sharing and awareness of interdependencies and the need to address critical infrastructure issues using a holistic approach as opposed to acting in isolation.

IMPLEMENTING THE STRATEGIC RESPONSE

In light of such threats, the Commission will implement a variety of actions:

- Strengthen internal expertise related to the cyber and physical security of jurisdictional facilities through hiring of additional qualified staff, enhanced training and educational activities.
- Apply, as appropriate, staff expertise related to cyber and physical security in inspections, audits, and reviews to help regulated entities improve their responses to threats and their overall security posture; assist owners and operators of jurisdictional facilities in recognizing vulnerabilities within their facilities; and provide guidance about how to improve security and reduce risk to themselves and the public.
- Conduct oversight activities to observe the implementation of cyber and physical security at jurisdictional facilities and to identify areas where reliability and security standards can be

FERC has taken a number of actions to address this issue, including working with NERC to develop new guidance materials for industry. Physical and cyber security remains a priority area for NERC as shown in its annual assessment of the state of reliability of the bulk-power system. In response to FERC direction, NERC has taken steps to improve the cyber security posture of the bulk-power system. This includes proposing new and modified reliability standards that augment the electric industry's cybersecurity posture by requiring jurisdictional entities to mitigate certain cybersecurity risks associated with the supply chain for cyber systems. The supply chain threat concerns, among other things, malicious software that could be embedded in equipment supplied to jurisdictional entities.

Statistics on cyber events collected by other agencies indicate ongoing and frequent attacks against critical infrastruc-

ture. FERC has also directed improvements to the reporting of cyber incidents so that timely information is collected and disseminated to mitigate cyber security threats and assess the success of efforts to improve cyber security.

The FERC-led CIP audits are also a response to this situational assessment item. FERC auditors have indicated that the audited entities are finding value in the audit process, the resulting recommendations and advice. Interactions with inspected entities and their feedback suggest that the audits are having a positive impact and are helping entities improve their security posture.

The Commission also incorporated cyber-security into the Commission's dam safety security program, beginning in FY 2016. Licensees of jurisdictional facilities were asked to assess their cyber assets (e.g. control systems and components that make up control systems) to ensure that proper protection measures were in place. Commission staff developed a self-assessment tool to help licenses identify gaps within their cyber security program. Licensees were to report their results to FERC, and then implement measures to fulfill those gaps, as necessary. In FY 2017, licensees that fell under the Commission's cyber-security program were also directed to implement cyber-security measures using the NIST Standards 800 Series, which are also included in the self-assessment tool.

Building on these extensive efforts, in FY 2018, Commission staff began assessing both physical and cyber-security requirements as part of their routine dam safety inspections. Staff reviewed the required self-assessment to ensure issues were reviewed and reported, and then discussed any identified gaps with the licensee. As an additional program enhancement, starting in FY 2017, and continuing on in FYs 2018 and 2019, cyber security reviews were incorporated into special security inspections. This is expected to continue on in FY 2020 and beyond.

In FY 2018, through formal and hands on training with partnering federal agencies, the Commission continues to develop its cyber-security expertise. The Commission will continue these activities in FY 2019 and has allocated resources to begin standing up a more focused cyber security component of the Commission's dam safety program.

In addition, FERC is collaborating with other agencies on continuing its architecture assessment program whereby different stakeholders share experiences, vulnerabilities, and best practices. The results of the assessments will be used to develop guidance that can benefit all jurisdictional entities.

Recently, TSA asked FERC to help conduct pipeline security reviews. The feedback from the asset owners and operators has been positive. There have been instances where a critical vulnerability was identified and fixed during one particular as-

essment where the company did not want to wait until the end of the assessment to address it.

The Commission has also begun recruiting senior and entry level security professionals. Over the coming year, the Commission will continue its recruitment efforts, along with several other initiatives. FERC will continue to conduct CIP audits and collaborate with NERC to develop guidance material and improve reliability standards. FERC will also focus on enhancing its partnerships with other federal agencies and stakeholders and identifying opportunities for collaboration.

Although the strategic response is still in the early stages of implementation, FERC expects to see more direct impacts over the next two years, including improved compliance programs and increasing implementation of best practices. FERC also expects to obtain more and higher quality information that will enable a greater understanding of evolving cyber and physical security issues.

The implementation of the strategic response faces a number of risk factors that could affect the effectiveness of the Commission's actions. In regard to reliability standards, jurisdictional entities vary in their ability to implement them, for

MONITORING OF THE RISK FACTORS

myriad reasons. This is also true for best practices, which are voluntary. Further, FERC's efforts are impacted by the fact that cyber threats evolve at a faster rate than the process to design and implement mandatory and enforceable standards.

FERC's efforts to hire qualified individuals also faces challenges. In the current economic climate, it is difficult to find and retain people with cyber and physical security expertise. The Commission is exploring opportunities to improve its competitiveness in this field.

FERC expects that these factors will continue to be relevant over the next two years and remains committed to ongoing monitoring and mitigation these risks, as appropriate.

Situational Assessment Item 3: New Challenges to Bulk-Power System Performance

Multiple internal and external factors -- including the development, application and increased penetration of new technologies, including electric storage; the deployment of distributed energy resources; increased dependence on computing and telecommunications; and threats from extreme weather and natural disasters -- are creating new challenges and opportunities to maintain and improve reliability, security, and resilience. All of these trends are occurring in an environment of greater customer needs, expectations, and capabilities.

IMPLEMENTING THE STRATEGIC RESPONSE

To address this item, the Commission will conduct monitoring, analysis of bulk-power system performance, the targeted application and oversight of market rules and mandatory reliability standards, oversight of the ERO, and engagement with interested industry members and groups to promote additional best practices.

Recognizing the importance of all resources contributing to reliability of the bulk-power system, in February 2018, FERC changed pro-forma generator interconnection agreements to require all newly connecting generators, whether synchronously or asynchronously connected, to have a governor or equivalent controls to ensure that the ability to provide primary frequency response exists in the evolving generation fleet. There is every indication that factors such as these will continue impact the performance of the bulk-power system.

In FY 2018, FERC improved its access to information and obtained more direct access to NERC databases, particularly outage data. FERC has also conducted more focused analyses to identify issues that are related to the new challenges and changes to bulk-power system performance.

In addition, FERC collaborated with NERC in developing best practices documents specifically directed at helping industry maintain reliability in the face of the changes and new challenges. For example, a report released in May 2018 assessed a selected number of entities' plans for restarting the grid after a widespread blackout⁸. In FY 2018, FERC also approved a modified reliability standard developed by NERC to better address the risks posed to the bulk-power system by extreme solar events.

In FY 2018, FERC has also conducted targeted CIP audits that have provided new insights into how regulated entities are dealing with emerging reliability, security, and resilience challenges.

For example, the report recommends that entities disable all other network connections when performing interactive remote access to certain cyber assets. FERC staff documented these insights in a publicly available lessons learned report⁹. The impacts of the strategic response will be seen in changes in the capabilities and practices of providers, operators, coordinating entities and managing authorities. Although the strategic response is still in the early stages of implementation, Commission staff have seen general positive changes in the security posture of regulated entities during the course of performing and observing cybersecurity audits and will continue to monitor changes in bulk-power system performance in accordance with its strategic plan.

In FYs 2019 – 2020, FERC will continue to build on and use its monitoring and analysis capabilities to study how various external factors and changes may affect reliability, security, and resilience. FERC will also continue to work with NERC, when appropriate, to improve standards and develop guidance.

MONITORING OF THE RISK FACTORS

The implementation of the strategic response faces a number of risk factors that could affect the effectiveness of the Commission's actions. Industry's adoption of best practice recommendations is voluntary. The strategic response also involves the revision or development of reliability standards, which may take place at a slower rate than technology development and the emergence of other challenges. FERC expects that these factors will continue to be relevant over the next two years and remains committed to ongoing monitoring and mitigation of these risks, as appropriate.

⁸ FERC-NERC-Regional Entity Joint Review of Restoration and Recovery Plans: Blackstart Resources Availability Study, available online at <https://www.ferc.gov/legal/staff-reports/2018/bsr-report.pdf>.

⁹ Lessons Learned from the Commission-Led CIP Version 5 Reliability Audits, available online at <https://www.ferc.gov/legal/staff-reports/2017/10-06-17-CIP-audits-report.pdf>.

THE FREQUENCY OF DAM INSPECTIONS AS DETERMINED BY ITS HAZARD POTENTIAL CLASSIFICATION

| Hazard Potential Classification | Possible Effects | Inspection Schedule |
|---------------------------------|---------------------------------|---------------------|
| High | Loss of human life | Annually |
| Significant | Environmental and economic loss | Annually |
| Low | None Expected | Every 3 years |

CORE FUNCTIONS

In addition to addressing its strategic priorities, the Commission continued to perform its Core Functions and fulfill its responsibilities as a regulatory agency.

Core Function 2.2.1: Conduct comprehensive and timely inspections of hydropower and LNG facilities to ensure compliance with the Natural Gas Act, the Federal Power Act, and Commission orders.

Failure of a non-federal hydropower project or LNG facility potentially can result in significant safety, environmental, economic consequences. To fulfill its responsibility for ensuring the safety of non-federal hydropower projects, the Commission relies on physical inspections for detecting and preventing potential catastrophic structural failures. In regards to jurisdictional LNG facilities, the Commission conducts construction and operational inspections to ensure that the facilities are constructed and operated in accordance with the conditions of Commission Orders, including safety measures and plans. Inspections at both types of facilities protect the public against the risks associated with incidents at the facilities.

HYDROPOWER INSPECTIONS

Commission engineers are highly trained and work closely with local and other federal officials at all stages of project development and operation. Before projects are constructed, the designs, plans, and specifications of the proposed facility are reviewed and approved. Through regularly scheduled and comprehensive inspections during construction and operation, Commission engineers verify that dams meet stipulated design criteria, identify necessary remedial modifications or required maintenance, and ensure compliance with requirements. This approach allows the Commission to ensure the safety of the public, as well as the continued operation of the facilities to meet the energy demands of the nation. In FY 2018, Commission staff conducted 1,726 inspections and expects to continue to perform a similar amount in FYs 2019 and 2020.

The Commission also requires comprehensive inspections and engineering evaluations of the high and significant hazard potential dams by independent consultants every five years. All independent consultant inspection reports are thoroughly reviewed and evaluated by the Commission to determine whether additional studies are required or if remedial measures are necessary. Commission staff review approximately 200 independent consultant reports each year to make certain the structural integrity of the jurisdictional dams is maintained or improved as appropriate. The Commission expects the number of independent consultant inspection report reviews to remain steady through FY 2020.

HYDROPOWER GUIDELINES

In addition to conducting inspections, the Commission's dam safety program includes other components to minimize risk to the public. Dam safety engineering guidelines are published to provide guidance to licensee, or consultant, conducted inspections and analyses. The guidelines include the procedures and criteria for the engineering evaluation and analysis of hydropower projects. The Commission's surveillance and monitoring component provides methods to better identify and solve dam safety issues and improves coordination, abilities, and trust among all stakeholders. Another component of the dam safety program is the emergency action plans, which are required for all jurisdictional dams. Emergency action plans require the development, maintenance, and periodic testing of project-specific plans for emergency response, including ensuring coordination and cooperation among the dam owners, state, and local emergency management agencies, and the Commission.

During FY 2018, Chapter 13 of the Engineering Guidelines, Evaluation of Earthquake Ground Motions, was finalized. This guideline will help Commission staff and Licensees and their consultants to more effectively assess the potential impacts of seismicity to Commission regulated projects. During FY 2018, Chapter 11, Arch Dams, was fully updated and finalized. This updated guideline will help Commission staff, Licensees and their consultants to better assess Arch Dam failure modes and their evaluation and assessment. Risk-informed decision making provides the capability to assess non-traditional failure modes, levelize risk across different loading conditions, focus inspections and surveillance on the specific potential failure modes and monitoring programs at projects, and guide remediation projects to provide an overall reduced level of risk to the public. In FYs 2019 and 2020, the Commission will continue implementation of Risk-informed decision making through completion of several pilot projects, and continue to train Commission staff, dam owners, and consultants in risk assessment procedures, methodologies and tools. Refinement of the guidelines and procedures will continue to be carried out in an open, collaborative process with representatives of the hydropower industry, including Commission-regulated licensees. Additionally, Risk-informed decision making will be assessed for use internally within the Commission's dam safety program to potentially optimize the use of resources where they can best be focused. These efforts will run parallel to the traditional dam safety inspections and together will ensure public safety.

LNG INSPECTIONS

To assess whether a facility may have a public safety impact, Commission staff conduct a comprehensive environmental and engineering review process that includes working very closely with other federal agencies such as the U.S. Coast Guard and the Department of Transportation who establish and enforce the LNG safety and security standards. If a facility is authorized, the Commission is responsible for conducting inspections during construction and subsequently, during facility operation, to ensure compliance with the requirements includ-

ed in the Commission authorization. While facilities are under construction, Commission engineers conduct inspections at least once every twelve weeks. In FY 2018, 30 inspections were conducted at the five terminal expansions and one new LNG terminal under construction. Between 30 and 40 construction and pre-operational inspections are anticipated for FY 2019 at these six LNG terminals and at one peak shaving facility. In FY 2020, the Commission anticipates that the number of LNG facility construction inspections may increase depending on the outcome of the 11 pending LNG export terminal projects currently before the Commission. In addition, there are three previously approved LNG export projects that have not commenced construction. Depending on market conditions, the pending and approved projects may move forward with construction in the next 18 months, which could significantly increase the number of construction and pre-operational inspections in FY 2020.

Once in operation, jurisdictional peak-shaving plants are inspected once every other year and LNG import or export terminals are inspected once each year. In FY 2018, 14 operational inspections/technical reviews were conducted at seven peak-shaving facilities and seven LNG terminals. The number of operational inspections is expected to be 13 in FY 2019 and 15 in FY 2020.



Core Function 2.2.2: Protect and improve the reliable and secure operation of the bulk power system by identifying reliability and security risks, overseeing the development, implementation and enforcement of mandatory standards and promoting the resilience, reliability and security posture of the bulk power system.

Our Nation depends on reliable electricity as an essential resource for national security, health and welfare, communications, finance, transportation, food and water supply, heating, cooling and lighting, computers and electronics – in short, nearly all aspects of modern life. The bulk power system is in the midst of significant changes with respect to the resources used to generate electricity, the technologies used to transmit and manage electricity, and the structure of the electric sector itself. These changes present new opportunities and challenges regarding the reliability, affordability, and environmental pro-

file of each region's electric system. The Commission's oversight of bulk power system reliability and security helps to ensure that the bulk power system continues to support U.S. prosperity and security.

RELIABILITY OF THE BULK POWER SYSTEM

EPAAct 2005 amended the FPA to charge FERC with overseeing the development and enforcement of mandatory reliability standards applicable to the bulk power system through an Electric Reliability Organization (ERO). The Commission certified

the North American Electric Reliability Corporation (NERC) as the ERO. The Commission draws on the substantial expertise of its staff, including electrical engineers with many years of utility industry experience, to facilitate its oversight of those standards. Commission staff analyzes ERO-developed standards to determine whether they support the reliable operation of the grid. The Commission also reviews blackouts and events to determine whether approved standards were violated or should be changed to help prevent future blackouts. In addition to conducting its own audits, investigations, and enforcement actions, the Commission oversees audits, investigations, and proposed penalties of the ERO and the ERO regional entities to help ensure that they result in effective reliability and compliance with mandatory standards. The Commission also communicates with various federal and state agencies, international entities and industry participants on emerging reliability and security issues. Staff engineers review electric rate filings, major Commission rulemakings, and reliability-related cost recovery filings to inform Commission decisions on these items regarding impacts to bulk power system reliability, furthering the Commission's goal of protecting and improving the reliability of the bulk power system. Engineering staff also educates the public on how the bulk power system operates and the Commission's role in overseeing reliability. This ongoing effort led to the publication of a Reliability Primer in FY 2017.

Commission staff operates a 24/7 emergency message notification system and has the capability to monitor the status of the bulk-power system in real-time. Both serve as a means of maintaining bulk power system situational awareness during active events such as storms and wildfires. Senior agency staff are kept apprised of significant approaching weather and other events which could impact reliability. These activities are expected to continue during FYs 2019 and 2020.

The Commission will continue to encourage innovative approaches to maintain and improve system reliability, security, and resilience that will improve the bulk power grid's ability to withstand and recover from abnormal events.

Cyber and Physical Security. The Cyber Planning for Response and Recovery Study (CyPRES) Project was initiated to study response and recovery plans following testing or actual cyber events as a result of recommendations in the Commission's January 2016 Restoration and Recovery Report¹⁰ to gain further understanding of how entities update their response and recovery plans to incorporate lessons learned from events. The Commission, with the ERO and the Regional Entities, observed GridEx IV, the nationwide drill sponsored by the ERO in November 2017, then planned to complete eight (8) site engagements by the end of FY 2018 to gain additional industry insight and to hold structured discussions with indus-

try members. The CyPRES Project will conclude in FY 2019 with a report on the effectiveness and existence of continuous improvement processes for response and recovery plans. In addition, the report will identify best practices with regard to the types of plan improvements made from entities' analyses of actual cyber events and/or testing. Such information could reveal the need or opportunity for improvements to other entities' response and recovery plans and be a valuable component of a continuous improvement process.

Following in-depth discussions with government, industry, and academia in FY 2017, the Commission terminated the Notice of Inquiry on Cyber Systems in Control Centers in October 2017. Commission staff then engaged with the ERO, industry, and other stakeholders to work together to develop a guidance document to gather lessons learned from industry entities for implementing application whitelisting in a CIP environment. The Application Whitelisting Project is scheduled to produce a guidance document in FY 2019 for Registered Entities to explain the value of application whitelisting, what risks can be mitigated and, how Registered Entities can implement whitelisting in their CIP-compliant environments. The Commission will conduct outreach in FYs 2019 and 2020 to introduce the guidance document and promote implementation of whitelisting, as appropriate.

Electric power utilities subject to CIP standards are considering adopting cloud computing services for data storage and potentially for aspects of managing system reliability. As a result, the Commission is working with the ERO to address security and reliability concerns for hardware and BES Cyber System Information in a Cloud Computing Project. The Cloud Computing Project involves the Commission's monitoring of the ERO's efforts, as well as working with entities like the FER-DRAMP Program Office, to better understand potential issues with security and CIP Reliability Standards compliance. In FYs 2019 and 2020, the Commission will continue to monitor Cloud Computing, and other emerging technologies, as they relate to security, reliability, and CIP compliance.

In November of 2014, the Commission approved the first version of the physical security standard for protecting substations, CIP-014-1. In order to understand how well the standard was performing in providing physical security to substations, Commission staff planned to commence a series of FERC-led audits. In preparation for these audits, two observations of Regional Entity audits of CIP-014 will be completed in FY 2018 and one additional observation in FY 2019. Following these observations, Commission staff will commence FERC-led audits of CIP-014 in FYs 2019 and 2020 to assess the adequacy of the standard in mitigating the risks posed by physical attacks.

¹⁰ Report on the FERC-NERC-Regional Entity Joint Review of Restoration and Recovery Plans, <https://www.ferc.gov/legal/staff-reports/2016/01-29-16-FERC-NERC-Report.pdf>.

Natural Threats. Geomagnetic Disturbances (GMDs) are sun-generated magnetic fields that interact with Earth's magnetic field to create electric fields on the earth's surface. These electric fields may create geomagnetically-induced currents (GIC) in long-distance power lines which may cause transformer hot-spot heating or damage, loss of reactive power sources, increased reactive power demand, and protective system misoperations. A large GMD event may result in voltage collapse and blackout. During FY 2018, the ERO filed a modified Stage 2 GMD Reliability Standard and a GMD Research Work Plan. The modified Stage 2 GMD Reliability Standard requires responsible entities to model wide-spread and localized phenomena related to GMD storms and their effects on the power grid. The Commission issued a Notice of Proposed Rulemaking for the Reliability Standard in FY 2018. The GMD Research Work Plan described research activities the ERO plans to complete to improve the understanding of impacts of GMD storms on the power grid. The GMD Research Work Plan was noticed for comment in FY 2018. The Commission issued Order No. 851, a Final Rule for approving an updated GMD Reliability Standard, in November 2018, which included a directive to require the development and implementation of corrective action plans to mitigate assessed supplemental GMD event vulnerabilities. Commission staff will follow the modifications to the Reliability Standard and GMD Work Plan activity through FY 2020.

Changing Bulk Power System. The energy sector is entering a period of significant change, driven by new technologies, changing customer needs, and an increasingly complex set of environmental, reliability, and security challenges. These changes have the potential to provide benefits: The National Academies, for example, recently found that advanced controls and a more distributed energy generation architecture have the potential to prevent or limit widespread electric grid outages by enhancing power quality and allowing problematic components to be isolated¹¹. While modern grid technologies have the potential to improve reliability, integrate new energy resources, and give more choice to the consumer, among other potential benefits, they may also expose security vulnerabilities. Commission staff will participate in ERO and industry emerging technologies working groups and follow closely the research and development of the Department of Energy and the National Laboratories through FYs 2019 and 2020 to remain informed of industry efforts as they relate to the reliability and security of the grid.

RELIABILITY STANDARDS

The Commission oversees in the development of mandatory Reliability Standards for the bulk power system, primarily through regulatory oversight of the ERO and the seven Regional Entities.

The ERO, among other tasks, is responsible for proposing mandatory Reliability Standards and interpretations of approved standards that provide for reliable operations of the bulk power system for the Commission's review and approval. All Reliability Standards and formal interpretations by NERC must be submitted for Commission approval in order to become mandatory and enforceable in the contiguous United States.

Reliability Standards Development Oversight and Review. The ERO develops these standards through an open and inclusive process that involves extensive negotiation, consultation and coordination among many stakeholders. Any of the seven Regional Entities may also develop and propose regional Reliability Standards. The Commission does not have statutory authority to write Reliability Standards. If the Commission does not approve a Reliability Standard or an interpretation of a Reliability Standard, it may remand the filing to the ERO for reconsideration. The Commission may direct the ERO to develop and submit a new or modified Reliability Standard on a specific matter.

The result is a process in which Reliability Standards, once approved, are improved incrementally through subsequent actions by the Commission and ERO. One illustration of this process involves the ERO's Critical Infrastructure Protection (CIP) Reliability Standards. The Commission approved Version 5 of the CIP Reliability Standards in FY 2014, while concurrently directing modifications in several areas. The ERO has submitted, and the Commission has approved several refinements in the intervening years. To further enhance the reliability of the nation's bulk power system, in October 2017, the Commission proposed new cyber security management controls. The Notice of Proposed Rulemaking proposed mandatory controls and modifications to address risks to low-impact cyber systems. In April 2018, the Commission approved the ERO's proposal for controls for low impact BES Cyber Systems. Staff will continue providing support to oversee compliance with these revised and new cyber security Reliability Standards, such as virtualization and securing communications between control centers, through FY 2021. Commission staff will also undertake through FY 2020, the processing of subsequent compliance filings, as well as several oversight activities to support the revision and improvement of the CIP Reliability Standards.

¹¹ National Academies of Sciences, Engineering, and Medicine, "Enhancing the Resilience of the Nation's Electricity System" (Washington, DC: The National Academies Press, 2017).

In December 2017, the Commission proposed development of a revised CIP Reliability Standard to improve mandatory reporting of cyber security incidents, including incidents that might facilitate future attempts to harm reliable operation of the nation's bulk electric system, as well as enhance awareness of existing or developing threats for industry, ERO, the Commission, and the Department of Homeland Security. The Commission adopted its proposal in July 2018. Commission staff's oversight of the ERO's activities and subsequent filings to address the Commission's directive will be ongoing through FYs 2019 and 2020.

In January 2018, the Commission proposed to approve CIP Reliability Standards for supply chain management security controls to protect the bulk power system from security vulnerabilities and malware threats. The Commission also proposed that the ERO develop and submit specific modifications to their proposal in order to better address the vulnerabilities and threats. In October 2018, the Commission issued Order No. 850 Final Rule for Supply Chain Risk Management Standards, which included a directive to expand the scope of the Reliability Standards to include Electronic Access Control and Monitoring Systems. Commission staff will follow modifications to the Reliability Standards, the ERO's activities and subsequent filings through FY 2021.

A review of bulk power system disturbances and risks may necessitate development of a new Reliability Standard or modifications to the existing Reliability Standards. For example, the ERO filed a modified Stage 2 Geomagnetic Disturbance (GMD) Reliability Standard, and a GMD Research Work Plan in early 2018. The Commission issued a Notice of Proposed Rulemaking for the Reliability Standard and noticed the Research Work Plan for comments. A Final Rule for the Reliability Standard and Research Work Plan was issued in November 2018 along with a directive to require the development and implementation of corrective action plans to mitigate assessed supplemental GMD event vulnerabilities. The Commission's oversight of GMD activities will be ongoing into FY 2020.

In FY 2018, the ERO continued work to revise a Transmission Planning Reliability Standard to address two outstanding Commission Order No. 754 directives concerning single points of failure on the bulk electric system. Commission staff's oversight of the ERO's revisions to the Transmission Planning Reliability Standard are expected to continue through FY 2019.

In FY 2016, the ERO began a project to modify several standards to establish and communicate System Operating Limits in the facilities, design, connections and maintenance series of Reliability Standards. The scope of the work changed in FY 2018 to include Reliability Standards from several other series, including cybersecurity. Commission staff will continue to follow this project through FY 2019.

In FY 2018, the ERO initiated several projects within the resource and demand balancing series of Reliability Standards. One project, which concluded in FY 2018, was in response to directives issued in Order No. 835 to improve notifications within the 15-minute Area Control Error (ACE) recovery period and for entities to provide their ACE recovery plans to the reliability coordinator. Another project focuses on addressing inconsistencies identified through implementation of the Frequency Response reliability standard and improving efficiencies and effectiveness of the administration associated with the reliability standard. This project will be implemented in two phases and Commission staff's oversight for this project will continue through FY 2019.

In FY 2018, the ERO initiated the Standards Efficiency Review, in which it assembled teams of industry experts to use "a risk-based approach to identify potential efficiencies through retirement or modification of particular [Reliability Standards] requirements." The ERO plans to implement this review in two phases. Phase 1 is to evaluate each requirement in the body of NERC Reliability Standards to identify those that may be retired without any modifications to other standards or requirements. According to NERC, Phase 2 "will evaluate NERC Reliability Standards (Operations and Planning, and Critical Infrastructure Protection), as informed by implementation experiences and compliance practices, to develop and recommend standards-based solutions intended to reduce inefficiencies and unnecessary regulatory burdens for the purpose of supporting continued safe, secure and reliable operations." Commission staff has been engaged and will continue to follow this project through FY 2020.

Effectiveness and Efficiency Analysis. The Commission regularly explores ways to improve the efficiency and effectiveness of the Reliability Standards, their development, and their implementation. For example, the Commission annually holds a reliability technical conference to discuss the state of reliability, ERO performance and emerging issues related to the bulk power system. Also, in FY 2016, Commission and ERO staff began a series of NERC-FERC-Regional Entity Joint Review of Restoration and Recovery Plans reports. The first of which assessed registered entities' plans for restoration and recovery of the bulk power system following a widespread outage or blackout, and evaluated the efficacy of the relevant Reliability Standards in maintaining reliability. The second report, completed in FY 2017, focused on understanding how entities implement system restoration plans in the absence of key measurement and communication systems, and identified viable resources, methods and practices that could expedite system restoration despite the loss of such systems. The third report, issued in FY 2018, Blackstart Resources Availability, focused on the availability of blackstart resources during a time of change in the resource mix and on the use of expanded testing to improve system restoration plans. Two remaining studies are ongoing in FY 2019 and will continue into FY 2020. Also

in FY 2020, Commission staff will seek to build upon these successes and work with NERC to develop additional studies to address relevant reliability risks.

In addition, in FY 2017, the Commission implemented a final rule and began receiving from the ERO certain transmission and generation outage data, as well as protection system misoperation data on a non-public and ongoing basis, limited to mandatorily reported data regarding U.S. facilities. The data aids the Commission in determining the need for new or modified Reliability Standards and in better understanding NERC's periodic reliability and adequacy assessments. Data analysis and using data analysis to support and improve oversight of reliability is an ongoing effort in FY 2018 and continuing through FY 2019. Commission staff is building expertise in data analytics and is improving its understanding of this reliability data, and in FY 2020 will seek to expand its analytical capabilities, and will apply its findings to work with NERC to address reliability risks and improve the relevant reliability standards.

Also in FY 2017, FERC staff issued a report that identifies Lessons Learned from Commission-led CIP Reliability Audits. This report offers recommendations to help users, owners and operators of the bulk-power system assess their risk, compliance and overall cyber security posture. The findings in the reports are based on lessons learned from non-public audits of registered entities. These lessons learned can help facilitate compliance with mandatory reliability standards also, more generally, will facilitate efforts to improve the security of the nation's electric grid. Commission staff intends to compile and issue a follow up report in FY 2019.

RELIABILITY COMPLIANCE AND ENFORCEMENT

The Commission monitors and participates in the enforcement of the Reliability Standards, primarily through its oversight of the ERO and Regional Entities. As part of its outreach effort in the compliance program, the Commission regularly provides guidance to the industry on both technical and process issues at numerous regional conferences and meetings, with a goal of facilitating higher levels of bulk power system reliability. Similarly, Commission staff routinely coordinates with the ERO regarding technical and process issues relating to compliance audits, event analyses, investigations, violations, and mitigation activities. In addition, as part of that role, the Commission monitors the ERO's reports on the performance of the bulk power system.

Penalties, Violations, and Trends Analysis. The ERO is authorized to impose, after notice and opportunity for a hearing, penalties for violations of the Reliability Standards, subject to Commission review and approval. When a Regional Entity or the ERO identifies a violation of a Reliability Standard, whether through self-reports, audits, investigations, or complaints, the ERO either handles it: (1) outside of its enforcement pro-

cesses as a compliance exception or through its enforcement processes using its Find, Fix, Track and Report program; or (2) by filing a notice of penalty for Commission approval. Both of these processes include a record supporting a finding of noncompliance with one or more Reliability Standards, and a description of actions taken or to be taken to remedy the violation(s) and prevent a recurrence. Notices of Penalty add the proposed penalties and sanctions, as well as the documentation and rationale supporting the penalties. The entity subject to a Notice of Penalty may appeal the violations or penalty to the Commission. These processes will continue through FY 2020. Commission staff will continue to build its analytical capabilities and will use its analysis to inform its direction to NERC regarding Reliability Standards creation and modification.

Audits, Investigations, and Inquiries. Rigorous audits and investigations of potential violations coupled with appropriate and adequate mitigation plans should lead to a culture of compliance, self-reporting and internal controls, which should lead to enhanced reliability and fewer blackouts and system disturbances.

The Commission oversees NERC and Regional Entity audits through direct observation, and also performs independent compliance audits and conducts independent or joint investigations or inquiries of significant blackouts, system disturbances, cyber security incidents, and other reliability and security issues, as warranted. For example, in FY 2018, the Commission worked with the ERO and the Regional Entities to conduct audits of compliance with the CIP Version 5 Critical Infrastructure Protection Reliability Standards and Reliability Standard CIP-014-2 pertaining to physical security of critical assets. The CIP-014-2 audits focus on determining if there is a need for the Commission to direct NERC to develop modifications to CIP-014-2 to expand application of the physical security protections to a broader set of critical facilities. Both sets of audits are continuing in FY 2019.

In FY 2018, the Commission initiated a joint inquiry with NERC to assess the extreme cold weather event that occurred in the Midwest and a portion of South Central U.S. in January 2018. The event included public appeals for consumers to voluntarily reduce their electricity use due to abnormally cold temperatures and higher than forecast electricity demand, as well as multiple forced generation outages, voltage deviations and near-overloads during peak operations. The inquiry will focus on identifying the causes of, and any contributing factors to, the event, and will identify any appropriate recommendations for improving operations under similar conditions. The Commission plans to complete this inquiry in FY 2019.

Core Function 2.2.3: Protect against cyber and physical security threats to FERC-jurisdictional energy infrastructure and improve their resilience by working with regulated entities and stakeholders and by coordinating with other government agencies to identify and apply best practices separate from basic regulatory requirements.

The Commission provides leadership, expertise, and assistance in identifying, communicating and developing comprehensive solutions to cyber and physical security risks to energy infrastructure. This is achieved through collaboration with private sector energy industry entities and in coordination with government agencies to research, identify, and share information on threats and vulnerabilities, and to promote voluntary best practices that exceed but are complementary to mandatory regulations thereby improving resilience. Engaging with the regulated community and government partners accommodates the necessary exchange of information, analysis, and timely implementation of protective measures.

ENERGY INFRASTRUCTURE SECURITY

The Commission uses an agile and focused approach to assist regulated entities in protecting energy infrastructure from growing cyber and physical security threats. The rapidly changing, sophisticated and targeted threats, as well as the increasing dependence on operational automation underscores the need for such an approach. Cyber and physical threats and attacks are increasing in frequency, complexity, and severity and must be mitigated quickly.

Identify Threats and Vulnerabilities. The Commission will use its analysis and assessment capabilities to characterize infrastructure threats and vulnerabilities and to identify particularly critical equipment across Commission jurisdictional infrastructure. It is important to understand the impact that individual facilities may have on the resilience of critical infrastructure systems, as well as the risk of disruption to those systems from threats and vulnerabilities from cyber and physical attacks, including naturally occurring or emerging threats such as Electromagnetic Pulse (EMP) and Intentional Electromagnetic Interference (IEMI). The Commission conducts outreach to facility owners and operators to promote security and resiliency improvements at those facilities by facilitating classified and unclassified briefings and by offering onsite Information Technology (IT) and Operational Technology (OT) reviews of facilities. Commission staff provides timely and effective security threat briefings and presentations in both classified and unclassified settings in collaboration with other federal agencies to strategic partners, including state commissions that also have jurisdictional oversight of energy infrastructure. Commission staff conducted 15 of these briefings in FY 2018, with plans to continue in FYs 2019 and 2020.

Collaborate with Stakeholders. The Commission actively coordinates with its federal partners as well as regulated enti-

ties to identify, analyze, and spread awareness about threats, activities, and capabilities of entities that may initiate a cyber or physical attack on jurisdictional energy infrastructure. Our partners include the Department of Defense, the Department of Homeland Security, the Office of the Director of National Intelligence, the Transportation Security Administration, and the Department of Energy among many others. This proactive collaboration allows the Commission to support the development and encourage implementation of effective tools and techniques to enhance protection of jurisdictional energy infrastructure. Commission staff, with its extensive technical expertise including highly-skilled electrical engineers and IT specialists, provides a unique perspective that draws on both decades of regulatory experience as well as extensive planning and operational experience. The Commission's contributions to these mitigation and protection efforts help reduce the risk of cyber and physical security threats to vital energy infrastructure and facilitate the sharing and implementation of best practices, providing an important complement to FERC's regulation and enforcement actions.

Conduct Assessments of Critical Infrastructure and Promote Best Practices. In executing this collaborative role, Commission staff proactively examines threats and potential vulnerabilities in the cyber and/or physical security posture of jurisdictional facilities through onsite security assessments and assist with best practices for mitigating these vulnerabilities that exceed the current approved mandatory and enforceable regulations, thereby improving resiliency. The assessments better enable facility owners and operators to recognize current threats, potential attack vectors, potential counter measures and effective practices to minimize potential impacts and recovery time should a facility be compromised. These security assessments encompass topics such as criticality of the facility, backup plans, effective surveillance, Electromagnetic hardening, business environment, governance, risk management, cybersecurity awareness and training, supply chain security, data security, protective technologies, network architecture, network visibility, configuration management, incident response and recovery, and corporate and industrial control systems. Information and operational technology systems are complex and intertwined, spanning across the transmission, generation, distribution, corporate and even service networks of facilities. These assessments must therefore consider interdependencies and best practices for securing systems against current and emerging threats. In FY 2018, the Commission staff conducted eight of these onsite assessments and plans to continue to perform them in FYs 2019 and 2020.

PERFORMANCE MEASURE

Commission staff will use the following measure to assess performance in Objective 2.2. The result of this measure will be used in combination with other data and supplemental information to establish a more complete picture of performance on this objective.

Objective 2.2 Performance Measure 1: Bulk-Power System Reliability Measures:

- 1. The annual amount of lost load in a given year resulting from bulk-power system transmission-related events (unplanned disturbances), excluding weather related outages**
- 2. The time in which each U.S. interconnection recovers from generator loss events**
- 3. The change in frequency and elapsed time from the initial disturbance to the frequency minimum (Interconnection Frequency Response)**

Description. FERC will use these three measures to track bulk-power system reliability. Together they will help to both assess and inform FERC's activities to ensure the reliability of the system.

Reliability measure 1 is an outcome measure of FERC's efforts to promote reliability. The measure looks at individual events (excluding weather-related outages) that involve an unplanned loss of firm load that meets certain criteria¹².

Reliability measure 2 is also an outcome measure that indicates the bulk-power system's ability to recover from disturbances as mandated by the reliability standards. Reliability Standard BAL-002-2 (Disturbance Control Standard - DCS)¹³ requires that the Balancing Authority or Reserve Sharing Group balances resources and demand and returns the Balancing Authority's or Reserve Sharing Group's Area Control Error (ACE) to defined values (subject to applicable limits) following a Reportable Balancing Contingency Event. The intent of this metric is to measure the ACE recovery time at the Interconnection level by comparing the performance of Balancing Authorities (BAs) in the interconnection.

Reliability measure 3 is another outcome measure that indicates an interconnection's ability to stabilize frequency immediately following the sudden loss of generation. The metric is defined as the changes in generation, divided by the change in frequency from the initial disturbance to the frequency minimum, expressed in megawatts per 0.1 Hertz (MW/0.1 Hz). Reliability Standard BAL-003-1.1 (Frequency Response and Frequency Bias Setting) requires sufficient Frequency Response from the Balancing Authority (BA) to maintain Interconnection Frequency within predefined bounds by arresting frequency deviations and supporting frequency until the frequency is restored to its scheduled value.

Together these three measures provide a more complete picture of the state of bulk-power system reliability. The first measure is a high-level indication of the overall system health. The second measure looks at recovery time for a given disturbance that involved a loss of generation. The third measure looks at the interconnection frequency response to a disturbance caused by a loss of generation.

| Reliability Measure #1 - Annual amount of lost load due to unplanned disturbances | | | | | | | |
|---|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| FY 2014 Actual | FY 2015 Actual | FY 2016 Actual | FY 2017 Actual | FY 2018 Actual | FY 2018 Target | FY 2019 Target | FY 2020 Target |
| 0.08% | 0.30% | 0.25% | 0.10% | 0.21% | Below 0.5% | Below 0.5% | Below 0.5% |
| FY 2018 Target: Met | | | | | | | |

Data Table and Interpretation of Data. The amount of load lost in each event occurring in a given fiscal year is totaled and reported as a percentage of the annual peak load. The lower

the total amount of lost load, the more reliable and secure the operation of the bulk-power system.

¹² Loss of firm load for 15 minutes or more: a. 300 MW or more for entities with previous year's demand of 3,000 MW or more. b. 200 MW or more for all other entities. 2. BES Emergency requiring manual firm load shedding of 100 MW or more. 3. BES Emergency resulting in automatic firm load shedding of 100 MW or more (via automatic under voltage or under frequency load shedding schemes, or SPS/RAS). 4. Transmission loss event with an unexpected loss within an entities' area, contrary to design, of three or more BES Elements caused by a common disturbance (excluding successful automatic reclosing) resulting in a firm load loss of 50 MW or more.

¹³ A revised version of the standard, BAL-002-3, will go into effect on April 1, 2019.

The FY 2018 result for the first measure meets the target and indicates a consistent level of system reliability. Although the results have shown variability, the FY 2018 result continues to

meet the target level of reliability achieved over the previous four years.

| Reliability Measure #2 - The time in which each U.S. interconnection recovers from generator loss events (minutes). | | | | | | | |
|---|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| Interconnection | FY 2014 Actual | FY 2015 Actual | FY 2016 Actual | FY 2017 Actual | FY 2018 Actual | FY 2019 Target | FY 2020 Target |
| Eastern | Not available | 9.4 | 9.1 | 9.4 | 9.3 | Below 11 | Below 11 |
| Western | Not available | 9.8 | 8.5 | 5.5 | 10.8 | Below 11 | Below 11 |
| Texas | Not available | 11 | 7.6 | 10.5 | 8.9 | Below 11 | Below 11 |

This measure analyzes individual DCS events in which an interconnection experienced a significant (typically >500 megawatts) loss of generation. The measure averages the recovery time of every DCS event that occurred in a given fiscal year. Reliability Standards BAL-002-2 mandates a Contingency

Event Recovery Period of 15 minutes for a reportable balancing contingency. The lower the average recovery time, the more reliable and secure the operation of the bulk-power system. This is a new measure, and targets were not set for FY 2018.

| Reliability Measure #3 - Interconnection Frequency Response (MW/0.1 Hz) | | | | | | | |
|---|---------------|---------------|---------------|---------------|----------------------|---------|---------|
| Interconnection | FY 2014 | FY 2015 | FY 2016 | FY 2017 | FY 2018 | FY 2019 | FY 2020 |
| | Actual | Actual | Actual | Actual | Actual ¹⁴ | Target | Target |
| Eastern | Not available | Not available | Not available | Not available | -2307 | Below | Below |
| | | | | | | -1015 | -1015 |
| Western | Not available | Not available | Not available | Not available | -927 | Below | Below |
| | | | | | | -858 | -858 |
| Texas | Not available | Not available | Not available | Not available | -734 | Below | Below |
| | | | | | | -381 | -381 |

This measure analyzes individual events and looks at an Interconnection's ability to stabilize frequency immediately following a sudden loss of generation. For each event, the ratio of change (loss) in generation to the change in frequency is calculated from initial level to the minimum, which typically occurs within the first 5-7 seconds of an event. The lower the ratio, the quicker the system was able to respond.

This is a new measure and targets were not set for FY 2018. The annual interconnection frequency response will be calculated as the average of interconnection frequency responses to qualifying events that occurred during the year. In addition, the metric measures the individual BA's frequency response against the BA's frequency response obligation, which is calculated as part of the metric.

Analysis. FERC's impact on bulk-power system reliability comes from its ongoing oversight activities as well as its monitoring and analysis of system operation. FERC monitors system operation (using the results from these measures along with other data) to identify emerging reliability issues. FERC also performs root cause analyses of anomalies and disturbances to determine whether reliability standards are adequate for their intended purpose. FERC also monitors the compliance of the users, owners, and operators of the bulk-power system with the reliability standards and participates in audits to identify lessons learned and best practices. These efforts inform FERC's oversight activities. If its analyses indicate a need for new or revised regulations, FERC works with NERC to develop and implement them.

The increasing complexity of the grid, technological development, and the changing resource mix are risk factors that

¹⁴ The ERO determines the Interconnection Frequency Response for each operating year using annual frequency analysis and submits to FERC as Informational Filing.

impact bulk-power system reliability. The pace of change is also an issue. The adjustment of current reliability standards and the development of new standards takes time and may lag behind external changes and emerging issues.

The targets for each of the measures will remain steady for FYs 2019 and 2020. These targets establish a threshold level for system performance rather than an expectation of increasing reliability. Deviation from this threshold provides an alert that there is an issue. Considering the set of measures helps provide insight into what the issue may be. Over the next two years, FERC will improve its data analysis capability and seek more direct access to data sets, if deemed necessary. An improved analysis capability applied to more complete and higher

quality data is essential to maintaining FERC’s awareness of system performance and identifying emerging issues. FERC will also continue to conduct its own targeted audits in order to more fully understand compliance issues and the challenges facing industry. Based on a foundation of increasing awareness and understanding, FERC will continue its monitoring and oversight and will build upon its close working relationship with NERC to identify and address emerging issues affecting the reliability of the bulk-power system.

Over the next two years, FERC expects the influence of risk factors to continue to impact system reliability. FERC does not anticipate the emergence of new risk factors.

Objective 2.2 Performance Measure 2: The number of cyber events and the number and severity of reliability impacts (including outages) in a given year resulting from cyber events on bulk-power system assets subject to reliability standards

Description. In Order No. 850, the Commission directed NERC to develop and submit modifications to the Reliability Standards to require the reporting of Cyber Security Incidents that compromise, or attempt to compromise, a responsible entity’s Electronic Security Perimeter (ESP) or associated Electronic Access Control or Monitoring Systems (EACMS).

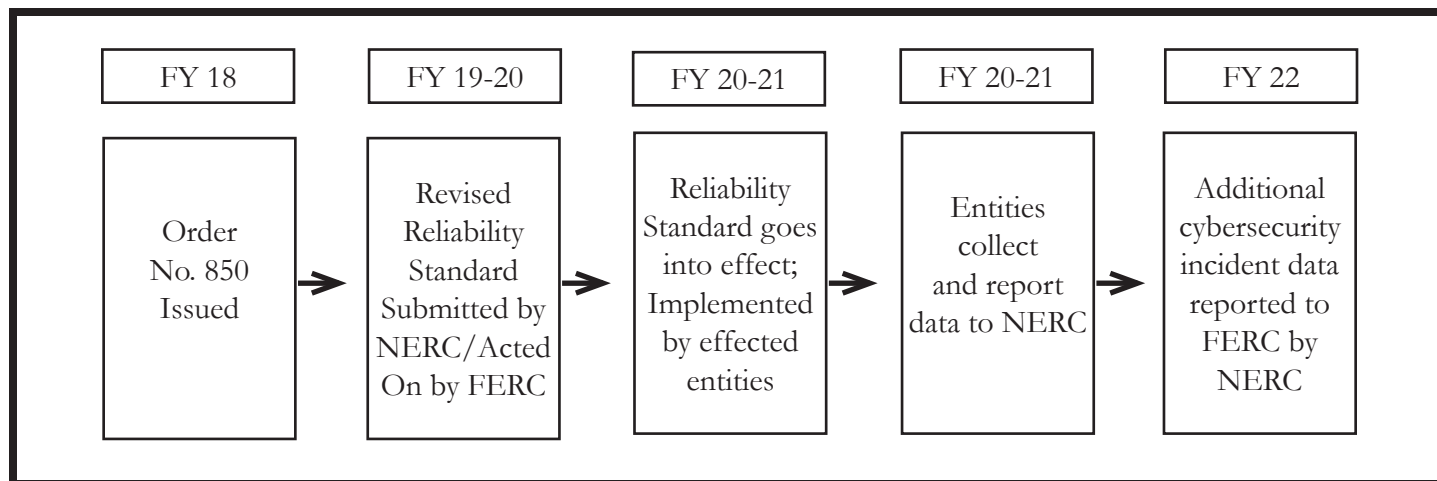
While this measure is not as robust as the information that will be received based on Order No. 850, it will show the types of cyber security incidents that are occurring. The Commission currently analyzes DHS’ and other organizations’ cyber security reporting to determine how the CIP environment and the reliability of the bulk-power system may be impacted. Where there are gaps or shortcomings, the Commission can direct the improvement of the Critical Infrastructure Protection (CIP) Reliability Standards.

After the implementation of modifications to the Reliability Standards resulting from Order No. 850, this measure will be able to be modified to more accurately quantify and assess the degree to which cyber related events impact the reliability of the bulk-power system. The measure looks specifically at cyber

security incidents on assets that are important to reliability. A cyber security incident includes any attempt, whether successful or unsuccessful, to breach an asset’s electronic security perimeter that registers in the asset’s cyber logs, electronic files, or firewalls. A cyber security incident also includes non-malicious cyber events that were caused by human error and that either did or could have caused an outage or disturbance. The result reported for this measure is a count of the number of incidents that occurred during the fiscal year.

As part of this reporting, NERC must file an annual, public, and anonymized summary of the reports with the Commission. NERC is due to submit the revised reliability standard during the second quarter of FY 2019. The new reporting requirements will most likely become mandatory in mid- to late-2020. FERC expects to begin receiving data in FY 2021, after the requirements become mandatory. It is expected that information regarding cybersecurity incidents to support this measure will be available in FY 2022.

The following graphic illustrates the chain of influence for Order No. 850 and an expected timeframe for each stage.



Although all events will be aggregated for the measure result, FERC will analyze and track different categories of events (e.g., human error, failed equipment/software, malicious activity) and use root cause analysis to gain a greater understanding of how and why these incidents occurred and how they did or could have impacted bulk-power system reliability.

The analyses of the information gathered will provide insight into any gaps and/or weaknesses that may exist in the CIP reliability standards allowing FERC, NERC, and industry to address these issues with a modification to a standard, a new proposed standard, or other approaches to minimize the occurrence and impact of cyber security events and protect the reliability of the grid.

| The number of cyber events and the number and severity of reliability impacts (including outages) in a given year resulting from cyber events on bulk-power system assets subject to reliability standards. | | | | | | |
|---|----------------|----------------|----------------|----------------|----------------|----------------|
| FY 2014 Actual | FY 2015 Actual | FY 2016 Actual | FY 2017 Actual | FY 2018 Actual | FY 2019 Target | FY 2020 Target |
| 7 | 2 | 4 | 1 | 4 | 6 | 8 |

Data Table and Interpretation of Data. This is an outcome measure that provides an indication of the performance of FERC’s oversight activities and its efforts to inform and support the cyber security programs of regulated entities. FERC oversees the development of Critical Infrastructure Protection (CIP) reliability standards and other compliance tools designed to improve the security of jurisdictional energy assets. By working to minimize the occurrence and impact of cyber security events, FERC helps to protect the reliability of the grid. All other things being equal, decreasing numbers of events provides an indication of higher performance.

Analysis. FERC’s impact on this measure comes from its ongoing oversight activities as well as its efforts to inform and support the cyber security programs of regulated entities. Although FERC’s efforts are intended to minimize the occurrence and impact of cyber security events, it is difficult to precisely estimate the degree to which those efforts directly affect the results. In support of this measure, as Order No. 850 continues implementation, FERC will analyze information regarding cybersecurity incidents for the electric sector collected and reported by other agencies, to track progress regarding this goal.

Because direct reporting is not currently available, the figures in the table derive from detailed reports from the Department of Homeland Security. They do not account for each reported cyber security incident at each electric sector entity. The data may include compromises in non-CIP environments or non-jurisdictional cyber assets. The Commission will continue to collect and analyze published alerts from the Department of Homeland Security regarding cyber security alerts for the electric sector.

Threat information collected by other agencies indicates that cyber security perpetrators are becoming more sophisticated and have access to resources to support increasingly complex attacks. As a result, jurisdictional facilities are at an ever-increasing threat from new and quickly evolving cyber-attacks. In addition, increasing automation and other technological developments are increasing the potential for reliability impacts due to human error and/or failed equipment/software.

FY 2018 was the first year that the number of electric sector-related alerts are being measured in order to set the initial benchmark. For example, in 2018, four alerts were published that indicated the electric sector was compromised by several nation states. Alerts are typically generated when many entities are compromised/attacked.

The FYs 2019 and 2020 targets for this measure are based on the historical information included in the table and an analysis of cyber event data from DHS. As the Cyber Security Incident Reporting requirements are being modified and implemented, it is highly likely that awareness and regulated reporting of cyber security incidents will increase. This will also improve the accuracy of the numbers as more entities are required report their incidents to DHS. The target numbers for FYs 2019 and FY 2020 reflect this anticipated increase in reported incidents.

Objective 2.2 Performance Measure 3: The number of active partnerships for which security related activity (information sharing, outreach to industry, joint assessments, sharing of resources, etc.) occurred during the fiscal year

Description. This measure provides an indication of the extent to which other federal agencies are recognizing critical infrastructure interdependencies and adopting a holistic approach to infrastructure protection. A holistic approach to infrastructure security provides the necessary framework for federal agencies to work together to address new and quickly evolving cyber and physical threats. Partnerships provide a mechanism for information sharing and collaboration action that enable infrastructure security to be addressed holistically as opposed to action taken in isolation. By maintaining active partnerships with federal agencies and stakeholders, FERC is able to coordinate with entities including government agencies to identify and assess threats, activities, and capabilities of adversaries that may initiate a cyber or physical attack on FERC jurisdictional infrastructure. Collaborative outreach efforts help to make

jurisdictional entities aware of these threats and appropriate counter measures. Active partnerships also enable FERC to work with other federal agencies and stakeholders to identify and assess key infrastructure facilities that present the greatest risk and develop a common understanding of infrastructure interdependencies.

The measure directly assesses the effectiveness of FERC’s efforts to reach out to other federal agencies and stakeholders and establish partnership agreements to the benefit of regulated entities. Since the quality of the partnerships is more important than the quantity of partnerships, maintaining a limited set of active partnerships, reflects higher performance than a large number of inactive partnerships.

| The number of active partnerships for which security related activity (information sharing, outreach to industry, joint assessments, sharing of resources, etc.) occurred during the fiscal year. | | | | | | |
|---|----------------|----------------|----------------|----------------|----------------|----------------|
| FY 2014 Actual | FY 2015 Actual | FY 2016 Actual | FY 2017 Actual | FY 2018 Actual | FY 2019 Target | FY 2020 Target |
| n/a | n/a | n/a | n/a | 4 | 2 | 3 |

Data Table and Interpretation of Data. This is a new measure and represents an effort to be more focused and deliberate about building and deploying partnerships to address the cyber and physical security needs/challenges of FERC-jurisdictional energy infrastructure. FY 2018 is considered to be a baseline year. The FY 2018 result indicates a level of performance with room for growth and improvement.

To help in the interpretation of the measure results, FERC will track the number and types of collaborative activities that each partnership engages in. FERC will also maintain an up-to-date list of potential partners, which will include the federal agencies that have expertise, information, resources, or authority that is relevant to the cyber and physical security of FERC regulated entities.

Analysis. During FY 2018, FERC’s efforts were more focused on collaborative activities such as joint assessments and the development of best practices than on establishing and maintaining partnerships. In particular, FERC did not make a consistent effort to establish formal agreements with partner agencies. The baseline result for FY 2018 reflects this.

The targets for FYs 2019 and FY 2020 represent an intention to build and then maintain a manageable set of active partnerships and recognize that there are a limited number of federal agencies that have expertise, information, resources, or author-

ity that is relevant to the cyber and physical security of FERC regulated entities. FERC believes that it is better to focus on a few partnerships that make a significant contribution to jurisdictional entities than to put time into maintaining a large number of partnerships that are unproductive.

Over the next two years, FERC will continue to develop, maintain and leverage active partnerships with other agencies and stakeholders and identify additional potential partners. FERC will maintain the visibility and recognition of its security expertise by attending meetings, conferences, and other events. FERC will develop a wider range of jointly-recognized agreements and will develop other collaborative activities and mechanisms that make it easier for partners to work with FERC.

The measure results are affected by the actions of partners. Although influencing the actions of partners is part of the performance challenge of establishing and maintaining active partnerships, other federal agencies face shifting priorities, budget constraints, and change in personnel that could affect their ability and willingness to collaborate with FERC. Over the next two years, FERC expects the influence of these risk factors will cause some partners to disengage even as new partnerships are established.

GOAL 3

MISSION SUPPORT THROUGH ORGANIZATIONAL EXCELLENCE

Achieve organizational excellence by using resources effectively, adequately equipping FERC employees for success, and executing responsive and transparent processes that strengthen public trust.

The public interest is best served when the Commission operates in an efficient, responsive, and transparent manner. The Commission pursues this goal by maintaining processes and providing services in accordance with governing statutes, authoritative guidance, and prevailing best practices. The Commission's staff, while serving in different component offices, must work collaboratively and execute processes that work in concert with each other to produce the high-quality results expected by the American people. In accomplishing this goal, the Commission will use its resources efficiently, empower its employees, and earn the public trust. These essential outcomes are indicative of a model regulatory agency.

| Strategic Goal and Objectives (Dollars in thousands) | | FY 2018 Actual | FY 2019 Estimate | FY 2020 Request | Percent Change FY 2019 to FY 2020 |
|---|---------|-------------------|---------------------|--------------------|---|
| Objective 3.1 | FTE | 217 | 219 | 219 | 0.0% |
| | Funding | 52,849 | 56,768 | 56,073 | -1.2% |
| Program | | 35,663 | 37,279 | 38,152 | 2.3% |
| Support | | 17,186 | 19,489 | 17,921 | -8.0% |
| Objective 3.2 | FTE | 70 | 69 | 69 | 0.0% |
| | Funding | 17,137 | 17,788 | 18,036 | 1.4% |
| Program | | 11,593 | 11,632 | 12,375 | 6.4% |
| Support | | 5,544 | 6,156 | 5,661 | -8.0% |
| Goal 3 Subtotal | FTE | 287 | 288 | 288 | 0.0% |
| | Funding | 69,986 | 74,556 | 74,109 | -0.6% |
| Application of PY Budget Authority | | - | (5,456) | (863) | |
| Goal 3 Total | Funding | 69,986 | 69,099 | 73,246 | 6.0% |

Note: numbers may not add up due to rounding.

During Fiscal Year 2019, FERC will hire a Chief Data Officer to finalize the establishment of the governance structure and develop a charter detailing the related mission, scope, and services required to support the initiative. FERC will build the related support team through additional new hires, transfers of existing staff and contractor resources. Once firmly established, the data governance organization will provide a corporate data strategy and governance model, provide management support for related data projects, and orchestrate shared data services across the agency.

In meeting the objective of this strategic response, FERC intends to realize efficiency gains from streamlined data collection, analyses and reporting, as well as, enhanced collaboration across the agency in support of core mission outputs.

MONITORING OF THE RISK FACTORS

The required allocation of resources and development of internal capacity is likely to remain an ongoing challenge. Attracting and retaining human resources with the requisite skills to implement the governance structure will require consistent management focus. The pace of technological change is another risk factor. It is possible that FERC's execution of the strategic response may not happen quickly enough to keep up with emerging data management technology and requirements. Additionally, accommodating stakeholders' capacity to accept the implementation of new solutions may create additional challenges in the Commission's efforts to keep pace with technology. FERC remains committed to continuous monitoring and mitigation of these risks, as appropriate.



Situational Assessment Item 2: Maintaining a Secure and Reliable IT Infrastructure

FERC is challenged with maintaining a secure and reliable IT infrastructure to meet the needs of the Commission and provide innovative solutions to support employees.

IMPLEMENTING THE STRATEGIC RESPONSE

To address this, the Commission's resource planning will include a focus on identifying and updating high priority systems and addressing system vulnerabilities.

FERC has been developing an execution-oriented focus by integrating project management approaches and practices into its planning and implementation of key upgrade projects. As such, FERC has mapped out and prioritized IT needs and

developed plans for updates to key systems. Some upgrade projects have already been implemented and new tools have been developed that have equipped staff with enhanced IT capabilities. In addition, FERC has made an effort to establish cross-office IT partnerships and improve collaboration between internal IT service providers and IT customers at both the individual and office level. As a result of these efforts, the IT support function has already witnessed positive and direct impacts, including a noticeable prevention of unplanned outages and an increase in scores on an internal quality survey. This suggests that internal satisfaction of IT support and IT systems engineering are becoming more positive.

Over the next few years, FERC will continue to identify and

upgrade key systems and provide innovative solutions to meet staff and office IT needs. In FY 2019, FERC expects to implement new IT monitoring tools that will detect and provide early alerts of system issues. The alerts will provide IT staff with enough time to take preventive action and further reduce unplanned outages.

MONITORING OF THE RISK FACTORS

The required allocation of resources and development of internal capacity is likely to remain an ongoing challenge. Attracting and retaining human resources with the requisite skills to implement the governance structure will require consistent management focus. The pace of technological change is another risk factor. It is possible that FERC's execution of the strategic response may not happen quickly enough to keep up

with emerging data management technology and requirements. Additionally, accommodating stakeholders' capacity to accept the implementation of new solutions may create additional challenges in the Commission's efforts to keep pace with technology. FERC remains committed to continuous monitoring and mitigation of these risks, as appropriate.

Situational Assessment Item 3: New and Emerging Knowledge/Skill Demands

The challenges of new and emerging knowledge/skill demands and the loss of institutional knowledge will create increasing staffing vulnerabilities, employee development pressures, and a need for cross-functional collaboration.

IMPLEMENTING THE STRATEGIC RESPONSE

To address these workforce issues and enable the application of new skills and a greater depth and breadth of skills, the Commission will implement an integrated human capital initiative that includes the following actions:

- Identify knowledge and skill gaps/needs and staffing vulnerabilities across the Commission.
- Align and integrate three elements to efficiently address human capital gaps and staffing vulnerabilities: 1) competency-based training; 2) knowledge management tools; and 3) targeted hiring process to acquire new knowledge and skills in the workforce (e.g., electrical engineering expertise relevant to the bulk-power system, cyber security, data analytics, etc.).
- Enhance communication, collaboration, and knowledge sharing to promote cross-functional understanding and enable more efficient integration and coordination of efforts.

The Commission has completed the assessment of gaps and vulnerabilities existing within its current staffing pool. It has identified areas of high priority requiring immediate attention and staff is now in the process of planning a targeted hiring initiative in those areas. In addition, the assessment identified developmental needs that are common across several program offices. Key staff from those offices will be working together to discuss common approaches that can be deployed to address these gaps prospectively.

In FY 2019, FERC expects to implement targeted hiring initiatives focused on key positions where long-time employees are close to retirement. FERC also expects to implement two new

competency-based training programs. In FY 2020, the Commission also anticipates a roll out of a web-based knowledge management tool.

Because the strategic response is still in the early stages of implementation, it is too soon to observe the direct impacts. The Commission expects the targeted hiring initiative will have an impact toward the end of FY 2019. In particular, the Commission expects to see a reduction in the severity and duration of staffing/skill gaps due to early retirement of key employees. The Commission will also be identifying and monitoring signs of increased cross-functional understanding as discussions of common knowledge/skill needs are initiated.

MONITORING OF THE RISK FACTORS

A number of risk factors could impact the strategic response over the next two years. FERC's efforts to attract and hire qualified individuals with unique skill sets in complex technical fields will provide challenges. In particular, it is difficult to attract and retain individuals with cyber-security and specialized physical security expertise. The Commission is committed to identifying and leveraging its opportunities to improve its competitiveness in this field. FERC expects that these factors will continue to be relevant over the next two years and remains committed to ongoing monitoring and mitigation of these risks, as appropriate.

CORE FUNCTIONS

In addition to addressing its strategic priorities, the Commission continued to perform its Core Functions and fulfill its responsibilities as a regulatory agency.

Core Function 3.1.1: Maintain processes and provide compliant services that enable FERC offices to manage resources effectively and efficiently.

HUMAN CAPITAL

With the agency increasing its use of analytics and data-modeling to inform regulatory policy decisions, the Commission has been aggressively recruiting professionals that possess the capabilities to analyze and evaluate complex energy data. In FYs 2019 and 2020, the Commission will continue to recruit and hire staff to meet its current and future needs.

To enhance awareness of employment opportunities within the Commission, it will continue to utilize social media platforms to reach the largest applicant pools possible. The agency will increasingly leverage social media platforms to market employment opportunities in addition to its use of more traditional recruiting strategies. Finally, the Commission will execute its hiring processes in a manner that minimizes hiring cycle times in line with established targets and maximizes the use of allocated financial resources.

INFORMATION TECHNOLOGY

In supporting the agency's mission, the Commission will maintain disciplined information technology (IT) planning and governance and pursue a number of projects that will advance priority information technology initiatives.

IT Planning and Governance. The Commission continues to implement rigorous IT planning and governance processes which provide enhanced executive oversight of IT programs and projects; a mission focus on IT investment decision-making; and a structured process for managing and evaluating IT investments in support of the mission. This enterprise approach to IT decision making has been successfully sustained and facilitated management consensus to support \$8.94M and \$10.9M in IT capital investments that will be funded and executed in FYs 2019 and 2020, respectively.

Modernization of Information and Communication Technology Infrastructure and Applications. The Commission began modernizing major components of its IT infrastructure and key business applications in FY 2018. The Commission upgraded its network infrastructure to enable more efficient connectivity between systems and applications at its headquarters, alternate computing, and regional office facilities. In addition, the Commission enhanced its Public Issuance Workflow application, which provided efficiencies in publishing Commission issuances. FERC also implemented a modern, collaborative intranet platform to maximize employee productivity and knowl-

edge management. The Commission is continuing its efforts in FY 2019 and FY 2020 to upgrade a major business application called eLibrary that functions as the system of record for all Commission-issued orders, industry filings, and public comments. This system is used by all Commission staff and is the single entry point for the public to access docketed information. The Commission is continuing its efforts in FYs 2019 and 2020 to upgrade elements of another major business application called FERConline that functions as the single entry point for all of FERC's electronic access applications. FERConline provides an easy and efficient way to communicate with and do business with the Commission electronically. Lastly, the Commission will implement a new, unified communications, collaboration and telephony system and upgrade its Microsoft Windows operating systems and Office products to stay current with industry.

Expansion of Cloud Computing, Data Analytics and Visualization Capabilities. The Commission is enhancing mission critical systems such as eForms, Company Registration, Virtual Agenda, Electric Quarterly Report Filing, FERC Online, Regional Transmission Organization (RTO) Independent System Operator (ISO) Reporting Databases, Electric Reliability Databases, eTariff and Geospatial Hydrologic Engineering Centers River Analysis. These mission critical systems will be reachable through the secure "always on" Virtual Private Network (VPN) that will be implemented in FY 2019. FY 2020 plans include enhancing workload management tracking and records management systems, and implementing reporting tools with more self-service data analytics capabilities.

In FY 2019, the Commission is planning to initiate implementation of cloud-based processing and storage infrastructure, communications and telephony upgrades. It is the Commission's expectation that these and additional initiatives planned over the next 3 years will decrease operating costs and also introduce performance enhancing technologies to sustain the Commission's IT environment.

Improvement of Cybersecurity Posture. The Commission remains vigilant in protecting its vital systems and data. The Commission continues to invest resources in additional security technologies which ensure its infrastructure and ultimately end users are protected from malicious events. In FY 2018, the Commission implemented an analytics-driven, enterprise

security solution to quickly detect and respond to internal and external attacks. It further enhanced the Information Governance program to ensure proper classification of data along with providing the necessary training to all staff. The Commission will also deploy additional cyber tools for Data Loss Prevention, Advanced Endpoint Protection, Continuous Diagnostics and Mitigation and Hosted Enterprise Public Key Infrastructure (PKI), amongst others, through FYs 2019 and 2020. FERC will continue to enhance its privacy and security posture while continuing to meet federal requirements.

FINANCIAL MANAGEMENT

The Commission continues to leverage technology to strengthen the integrity of its financial management systems. In FY 2018, the Commission completed a modernization of the financial system that included a refresh of the underlying technical architecture and upgraded the application to the latest release to extend the duration of vendor support.

Throughout the fiscal year, the Commission improved audit capabilities, expanded internal control reporting, and enhanced application security settings to enforce separation of duties. The Commission defined and implemented a robust continuous monitoring program aligned to FedRAMP standards and associated NIST control families to ensure system controls, configuration, and access are maintained. The effectiveness of the Commission's security configuration, policies, procedures, and technical controls were independently tested and validated through FedRAMP, FISMA and FISCAM audits.

The enhancements to the financial management system and continued focus on data integrity and control testing supported an FY 2018 result of an unmodified opinion on its financial statements. This is the 25th consecutive unmodified opinion the Commission has received on its financial statements. The Commission also provided reasonable assurance that the overall system of internal controls were effective.

In FY 2019 and FY 2020, the Commission requested \$0.58 and \$0.35 million respectively to streamline business processes and implement technologies that strengthen the effectiveness of internal controls. From an operational perspective, the Commission intends to integrate external business processes supported by ancillary business applications within the financial application and automate the collection and distribution of internal control reports to key stakeholders.

Procure to Pay. In FY 2018, the Commission leveraged application integrations and automation to systematically generate 83 percent of all financial transactions reflected in the general ledger. The Commission gained efficiencies by replacing manual processes with automated workflow processes that connect Contracting Officer Representatives with accounts payable personnel. Additionally, new reports that combine informa-

tion from budget, acquisition, vendors and the Department of Treasury were developed to increase transparency and enhance communication across organizations. These enhancements contributed to the Commission paying 99 percent of its invoices on time according to the Prompt Payment Act with an error rate of less than 1 percent.

In FY 2019, the Commission is planning to implement technology that improves workflow and reporting within the procure-to-pay lifecycle. The first enhancement will establish a unique identifier that ties funding requests through contractual award. Connecting budget, acquisition and financial data will improve the Commission's ability to report consistent, reliable, relevant and timely decision-making information to key stakeholders. Automating the compilation and dissemination of information will shift organizational focus from data gathering to data analysis. This will result in providing Commission resources with time to analyze relevant trends in data will facilitate workload management and produce optimal performance.

Receivables and Annual Charges. In FY 2018, the Commission launched an initiative to modernize the FERC Annual Charges System (FACS). The modernization includes an assessment designed to document the current functions performed within FACS and to develop a plan for migrating the existing functionality, along with strategic enhancements, into the Commission's core financial management system. In FY 2019, the Commission has requested \$0.27 million to complete the FACS modernization initiative by migrating the existing FACS functionality, along with assimilating key processing enhancements and increased automation, into the core financial management system.

FACILITIES MANAGEMENT

Logistics. In FY 2018, the Commission began a renovation project to modernize the Commission Meeting Room (CMR). The CMR modernization project will include enhanced lighting, re-upholstered auditorium and fixed bench seating, and enhanced audio visual and information technology equipment. This will improve the overall functionality of the CMR and provide stakeholders with a better experience.

In FY 2018, the Commission's mail management system and meters were replaced, providing enhanced capabilities and maximizing savings in mail operations. Additionally, in FYs 2019 and 2020, the Commission is requesting \$0.5 million each year to modernize the Commission's digital printing equipment. The equipment has reached the end of its useful life.

Headquarters Modernization. In August 2014, the Commission and GSA executed a 10-year renewal option on the Commission's Headquarters building. Congressional authorization for the lease extension requires the Commission to reduce the amount of space it currently utilizes to support its Washing-

ton, D.C., based operations. As required by the Prospectus, GSA and the Commission have developed a plan to reduce the amount of space it currently utilizes. As part of this consolidation effort, the Commission will relocate employees currently housed within a separate facility in downtown Washington, D.C., to the Commission's Headquarters building. This reduction will yield approximately \$4.8 million in savings annually to the federal government based on forecasted market rates for the local area.

While achieving the required space reductions, the Commission will modernize the floor configurations that will provide higher space utilization rates, while leveraging more natural light and providing for enhanced collaboration and additional conferencing capabilities. The project will require substantial renovation to the headquarters building and is currently in the pre-construction phase. To date, the Commission has funded approximately \$22 million for project requirements associated with planning, design, contractor support, swing space construction and the initial phases of construction for the Headquarters building. Construction in the Headquarters building

is expected to begin in the summer of 2019. The project is expected to be completed in 2021. The total project, including the purchase of furniture, is estimated to cost approximately \$81.4 million. In FY 2019, FERC requested approximately \$16.7 million to support ongoing project requirements. In FY 2020, FERC requests approximately \$22.9 million to support project requirements.

The Commission is utilizing all available options to limit the impact the project has on its budget request in any one fiscal year. To this end, the Commission will take advantage of the building owner's tenant improvement allowances to spread approximately \$8.5 million of project costs over the next 10 years. The Commission will aggressively manage the associated project schedule to avoid additional costs as a result of potential project delays. The timely funding of project requirements will mitigate the risks of such costs as the effort progresses forward. The current contractor estimates also factor in an additional 10 percent contingency to mitigate associated project risks.

Core Function 3.1.2: Provide tools and services that enable FERC staff to effectively perform their jobs and drive Commission success.

CORPORATE KNOWLEDGE MANAGEMENT

In 2018, the Commission implemented a new learning management system, iLearn. This new system allows employees and supervisors to create training requests, register for internal training courses, access to online, or "E-learning" opportunities, and formation of individual development plans. This effort aligns with the Commission's Competency Based Training Program (CBTP) initiative which enables employees, managers and program offices to make informed decisions about their training and development. With a third of FERC staff eligible to retire within the next five years, prioritizing employee development is key in promoting satisfaction, improving performance, and supporting professional growth.

In FYs 2019 and 2020, the Commission will continue to invest heavily in succession and knowledge management activities to ensure the agency equips employees with the requisite knowledge to meet mission demands going forward. It will continue to execute a knowledge management program to mitigate the risks associated with the potential loss of substantial staff due to retirement over the next five years. The agency has recently implemented numerous enhancements/functionality to its knowledge collaboration tools that will serve as the vehicle to capture critical organizational knowledge and promote learning. The Commission developed a uniform approach that will seek to preserve corporate information and make it accessible to all Commission employees. These delivery mechanisms will provide information and training to Commission employees in a cost-effective and easily repeatable fashion. Such a strategy

will ensure employees possess the specialized skills and knowledge required to successfully support the agency's mission. Going forward, the agency will continue to empower Commission employees and prepare them for success by continuing to build out competency models, create training needs assessments and career paths, as well as obtain feedback from staff in an effort to adequately equip employees for success.

EMPLOYEE ENGAGEMENT

Federal Employee Viewpoint Survey (FEVS). It is imperative that the Commission be fully aware of employees' most critical needs. This knowledge will ensure that the agency adequately empowers its employees to meet their mission responsibilities. To this end, the Commission will utilize results from the annual FEVS to assess employee perceptions relative to performance management and the work environment. In FY 2018, results showed that the Commission continues to improve employee engagement and global satisfaction, achieving a one percentage point increase in both indices, improving to 82% and 81%, respectively. Based on the survey conducted in FY 2018, the Commission is proud to be ranked #2 among midsized agencies in the Partnership for Public Service's Best Places to Work® ranking. Employees rated the agency's leadership efforts favorably regarding the creation of work which ensures employees can reach their potential, contribute to the success of the agency environment, and ultimately the entire federal government.

The Commission is building on the positive opinions expressed by employees during the previous survey period. The Commission is continuing engagement with its employees on agency survey results. Program offices have established focus groups and conducted additional assessments to identify strengths and growth opportunities responsive to survey feedback. Agency efforts in this regard further enhanced the importance of the survey and 82% percent of all eligible employees participated in the FY 2018 survey. Going forward, the Commission will analyze its annual results and conduct additional employee outreach activities to gauge the effectiveness of its employee-related processes and services. The agency will develop action plans to address any areas not favorably rated and take corrective action to improve processes and services that impact related employee perceptions.

SAFETY AND SECURITY

The Commission is dedicated to ensuring that its employees and Commissioners are able to carry out the Commission's mission in a safe and secure environment. Over the last several

years, Commission employees and Commissioners have been exposed to increasing levels of antagonism from groups opposing development of new natural gas infrastructure. Staff has faced such antagonism while conducting field activities, participating in public forum events, and at the Commission's facilities. Commissioners have also been targeted at public speaking engagements and elsewhere. In response to these developments, the Commission increased its coordination with federal, state, and local law enforcement entities to ensure the safety and security of staff, Commissioners, and members of the public in attendance at these various forums. The Commission anticipates that such demonstrations of antagonism will continue to increase in frequency and intensity. To mitigate immediate and long-term risks associated with these conditions, the Commission has obtained special deputations from the U.S. Marshals Service for select security personnel. These highly-skilled personnel will be responsible for implementing and sustaining appropriate security protocols that will address potential and actual threats.

PERFORMANCE MEASURE

Commission staff will use the following measure to assess performance in Objective 2.1. The result of this measure will be used in combination with other data and supplemental information to establish a more complete picture of performance on this objective.

Objective 3.1 Performance Measure:

- a) The extent to which employees are engaged and equipped to perform their jobs to the best of their ability (People Measure)**
- b) The percent of dollars appropriated that have been obligated (Dollars Measure)**
- c) The degree to which internal services meet employee and organizational needs (Quality Measure)**

Description. These three measures represent key results for FERC's support functions. The measures are intended to enhance accountability, ownership, and engagement with and across the support functions.

The People measure assesses the degree to which Commission employees are engaged. To gauge this, the Commission leverages the Federal Employee Viewpoint Survey (FEVS), administered annually by the Office of Personnel Management. OPM defines engagement as, "An employee's sense of purpose that is evident in their display of dedication, persistence and effort in their work or overall attachment to their organization and its mission." FERC's support functions work to equip employees and enable employee engagement, which is critical to ensuring that employees contribute and perform at their optimal levels. Thus, the People measure is a key result for the support functions.

The Dollars measure captures how well FERC utilizes its resources. The Commission's support functions provide oversight, guidance, and efficient processes and procedures that help FERC develop appropriate resource requirements and utilize agency resources accordingly. The measure looks at whether the dollars appropriated by Congress were obligated in a timely manner in a given fiscal year. Thus, the Dollars measure is a key result for the support functions.

The Quality measure assesses the satisfaction of FERC employees and agency leaders with the services provided internally by the support functions. These services range from capital planning processes and IT support to benefits counseling and special emphasis programs. Collectively, these services meet employee needs and equip them to perform effectively and achieve FERC's mission. To gauge this, the Commission leverages an internal survey. The Quality measure provides a high-level indication of how responsive the FERC's support

functions are to the needs of the offices and employees in developing and delivering internal services. Thus, the Quality measure is a key result for the support functions.

The People, Dollars, and Quality measures each capture a key result for the FERC support functions. Together they provide a comprehensive picture of performance and contribution of those functions in managing agency resources effectively through an engaged workforce.

| People Measure Results | | | | | | |
|------------------------|----------------|----------------|----------------|----------------|----------------|----------------|
| FY 2014 Actual | FY 2015 Actual | FY 2016 Actual | FY 2017 Actual | FY 2018 Actual | FY 2019 Target | FY 2020 Target |
| N/A | 72% | 75% | 77% | 83% | 80% | 80% |

Data Table and Interpretation of Data. The measure is based on 19 questions from the Federal Employment Viewpoint Survey (FEVS); 15 questions which OPM uses to define the Employee Engagement Index, plus 4 additional agency-specific questions that are important to the agency’s success. The reported result is an average of the percent of favorable (i.e., positive) ratings across all respondents for each item. Higher percentages are an indication of greater employee engagement. The FY 2018 result for the People measure continues the

steady upward trend since FY 2015. The upward trend suggests that the support function efforts are having a positive impact and should be continued and maintained. The historic results served to inform the FYs 19 and 20 targets, which represent a minimum threshold. Results below the targets will serve as an alert system that provides FERC an indication that issues may have arisen regarding employee engagement.

| Dollars Measure Results | | | | | | |
|-------------------------|----------------|----------------|----------------|----------------|----------------|----------------|
| FY 2014 Actual | FY 2015 Actual | FY 2016 Actual | FY 2017 Actual | FY 2018 Actual | FY 2019 Target | FY 2020 Target |
| N/A | 95% | 96% | 93% | 94% | 98% | 98% |

The measure is based on the obligation rate of budget authority for the fiscal year. The greater the percent of budget authority obligated, the more effective and efficient FERC is at utilizing its financial resources.

The performance target for FYs 2019 and 2020 are established at 98%. The targets are considered a minimum threshold for performance. Results below the targets will serve as an alert system that provides FERC an indication that issues may have arisen regarding execution of its financial resources.

The FY 2018 result for the Dollars measure increased slightly over the FY 2017 results, however there is room for im-

| Quality Measure Results | | | | | | |
|-------------------------|----------------|----------------|----------------|----------------|----------------|----------------|
| FY 2014 Actual | FY 2015 Actual | FY 2016 Actual | FY 2017 Actual | FY 2018 Actual | FY 2019 Target | FY 2020 Target |
| N/A | 64% | 68% | 78% | 82% | 80% | 80% |

The measure captures employee satisfaction ratings of 20 different internal services. Each service receives a result of percent positive responses, which allows specific program managers to assess their program’s responsiveness and take follow up actions, as needed. The consolidated measure is reported as an aggregated average. Higher percentages are an indication of greater satisfaction, overall, with the assessed support services.

Analysis. Although these are new strategic measures, FERC’s support functions have been using these results internally to guide action since FY 2015. For each of the measures, FERC’s efforts have been focused on improvement and include a range of activities.

The FY 2018 results for the Quality measure exceeded the prior year’s results by four percent, and the results have shown a consistent increase since the inception of the internal survey. The upward trend suggests that the support function efforts are improving and should be continued and maintained.

For the People measure, FY 2018 efforts were directed towards the support function staff with the intention of expanding to the entire agency in FY 2019. The improvement efforts started with a strong commitment to action to improve the workplace and make FERC a better place to work. The support function staff implemented a systematic and disciplined action planning process that included a deeper dive into the results to ensure

they were understood; and to help identify additional key areas for improvement. Action planning included providing employees with opportunities to provide qualitative feedback on factors that had either a positive and/or negative impact on their level of engagement.

For the Dollars measure, FY 2018 efforts continued with a hiring strategy in order to instill in managers a different way of thinking about how and when they need to hire staff. Support function staff continued to meet with program offices on a regular basis. These meetings were used to track each offices' status in obligating funds and to review and refine each offices' hiring forecasts and assessments of staffing needs. These meetings provided hands-on opportunities to provide guidance and to ensure that progress is being made in hiring staff according to projected needs. In addition, program requirements were mapped on a schedule that forecasted when an obligation would take place. Based on this mapping, actions were implemented to ensure that all planned requirements were obligated in a timely manner.

For the Quality measure, FY 2018 efforts included analysis of the internal quality survey results. In addition to asking staff and senior leaders to give a satisfaction rating for each service, the survey also asked people to rate the attributes of each service. The service owners were provided with an interactive dashboard of the survey results for their service. The dashboard is designed to help service owners identify the service attributes that stand out as leverage points for action. Service owners were tasked with implementing improvement actions specific to their service. In addition, the improvement actions for individual services were coordinated in order to minimize redundant expenditure of resources and maximize the potential for synergies across services.

The targets for each of the measures were informed by the historic results as well as planned activities in FYs 2019 and 2020. The targets for each measure will serve as a minimum threshold; in other words, FERC does not want performance results to fall below the target.

Over the next two years, FERC will continue FY 2018 efforts for each of the three measures and will capitalize on opportunities to improve. In particular, FERC will implement an integrated human capital initiative that includes development training, the roll-out of knowledge management tools, and a targeted hiring process. FERC will establish an internal governance structure for leveraging data as a strategic asset. This will be followed by a multi-step initiative to improve data quality and develop user-friendly data and analysis tools. FERC will also implement procedures and guidance to improve operational measures and conduct data-driven reviews to improve decision-making.

During FY 2018, FERC encountered a number of risk factors related to its efforts. In particular, qualified staff, particularly those with IT and cyber security expertise, were increasingly difficult to attract and retain. In addition, the pace of technology development made it more difficult for FERC's IT staff to provide best in class hardware and software capabilities. It also created gaps between FERC's IT capabilities and the IT capabilities of industry stakeholders.

Over the next two years, FERC expects the influence of risk factors, particularly the shortage of qualified staff and the pace of technology development to continue. In addition, any unforeseen changes in agency priorities could make it more difficult for FERC's support functions to meet the agency's needs. The Commission will continue to monitor these and other risk factors and address them as needed.

Objective 3.2

FACILITATE PUBLIC TRUST AND UNDERSTANDING OF COMMISSION ACTIVITIES BY PROMOTING TRANSPARENCY, OPEN COMMUNICATION, AND A HIGH STANDARD OF ETHICS

Facilitating understanding of how the Commission carries out its responsibilities and maintaining public trust in the Commission are important components of the Commission's commitment to organizational excellence. Trust and understanding increase acceptance of FERC decisions and reduce the potential for the public to dispute FERC rules and regulations, thus enabling the creation and enforcement of policy.

The Commission achieves this objective by maintaining processes and public information services that promote transparency and open communication with respect to the conduct of the Commission's business. FERC's proactive communication, along with an online document repository and timely responses to inquiries, foster awareness and understanding of the Commission's activities.

The Commission also advances this objective by maintaining internal processes and services that ensure adherence to statutes, regulations, and self-imposed standards. In addition, FERC provides training and guidance to promote an ethically informed workforce. These activities further encourage public confidence in the Commission's activities and ability to fulfill its responsibilities.

SITUATIONAL ASSESSMENT

The Commission took specific actions to address strategic issues and opportunities described in the FY 18-22 Strategic Plan.

Situational Assessment Item 1: Greater Public Interest in Regulatory Issues

Greater public interest in and concern about issues that are or may come before the Commission are creating the need for more dynamic engagement processes with the public.

IMPLEMENTING THE STRATEGIC RESPONSE

The Commission will take multiple actions to enhance communication and engagement with the public.

- Explore opportunities to engage more effectively with the public and enhance public participation in Commission proceedings through its online applications and website.
- Focus on deploying more flexible, multimodal mechanisms to enhance communication with the public and other stakeholders.
- Focus on understanding engagement/participation/messaging needs of the Commission and aligning FERC's efforts.

In FY 2018, FERC's efforts have focused on making upgrades to its communication infrastructure. This is important to establish the foundation for exploring different channels and multimodal mechanisms to communicate with the public. It will also enhance public engagement by providing more reliable and user-friendly interfaces. In FY 2019, the Commission plans to modernize the public-facing website, FERC.gov. The rebuilt and redesigned website will make it easier for stakeholders and the public to access information, and will add elements making the site easier to access using mobile devices. Modern-

ization will improve usability, content, navigation and design to make the site mobile friendly and to place its content in the cloud with content management that includes record retention and management. The project also would add dynamic GIS mapping for such items as Project Search, and dynamic databases with information for citizens, congressional staff, and Commission staff.

Additionally, In FYs 2019 and 2020, FERC will continue to enhance its communication infrastructure. FERC will also work to clarify Commission needs regarding both messaging to and engaging with the public. Based on the identified needs, FERC will look for opportunities to more effectively engage with stakeholders and enhance public participation in proceedings. FERC will also work on developing a consistent and integrated message to stakeholders and the public. At the same time, FERC will work at developing and communicating an internal standard for front line program offices for communicating to the public about FERC.

Because the strategic response is still in the early stages of implementation, it is too soon to observe direct impacts. However, over the next two years, the Commission expects stakeholders will leverage the additional opportunities for engagement the Commission intends to create relative to this response. The Commission is hopeful these interactions will generate positive perceptions from stakeholders and increase

greater understanding of Commission processes.

MONITORING OF THE RISK FACTORS

The implementation of the strategic response faces a number of risk factors that could affect its implementation and effectiveness. One such risk involves the diverse stakeholder groups which interact with the Commission. The stakeholders have varying access to technologies and communication systems, which means the Commission must develop and maintain messages in multiple formats/modes. Additionally, to contribute to the outcome of increased engagement, the mes-

sages and tools must be tailored to each group, which may take additional time, effort, and cost. Further, the fast changing pace of the energy sector may result in Commission messages becoming outdated if particular concerns or priorities in the national conversation change abruptly. The Commission will continue to monitor these and other risk factors and address them as needed.

CORE FUNCTIONS

In addition to addressing its strategic priorities, the Commission continued to perform its Core Functions and fulfill its responsibilities as a regulatory agency.

Core Function 3.2.1: Develop and maintain internal processes and services that promote high standards of ethics.

PUBLIC TRUST

Ethics. The Commission's ethics program aims to promote the highest standards of ethical conduct by ensuring that employees understand ethical requirements and that their conduct conforms to statutes and regulations that set the standards of conduct for federal employees. The Commission has a Designated Agency Ethics Official, an Alternate Designated Agency Ethics Official and ten Ethics Officials all of whom are committed to promoting high standards of ethical conduct and implementing the agency's ethics obligations. Ethics officials regularly receive ethics training to stay abreast of the latest changes. Exceeding the Office of Government Ethics' training requirements, in FY 2018, the Commission's ethics staff provided annual ethics training for all Commission employees, reviewed approximately 800 public and confidential financial disclosures, and responded to numerous ethics inquiries. In FYs 2019 and 2020, the Commission will continue the work done in FY 2018. Additionally, the Commission will pursue new methods of conducting ethics training or other innovations to the overall ethics program. The Commission will also explore procuring or creating systems to allow electronic

submission, review, tracking and certification of confidential financial disclosures.

FOIA. To promote transparency and public confidence in the Commission's programs, Commission staff responds to requests under the Freedom of Information Act, 5 U.S.C. § 552. The Commission seeks to issue responses to 85 percent of such requests within the statutory time frame of 20 business days, excluding statutory-authorized extensions. In FY 2018, the Commission processed 90 FOIA requests and 91 CEII requests.

Commission staff cannot predict the number of FOIA and CEII requests that will be submitted to the Commission in a given year. However, for all FOIA submissions, the goal for processing expedited requests will be 10 calendar days or less. The goal for processing simple FOIA requests will be 2 business days after a recommendation is received from General and Administrative Law.

Core Function 3.2.2: Maintain processes and public information services in accordance with the principles of transparency and open communication.

EXTERNAL COMMUNICATION TOOLS AND METHODS

Commission staff is highly responsive to the needs of stakeholders. Commission staff must communicate clearly and concisely with the media so that stakeholders and the public can be aware of and understand the Commission's actions. To that end, Commission staff consistently provides detailed background material on Commission meeting orders to help the media, stakeholders and the public understand complex mat-

ters, and posts links to the actual orders to the Commission's web page as quickly as possible after each meeting.

Staff regularly posts links to the actual orders on FERC social media and, as quickly as possible after each Commission meeting, posts individual Commissioners' statements and important issued orders to the Commission's web page. The Commission is also working to improve the transparency of FERC

processes to stakeholders and landowners in accordance with the findings of the DOE IG report. To that end, in FY 2019, FERC staff will post on the Commission website an update to the Commission's gas pipeline process brochure for landowners as well as a detailed process flowchart that clearly explains the process and Commission actions regarding pipeline certification.

FERC.gov and Public Facing Applications. The FERC.gov web page is the Commission's primary communication tool and the primary outlet for public outreach. All announcements, updates and news releases are posted there. In FYs 2019 and 2020, the Commission will be implementing its modernization of the FERC.gov website. This modernization will feature a rebuild and redesign of the website with the intention of making it easier for stakeholders and the public to access information they need. The Commission will select a vendor for construction of the site in early FY 2019, with the intent of having the site publicly available by the end of FY 2019 or early FY 2020.

Through the use of the Commission's eLibrary and eSubscription web pages, the public can obtain extensive information concerning documents both submitted to and issued by the Commission. The Commission seeks to ensure that all filings and Off-the-Record Communication (Ex Parte) submitted to and from the Commission are publicly noticed timely and accurately. The Commission continues to make the maintenance and implementation of effective filing procedures a high priority, therefore, the timely processing of incoming documents ensures the information is channeled to Commission staff for prompt review and action. As a result, timely and accurate Commission issuances, such as notices, orders, and major rules, continue to promote the flow of information through all levels of the agency and to all interested parties.

During FY 2018, the Commission received over 74,000 filings which were successfully processed and published on the eLibrary system. Also during this period, there were over 1,040 Commission voted orders and 8,000 delegated orders issued and published on eLibrary. In addition, there were roughly 4,000 public notices published on eLibrary, of which 27 of the 4,000 public notices included Ex Parte communication. The 27 Ex Parte communication public notices included approximately 300 prohibited/exempt communications. For upcoming FYs 2019 and 2020, the Commission plans to improve the FERC Online applications, including electronic filing, and the eLibrary data repository in order to provide more reliable, efficient, and enhanced service to the public and other stakeholders.

Social Media. Those new forms of media include video productions and podcasts, which the Commission is using to expand its outreach for the future. The Commission's video and podcast outreach programs are poised for future growth.

Most recent videos have introduced viewers to FERC's eFiling and eComment systems so members of the public can submit comments on project proposals or other matters, and have educated viewers about the purpose and procedures related to the monthly Commission meetings. All videos are posted on the Commission's web and YouTube pages, and shared over social media.

The Commission's video and podcast outreach programs continue to expand for future growth. Continued public interest in Commission meetings led to the FY 2018 production and posting of a video introducing viewers to the Commission meeting process and procedures, and instructions on what the public may and may not do during Commission meetings. Plans for FY 2019 include videos explaining the pipeline siting process (to go along with the new landowner brochure) and describing the National Environmental Policy Act review process governing the siting and construction of pipelines. All videos are posted on the Commission's web and YouTube pages, and shared over social media. Staff is exploring use of the video format to explain other Commission processes and policies to the public.

The Commission has successfully adapted its podcast efforts to include topics of great interest to the public and to stakeholders; podcast interviews frequently are cited in continuing media reports on the Commission's actions. These podcasts, roughly 10 minutes in length, provide information on FERC actions, policies and processes in an engaging and entertaining manner. The Commission produced six podcasts so far in FY 2018.

The Commission continues to expand its following on social media. The number of FERC's Facebook, Twitter, LinkedIn and Flickr followers has grown to 30,000, with most of the growth appearing on Twitter. All Commissioners contribute to their own Twitter feeds, as does the Commission's Human Resources Division, which further expands the opportunities for the Commission to inform the public of its actions and activities. Further, many of the individual and institutional followers of the Commission's Twitter feeds re-post items, providing further awareness and understanding of the Commission's activities.

State, Congressional and International Outreach. The Commission also emphasizes effective communication with Congress and with state regulators and other officials. Commission staff respond in a timely and transparent manner to all congressional inquiries and where appropriate offer briefings for congressional staff on major Commission decisions. In FY 2018, before the House Energy and Commerce Committee and Senate Energy Natural Resources Committee, the Commissioners testified to the current priorities of the agency and laws within the Commission's jurisdiction. Commission staff also testified before Congress on LNG exports, PURPA mod-

ernization, and improving the hydro licensing process. Moving forward, the Commission will continue to work with Congress to examine the bulk power system related to distributed energy resources as well as an ongoing review of the Commission's 1999 Certificate Policy Statement.

Staff also consistently notifies state regulators and other officials when appropriate of Commission actions that are of interest, and frequently offers briefings via conference calls or webinars on major issues. In FY 2017, staff held twenty in-depth briefings on important Commission initiatives for state officials. On average, staff sent out 13 notifications of Commission actions per month to over 800 state contacts. Responses to inquiries from the general public averaged just over 450 per month with all requests for information addressed within three business days. For FY 2018, staff expects to meet or exceed this level of communication with state officials as well as members of the public, but these goals are dependent on many

variables including overall issuances from the Commission.

Finally, staff from various offices participate in information exchanges with international regulatory agencies, particularly focusing on wholesale market design issues. Such meetings allow staff to share and learn best practices, and to discuss emerging challenges in the respective energy markets. In FY 2018, Commission staff actively participated in the NAFTA negotiations. The Commission also finalized a Memorandum of Understanding with China. Digital video conferences were held with Brazil, China and the European Union. Overall, the Commission staff hosted visits from nearly 60 foreign countries. In FYs 2019 and 2020, staff plan to continue to build upon these relationships, attend meetings with regulatory counterparts in Mexico, Canada, Europe and Asia, and, upon request, provide assistance to sister agencies such as the Department of State and Commerce.

PERFORMANCE MEASURE

Commission staff will use the following measures to assess performance in Objective 3.2. The result of these measures will be used in combination with other data and supplemental information to establish a more complete picture of performance on this objective.

Objective 3.2 Performance Measure: The percent of Commission filings and issuances that are disseminated to the public within established timeframes

Description. This measure serves as an indicator of FERC's effectiveness in providing timely access to documentation associated with a proceeding, an application, other FERC action, or filer request. As such, the measure reinforces FERC's commitment to transparency, by making documents readily and quickly available to all interested parties. By providing timely access to documents, FERC builds public trust and reinforces its ethical stance.

The measure looks at individual filings, including both submissions (externally created) and issuances (internally created). All documents submitted as official filings intended for publication in the Commission's public data repository (eLibrary) are included with the exception of eTariff filings that are published within minutes and eForms that do not contribute to a proceeding. The measure looks at whether the time between the first receipt of a filing and its appearance in eLibrary is within the established timeframe for that type of filing. Since the result is an indication of timeliness, the greater the percentage of filings that meet their timeframe the better.

The measure demonstrates FERC's commitment to open communications. Just as FERC mandates that applicants, intervenors, and other filing parties adhere to published timeframes, by this performance measure FERC shows that the Commission holds itself accountable to like standards.

The results will help FERC determine if software applications, business procedures, and staff/contractor capabilities adequately support the performance goal. Where a performance trend indicates less than optimal results, FERC will initiate a business analysis to identify points of weakness. Those points will be strengthened through training, application upgrades, or revision in operational procedures.

| The percent of Commission filings and issuances that are disseminated to the public within established timeframes. | | | | | | | |
|--|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| FY 2014 Actual | FY 2015 Actual | FY 2016 Actual | FY 2017 Actual | FY 2018 Actual | FY 2018 Target | FY 2019 Target | FY 2020 Target |
| 81% | 87% | 93% | 94% | 99% | 97% | 98% | 98% |
| FY 2018 Target: Met | | | | | | | |

Data Table and Interpretation of Data. The FY 2018 result of 99 percent exceeded the target and represents a high level of performance.

The result continues the five-year trend of increasing performance. Although the targets for this measure are considered minimum thresholds for performance, it is likely that the results are near a practical maximum since there will always be anomalous situations which prevent a 100 percent achievement. Accordingly, the FYs 2019 and 2020 targets will be set at 98 percent. Having reached a maximum, future results may show steady or a minor decrease in performance. The measure will thus serve as an alert system that provides FERC an indication that issues may have arisen in the publication of findings.

Analysis. The FY 2018 result, which exceeded the target, reflects the Commission’s emphasis on consistently meeting its established timeframes for the publication of filings. The exceeded target can be attributed to the deployment of an enhanced Publish Issuance Workflow (PIW) application during late FY 2017. The improved PIW application moved virtually all regional office initiated filings from the hard copy (paper) filing channel to the electronic channel. This represented a significant reduction in processing time, going from days to an hour or less for each issuance.

Since the measure results are at a practical maximum, FERC will move into a maintenance mode and the targets for the next two years will be set, and remain, at 98 percent. Improvement efforts have reached a point of diminishing returns and the cost/benefit of additional increases would not be warranted.

Several previously identified risk factors will continue to be monitored in FYs 2019 and 2020. First, FERC’s ability to meet the targets can be affected by employee turnover. There is a natural learning curve when new staff are brought on board resulting in a temporary loss of efficiency. This factor, which affected the FY 2017 result, will continue to be a risk in the future. As part of its efforts to maintain the high level of performance, FERC staff will monitor the operation of the electronic processes, including PIW and eLibrary. The Commission is seeking to upgrade its IT technology. This could lead to temporary outages in eLibrary, which could affect timeliness, especially for filings that have a one-hour target timeframe. Early identification of issues should enable them to be addressed before they affect performance.

Appendix A

The Commission has an important role in the development of a reliable energy infrastructure and the protection of wholesale customers from unjust and unreasonable rates and undue discrimination and preference. The Commission draws its authority from various statutes and laws that are described below

HYDROPOWER

In 1920, Congress passed the Federal Water Power Act, which gave the Federal Power Commission (FPC), the Commission's predecessor, its original authority to license and regulate non-federal hydropower projects. As Congress expanded the regulatory authority of the FPC, the Federal Water Power Act ultimately became Part I of the Federal Power Act (FPA). Part I of the FPA has been amended by subsequent statutes including the Electric Consumers Protection Act of 1986, the Energy Policy Act of 1992, and the Hydro- power Regulatory Efficiency Act of 2013. The Commission relies on these authorities to carry out its hydropower responsibilities, including: the issuance of preliminary permits; determinations regarding qualifying conduit facilities; the issuance of licenses for the construction and operation of new projects; the issuance of relicenses for existing projects; the investigation and assessment of headwater benefits; and the oversight of all ongoing project operations, including dam safety and security inspections, public safety, and environmental monitoring. While the Commission's responsibility under the FPA is to strike an appropriate balance among the many competing developmental and non-developmental (including environmental) interests, several other statutes affect hydropower regulation. These include, but are not limited to, the NEPA, Clean Water Act, Coastal Zone Management Act, Endangered Species Act, Fish and Wildlife Coordination Act, and National Historic Preservation Act.

ELECTRIC

Since 1935, the Commission has regulated certain electric industry activities under Part II of the FPA. Under FPA sections 205 and 206, the Commission ensures that the rates, terms and conditions of sales for resale of electric energy and transmission in interstate commerce by public utilities are just and reasonable and not unduly discriminatory or preferential. Under FPA section 203, the Commission reviews mergers and acquisitions, and certain other corporate transactions involving public utilities and public utility holding companies. Under FPA section 204, the Commission reviews the issuance of securities or assumptions of liabilities by certain public utilities subject to its jurisdiction.

Section 215 of the FPA provides for the establishment of a federal regulatory system of mandatory and enforceable electric reliability standards for the Nation's bulk power system. The standards, developed by a Commission-certified ERO and approved by the Commission, apply to all users, owners, and operators of the bulk power system. The ERO operates within the 48 contiguous states and is under the direct oversight of the Commission. The Commission is ultimately responsible for the effective enforcement of the standards.

The Commission also has other electric regulatory responsibilities under portions of the Public Utility Regulatory Policies Act of 1978 and the Public Utility Holding Company Act of 2005 pertaining to qualifying facilities, exempt wholesale generators, and books and records access requirements. Under the Energy Independence and Security Act of 2007 (EISA), the Commission, along with the Department of Energy and National Institute of Standards and Technology (NIST), has a role to play in ensuring awareness, coordination, and integration of the federal government's diverse activities related to smart grid technologies and practices.

The Commission's regulations apply primarily to investor-owned utilities. In contrast, federal government-owned utilities (e.g., Tennessee Valley Authority, federal power marketing agencies), state and municipal utilities, and most cooperatively-owned utilities are not subject to Commission regulation (with certain limited exceptions). Regulation of retail sales and local distribution of electricity are matters left to the states. In addition, the Commission does not authorize the construction of new generation facilities (other than non-federal hydroelectric facilities); such authorization is the responsibility of state and local governments.

NATURAL GAS AND LIQUEFIED NATURAL GAS

The Commission's role in regulating the natural gas industry is largely defined by the Natural Gas Act of 1938 (NGA). Under section 3 of the NGA, the Commission reviews the siting, construction, and operation of facilities to import and export natural

gas, including liquefied natural gas (LNG) terminals. As part of this responsibility, the Commission conducts cryogenic design and technical review of the proposed LNG facilities during the authorization process, and compliance inspections during construction. Once an LNG facility is constructed and operational, the Commission conducts safety, security, and environmental inspections for the life of the facility.

Under section 7 of the NGA, the Commission issues certificates of public convenience and necessity for the construction and operation of interstate natural gas pipelines and storage facilities. The Commission also conducts compliance inspections of natural gas pipelines and storage facilities during construction. Although the Commission does not have jurisdiction over the safety or security of natural gas pipelines or storage facilities once they are in service, it actively works with other agencies that do have these responsibilities, most notably the Pipeline and Hazardous Materials Safety Administration of the Department of Transportation.

As required by NEPA, the Commission prepares environmental documents for proposed natural gas and LNG facilities and acts in conformance with other environmental statutes as appropriate, including the Endangered Species Act, National Historic Preservation Act, Clean Water Act, Clean Air Act, and Coastal Zone Management Act.

Under sections 4 and 5 of the NGA, the Commission oversees the rates, terms and conditions of transportation and of certain sales for resale of natural gas in interstate commerce. The Commission is also responsible for determining fair and equitable rates for intrastate pipelines transporting or storing natural gas under section 311 of the Natural Gas Policy Act of 1978 (NGPA). The Commission's jurisdiction over sales for resale of natural gas is limited by the NGPA and the Natural Gas Wellhead Decontrol Act of 1989. Regulation of the production and gathering of natural gas, as well as retail sales and local distribution of natural gas, are matters left to the states.

OIL

The Interstate Commerce Act (ICA) gives the Commission jurisdiction over the rates, terms and conditions of transportation services provided by interstate oil pipelines. Oil pipelines transport crude oil, natural gas liquids (ethane, propane and butane), refined petroleum products (gasoline, jet fuel and fuel oils), and liquefied petroleum gas. The Commission has no authority over the construction of new oil pipelines or over other aspects of the industry such as production, refining or wholesale or retail sales of oil.

In addition to ensuring oil pipelines comply with the Commission's regulations governing oil pipelines' tariffs subject to section 6 of the ICA, the Commission's responsibilities include the establishment of equal service conditions to provide shippers with equal access to pipeline capacity, and analyzing market-based, cost-of-service and anchor shipper contract rate applications to ensure just and reasonable rates for transporting petroleum and petroleum products by pipeline in interstate commerce.

ENFORCEMENT

Through the Energy Policy Act of 2005 (EPA 2005), Congress gave the Commission broad authority to prohibit manipulation in wholesale energy transactions. Congress also enhanced civil penalties for violations of the FPA, NGA, and NGPA. EPA 2005 made three major changes to the Commission's civil penalty authority.

1. Congress expanded the Commission's FPA civil penalty authority to cover violations of any provision of Part II of the FPA, as well as of any rule or order issued thereunder.
2. Congress extended the Commission's civil penalty authority to cover violations of the NGA or any rule, regulation, restriction, condition, or order made or imposed by the Commission under NGA authority.
3. Congress established the maximum civil penalty the Commission may assess under the NGA, NGPA, or Part II of the FPA as \$1,000,000¹⁵ per violation for each day that it continues.

In addition, Congress expanded the scope of the criminal provisions of the FPA, NGA, and NGPA by increasing the maximum fines and increasing the maximum imprisonment time that apply when the Commission refers the case to the Department of Justice for criminal prosecution.

¹⁵ Such penalties are adjusted annually to reflect the effects of inflation, as provided by the Federal Civil Penalties Inflation Adjustment Act of 1990 and the Federal Civil Penalties Inflation Adjustment Act Improvements Act of 2015.

Appendix B

The Performance Measures from the Commission's FY 2014 – FY 2018 Strategic Plan are provided in this Appendix.

Performance Goal 1.1.1: Reduce interchange flows that are uneconomic

DESCRIPTION

The percentage change in uneconomic interchange flows (i.e., electricity flowing from a high-cost market to a low-cost market) between adjacent organized markets is one indication of market inefficiency. The extent to which interchange flows instead move in the economic direction from a low-cost market to a high-cost market is one indicator of the Commission’s success in accomplishing Objective 1.1 of the Commission’s Strategic Plan, which focuses on ensuring just and reasonable rates, terms and conditions.

The reported percentage change for this measure represents the change in the degree to which participants in adjacent organized markets schedule uneconomic interchange. Positive values reported for percentage change indicate that the uneconomic interchange flows increased from the previous year, while negative values reported indicate that uneconomic interchange flows decreased. Since decreases in uneconomic interchange flow are desired, negative values for this measure are desired. As organized markets increase coordination and implement policies and rules that better promote efficiency between adjacent organized markets and remove incentives to schedule uneconomic interchange, the percentage change in uneconomic interchange flow should become negative. However, realistic expectations for improvements from policies that can be implemented from year to year are limited. In fact, there are likely declining marginal returns to such policies, such that the less costly and/or most effective policies are implemented first, and subsequent policies have marginally less effect. As such, this document sets a target for year-over-year improvement, but does not expect the rate of improvement to increase every year.

| Fiscal Year | FY 2012 | FY 2013 | FY 2014 | FY 2015 | FY 2016 | FY 2017 | FY 2018 | FY 2018 |
|---|---------|---------|---------|---------|---------|---------|---------|---------|
| | Actual | Actual | Actual | Actual | Actual | Actual | Actual | Target |
| Performance Indicator: Percentage change in uneconomic interchange flows | -2.98% | -1.99% | 1.54% | -2.12% | -3.84% | -2.07% | 1.36% | -1.25% |
| FY 2018 Target: Not Met | | | | | | | | |

ANALYSIS

The FY 2018 actual result represents the percentage change between interchange flows in FY 2017 and FY 2018 that were uneconomic. The frequency of uneconomic flows increased on the other three of the measured interfaces in FY 2018, but decreased between the Southwest Power Pool (SPP) and the Midcontinent Independent System Operator (MISO). A number of factors may have influenced the increase in uneconomic flows in FY 2018. In addition to systemic variations including the economy and unpredictable market behavior, unusually extreme weather events in the winter of 2017/2018 may have contributed to uneconomic interchange flows.

The ISO-NE Market Monitor identified biases in Coordinate Transaction Scheduling (CTS) forecasts between New York (NY-ISO) and New England (ISO-NE), stating that these forecast biases occur in opposite directions, which increases the price spread between the markets and the frequency of uneconomic flows across the interface. The NYISO Market Monitor suggested that due to large transaction fees on trading activity across interfaces, market participants transacting across the NYISO/PJM interface frequently require significant price spreads between markets before scheduling power flow. These transaction fees can reduce liquidity and the efficiency of the CTS process. These market inefficiencies may have contributed to the increased frequency of uneconomic interface flows in FY 2018. The market monitors in these regions identified the above issues in their State of the Market reports and recommended actions to remedy them.

Conversely, the effects of operating experience and a change in market rules may have contributed to the increase in economic flows on the SPP/MISO interface in FY 2018. To facilitate the market-to-market coordination process, MISO and SPP began using new software in 2017 that enables the RTOs to transfer monitoring responsibility of flowgates.

Performance Goal 1.1.2: Participation of stakeholders in regional transmission planning meetings

DESCRIPTION

The measure captures the level of participation of stakeholders in regional transmission planning meetings. Recognizing the importance of transmission planning, the Commission issued Order No. 1000, which requires public utility transmission providers to collaborate in regional transmission planning and take steps to encourage participation by all stakeholders in those planning activities. This measure provides an indication of the potential effectiveness of Order No. 1000 in encouraging greater participation in the regional transmission planning process, which could result in more efficient and cost-effective transmission solutions.

| Fiscal Year | FY 2014 Actual | FY 2015 Actual | FY 2016 Actual | FY 2017 Actual | FY 2018 Actual | FY 2018 Target |
|---|--------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Performance Indicator: Average attendance across all the regions | Data not available | 111.6 | 275.4 | 293 | 346 | 293 |
| FY 2018 Target: Met | | | | | | |

ANALYSIS

Staff estimates a measure of the annual level of participation based on the number of participants attending regional transmission planning meetings. To calculate the level of participation, staff calculated an average attendance number across all the regions based on the total number of stakeholders¹⁶ attending the various meetings that staff monitored in each region during FY 2018 divided by the number of regions. The average attendance across all the regions for FY 2018 increased to 346 from 293 for FY 2017. The change in FY 2017 and FY 2018 participation numbers were due to additional meetings being held and increase participation in certain regions. Averaging the attendance numbers for the various meetings monitored by staff is a more accurate reflection of attendance than a simple count because stakeholder participation fluctuates between meetings held at different times in the transmission planning cycles. The Order No. 1000 monitoring effort began in earnest during FY 2015. Monitoring for most regions covered only the last nine months of FY 2015 because, during the first part of FY 2015, the Commission was still in the process of addressing the final regional compliance proposals. Staff monitored 76 meetings during FY 2018 and expects to monitor at least the same number of meetings in FY 2019. Staff found that the stakeholders were active and engaged in the Order No. 1000 process.

While effective transmission planning requires at least a base level of participation, it does not require 100 percent participation. Although the Commission anticipates a consistent base level required for effective planning and targets the same average participation, the Commission anticipates that attendance for each region will vary based on size and interest by non-incumbents. In particular, Commission staff has found from its monitoring during FYs 2016, 2017, and 2018 that attendance by stakeholders at the transmission planning meetings is greater in the regions with regional transmission organizations or independent system operators.

¹⁶ Staff counted representatives from the same entity as one participant at a particular meeting regardless of the number of representatives in attendance.

Performance Goal 1.1.3: Cases resolved by settlements

DESCRIPTION

In reviewing filings, the Commission may determine that a trial-type evidentiary hearing or other procedures are needed to bolster the factual record on which the Commission will base its decision. In these instances, the Commission recognizes the value of resolving issues through consensual means where possible. Settling cases benefits energy consumers by dramatically limiting the time, expense, and resources that the Commission and outside parties would otherwise devote to litigating these cases. A settlement not only provides ratepayers reduced rates and refunds far more quickly than litigation, but also provides business certainty and can facilitate the construction of needed infrastructure in a timelier manner. Further, case resolution through settlement is likely to be more acceptable to the parties than a litigated result, and therefore eliminates the likelihood of an appeal. While the majority of cases set for hearing in any given fiscal year traditionally are resolved through settlement procedures, many factors affect the percentage of cases resolved through settlement in a given fiscal year. These include: i) the type and complexity of issues presented; ii) whether the issues are novel or have been addressed by the Commission in the past; and iii) the parties' willingness to settle.

| Fiscal Year | FY 2013 Actual | FY 2014 Actual | FY 2015 Actual | FY 2016 Actual | FY 2017 Actual | FY 2018 Actual | FY 2018 Target |
|---|--------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Performance Indicator: Percentage of cases set for hearing, settlement procedures or otherwise resolved by settlements | Data not available | 78.40% | 92.40% | 89.10% | 87.50% | 95.70% | 75% |
| FY 2018 Target: Met | | | | | | | |

ANALYSIS

The Commission met its target for achieving settlements during FY 2018. Eighty-nine cases were settled (85 full or partial settlements and 4 case withdrawals resulting from settlement negotiations in docketed proceedings) out of 93 cases resolved during the fiscal year.

Performance Goal 2.2.1: Hydropower facilities have approved dam safety programs

DESCRIPTION

To safeguard public safety, environment, and hydroelectric facilities, licensees with hydropower dams designated as high and significant hazard potential are required to implement an Owner’s Dam Safety Program that complies with Commission regulations. In 2012, the Commission began requiring licensees with high and significant hazard potential dams to develop and implement an acceptable Owner’s Dam Safety Program that is robust and focused, which acknowledges the dam safety responsibilities at each level of the licensee’s organization, establishes protocols for internal and external dam safety communication, and has clear designation of dam safety responsibilities among the licensee’s staff. The effectiveness of Objective 2.2 is evident by the total percentage of licensees that are able to maintain compliant Owner’s Dam Safety Programs.

| Fiscal Year | FY 2013 | FY 2014 | FY 2015 | FY 2016 | FY 2017 | FY 2018 | FY 2018 |
|---|--------------------|---------|---------|---------|---------|---------|---------|
| | Actual | Actual | Actual | Actual | Actual | Actual | Target |
| Performance Indicator: Percent of high or significant hazard hydropower facilities that have approved dam safety programs | Data not available | 64% | 78% | 84% | 83% | 87% | 90% |
| FY 2018 Target: Not Met | | | | | | | |

ANALYSIS

While the FY 2018 target was not met, the Commission did achieve its highest percentage of approved Owners Dam Safety Programs (ODSPs) in place since the performance goal was first developed, as the final figure represents an increase of 4% over FY 2017. Progress continues to be made to ensure that ODSPs are developed and implemented as new projects are developed, existing project’s hazard classifications increase, and Licensee’s personnel change. Additionally, in FY 2018, five-year external audits of ODSPs began to be performed by independent third parties. The audit results will be used to continually improve the dam safety program and it is expected that common best practices will evolve from the findings.

Performance Goal 2.2.2: LNG facility recommendations implemented by established time frames

DESCRIPTION

In order to minimize risks to the public and to ensure reliable infrastructure, LNG terminals are inspected annually to ensure that they are being maintained and operated in a manner consistent with the Commission’s certificate/authorization for the life of the facility. The Commission issues a letter after each LNG inspection that lists any recommendations for safe and reliable operation and a timeline for completing these items. Companies are responsible for completing these items on time to ensure that the facility continues to be in compliance with the Commission’s certificate/authorization. The Commission makes a concerted effort to craft recommendations that clearly identify equipment or operational issues/improvements with practical timelines for completion. FERC also works with the facilities as needed to ensure that they understand the recommendations and how they can be implemented. Accordingly, the percentage of recommendations implemented within established timeframes provides a measure of the Commission’s impact on LNG facility safety and reliability and thus serves as an indicator of the Commission’s effectiveness in achieving Objective 2.2.

| Fiscal Year | FY 2014 Actual | FY 2015 Actual | FY 2016 Actual | FY 2017 Actual | FY 2018 Actual | FY 2018 Target |
|--|--------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Performance Indicator: Percent of LNG facility recommendations implemented by established time frames | Data not available | 91% | 100% | 100% | 100% | 90% |
| FY 2018 Target: Met | | | | | | |

ANALYSIS

The reported percentage for this measure represents timely compliance with FERC issued LNG recommendations for in-service Section 3 LNG facilities. FERC conducted seven inspections at the seven operational LNG terminals under FERC jurisdiction in FY 2018. In FY 2018, eight recommendations were due to be implemented to improve the safety and reliability of the facilities. 100 percent (8 of 8) of the recommendations were implemented in the established time frames. The eight recommendations were due to be implemented at four of the seven terminals inspected. The remaining three terminals had no recommendations due for implementation in FY 2018.

Performance Goal 3.1.1: Average hiring cycle time

DESCRIPTION

The Commission must ensure planned staffing levels are sufficiently maintained to ensure efficient utilization of its financial resources. The Commission allocates over two-thirds of its budget to employee compensation. Any undue lapse in recruiting and hiring new employees impacts the ability of the agency to balance its expenditures with its recovery of its annual appropriation, as required by statute. The Commission will take action to reduce the amount of time it takes to fill vacancies. Accordingly, the average hiring cycle time is a measure of the Commission’s performance in this regard and serves as an indicator of the Commission’s success in achieving Objective 3.1. The target for this measure is to maintain the average hiring cycle time of 55 days from need validation to offer.

| Fiscal Year | FY 2011 | FY 2012 | FY 2013 | FY 2014 | FY 2015 | FY 2016 | FY 2017 | FY 2018 | FY 2018 |
|-------------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| | Actual | Actual | Actual | Actual | Actual | Actual | Actual | Actual | Target |
| Performance Indicator: | 69 | 56 | 54 | 55 | 50 | 54 | 55 | 49 | 55 |
| Average hiring cycle time | Days | Days | Days | Days | Days | Days | Days | Days | Days |
| FY 2018 Target: Met | | | | | | | | | |

ANALYSIS

The Commission executed a 49 day average hiring cycle time in FY 2018. This was due in large part to human resources staff working closely with Program Offices and hiring managers to make hiring a priority and adhering to agreed-upon service level agreements.

Performance Goal 3.1.2: Reduction in targeted information technology costs

DESCRIPTION

In order to support the Commission’s operations, we must deliver secure and effective technology solutions at a reasonable cost. With the ability to deploy emerging technologies that provide for lower cost IT solutions, the Commission is targeting a reduction in current costs for labor acquired through its IT support services contract. These savings will allow the Commission to reprogram funding to meet other mission-critical IT needs. Accordingly, the ability of the Commission to reduce targeted IT costs is a measure of its performance and serves as an indicator of the Commission’s success in achieving Objective 3.1.

The percent reduction in targeted IT costs is calculated cumulatively on FY 2015 baseline costs. A higher percent is an indication of greater savings as compared to the base year.

| Fiscal Year | FY 2014 Actual | FY 2015 Actual | FY 2016 Actual | FY 2017 Actual | FY 2018 Actual | FY 2018 Target |
|---|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Performance Indicator: Cumulative percent reduction in targeted IT costs | - | Baseline | 21.70% | 24.40% | 8.30% | 25.70% |
| Supplemental Information: Targeted IT Costs (in millions) | \$24.30 | \$24.50 | \$16.40 | \$19.20 | \$22.50 | \$18.20 |
| FY 2018 Target: Not Met | | | | | | |

ANALYSIS

Planned reduction in targeted IT costs related to FERC’s eLibrary document management solution and the IT Support Services contract were only partially realized; 8.3% versus 25.7%. Additional costs for hardware, software and labor were accrued commensurate with stabilizing the existing legacy eLibrary.

Performance Goal 3.1.3: Time and cost of building modernization on schedule and budget

DESCRIPTION

The Commission has established a design plan and budget for an extensive consolidation effort within its headquarters facility. This multi-million dollar renovation effort began in FY 2015 and will continue through FY 2020. The Commission has partnered with the GSA, private contractors and the facility owner to execute the required work. It is imperative that management closely monitor project performance relative to schedule and resources given the significant investment and the numerous entities involved.

Accordingly, the extent to which the modernization effort is completed within budget is the primary measure of the Commission’s performance in managing the project and serves as an indication of its effectiveness in achieving Objective 3.1. While schedule performance remains important to the overall effort, there are a number of constraints and external factors that make the measurement and reporting of schedule performance less of an indicator of the overall project’s performance. The project funding will be requested in phases, primarily to limit the amount of resources required in each fiscal year for project construction. This strategy enables the Commission to spread the recovery of these costs over the life of the project, thereby more effectively aligning its assessment methodology with its requirement to recover its annual appropriation from regulated entities. Although this funding approach enables the Commission to amortize and recover the project’s costs, it also creates a high risk of uncertainty in the schedule for later phases of the project, as annual appropriation decisions are beyond the control of the Commission and GSA. To mitigate the impact of these risks, the Commission will factor in sufficient contingency within the project budget. Moreover, the Commission will provide supplemental data to report on the project’s schedule.

The Cost Performance Index (CPI) is used as the primary indication of project performance relative to managing cost and budget. Specifically, Earned Value (EV), the value of the work completed, and Actual Cost (AC), the actual cost incurred to complete the work will be assessed in order to produce the Cumulative CPI. Cumulative CPI is calculated as follows: Cumulative CPI = EV / AC. A value higher than one indicates a favorable condition, while a value under one would be considered unfavorable.

| Fiscal Year | FY 2014 Actual | FY 2015 Actual ¹⁷ | FY 2016 Actual | FY 2017 Actual | FY 2018 Actual | FY 2018 Target |
|---|--------------------|---------------------------------|-------------------|-------------------|-------------------|-------------------|
| Performance Indicator: Cost Performance Index (CPI) | Data not available | 1.0 | 1.0 | 1.0 | Not applicable | 1.0 |
| FY 2018 Target: not applicable | | | | | | |

ANALYSIS

In FY 2017, the Commission expended resources to build-out the necessary swing space in anticipation of construction beginning in the Commission Headquarters building in FY 2018. However, due to delays in the modernization project there were no expenditures in FY 2018. As a result, the Commission was unable to measure the Cost Performance Index for FY 2018.

¹⁷ Based on timing of when the values used to calculate the CPI were made available, the FY 2015 performance period captures information through the first quarter of FY 2016.

Performance Goal 3.2.1: Deployment of a Knowledge Management Program¹⁸

DESCRIPTION

The deployment of this program ensures knowledge is shared across the Commission and an environment of continuous learning is present to address the retirement eligibility of 30 percent of the current workforce within the next five years. The Commission must maintain a highly skilled workforce to address its regulatory responsibilities. A knowledge management program provides employees a means to share critical information across the Commission and involves an analysis of the competencies necessary to perform their job requirements. The Commission also will deploy automated collaboration tools to capture and share knowledge gathered across the Commission. The entire deployment of the knowledge management program will be tracked against pre-established milestones. The percent of those milestones that are met is a measure of the Commission's performance in deploying the program and an indication of its accomplishment of Objective 3.2.

| Fiscal Year | FY 2013 Actual | FY 2014 Actual | FY 2015 Actual | FY 2016 Actual | FY 2017 Actual | FY 2018 Actual | FY 2018 Target |
|---|--------------------|----------------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Performance Indicator: Percent of milestones that are met in the deployment of a knowledge management program using automated tools | Data not available | Resource planning complete | 83% | 100% | 100% | 100% | 100% |
| FY 2018 Target: Met | | | | | | | |

ANALYSIS

In FY 2018 the Commission met all action planned in the deployment of knowledge management tools. This includes continuing efforts in our competency-based training program, including piloting the use of the engineering competency models in the Office of Electric Reliability. This pilot will be used as a model as we roll out competency models that will impact multiple Program Offices in FY 2019.

¹⁸ In the FY 2014 – 2018 Strategic Plan, this performance goal was established to measure the deployment of a competency based training program. In FY 2015, this measure was modified to measure the deployment of a knowledge management program to expand the scope of our original efforts to look more broadly at capturing critical organization knowledge and use it to promote learning.

Performance Goal 3.2.2: Employee Satisfaction Favorability Rating

DESCRIPTION

The Commission must ensure that employee performance is aligned with the Commission’s strategic goals and that employees have the resources they need to accomplish the Commission’s goals. Thus, this measure uses the results of the FEVS to measure employee perceptions on the Commission’s performance management system and the adequacy of resources.

| | FY 2011 | FY 2012 | FY 2013 | FY 2014 | FY 2015 | FY 2016 | FY 2017 | FY 2018 |
|---|--------------|--------------|--------------|--------------|--------------|----------------------|----------------------|--------------|
| Fiscal Year | Actual | Actual | Actual | Actual | Actual | Actual ¹⁹ | Actual ¹⁹ | Actual |
| Performance Indicator: Employee Satisfaction Favorability Rating | 66% positive | 65% positive | 67% positive | 69% positive | 71% positive | 71% positive | 74% positive | 76% positive |
| FY 2018 Target: Met | | | | | | | | |

ANALYSIS

This rating is defined as the weighted average of the percentage of employees who responded favorably to fifteen selected questions related to performance management and adequacy of resources in the FEVS. Between 2015 and 2018, the Commission developed and grew its FEVS effort into an Employee Engagement Program that helps senior executives lead more effectively and increases employee satisfaction and productivity. One of the main goals of the program is to ensure FERC remains one of the best agencies to work for in the federal government. Other goals include providing enhanced analysis of the FEVS to FERC leadership so that they can easily act on the results and bringing about positive change to the agency through structured action planning. A new goal of the program in 2018 has been to create a sense of community at the agency through various events and activities. FERC’s commitment to use FEVS results as a way to engage with employees continues to yield very high participation rates in the survey, 81% in 2018. These efforts have also increased the Commission’s employee satisfaction favorability rating by 5 percentage points from 71% in FY 2015 to 76% in FY 2017. Each office and component within the Commission plays an important role in ensuring employee satisfaction and adequacy of resources (e.g., providing sufficient training to employees). To ensure continued success with meeting this target, the Commission has and will continue our employee engagement efforts to communicate the results of each program office’s FEVS and work to improve the work environment. The Commission will also continue to provide each office with guidelines to help them develop action plans to address any areas not favorably rated and take corrective actions. Lastly, employee engagement efforts will focus on creating a sense of community at the Commission through events that focus on our agency’s mission and culture.

¹⁹ The results for FYs 2016 and 2017 were originally calculated using a straight average instead of a weighted average. The correct results are now reported in the data table. The difference is minor and would not have changed the Commission’s interpretation of the results and subsequent actions.

Appendix C

Key: P = Pending at year-end; R = Received; C = Completed

| | FY 2017 Actual | FY 2018 Actual | | | FY 2019 Estimate | | | FY 2020 Estimate | | |
|---------------------------------|----------------|----------------|-----|----|------------------|-----|----|------------------|-----|----|
| Pipeline Certificates | P | R | C | P | R | C | P | R | C | P |
| Construction Activity | 72 | 62 | 82 | 52 | 100 | 100 | 52 | 100 | 100 | 52 |
| Prior Notice & Abandonments | 13 | 66 | 67 | 12 | 75 | 75 | 12 | 75 | 75 | 12 |
| Compliance Filings & Reports | 161 | 396 | 557 | 0 | 400 | 400 | 0 | 400 | 400 | 0 |
| Environmental Analysis | 80 | 147 | 151 | 76 | 130 | 140 | 66 | 120 | 130 | 56 |
| Compliance & Safety Inspections | 0 | 746 | 746 | 0 | 700 | 700 | 0 | 550 | 550 | 0 |
| LNG Inspections | 0 | 14 | 14 | 0 | 13 | 13 | 0 | 15 | 15 | 0 |
| Rehearings | 29 | 48 | 52 | 25 | 25 | 35 | 15 | 25 | 35 | 5 |
| Complaints | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 |
| Declaratory Orders | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 |
| Remands | 4 | 0 | 3 | 1 | 1 | 2 | 0 | 1 | 1 | 0 |
| Dispute Resolution | 14 | 114 | 119 | 9 | 150 | 145 | 14 | 150 | 150 | 14 |

| | FY 2017 Actual | FY 2018 Actual | | | FY 2019 Estimate | | | FY 2020 Estimate | | |
|-----------------------|----------------|----------------|----|----|------------------|----|----|------------------|----|----|
| Hydropower Licensing | P | R | C | P | R | C | P | R | C | P |
| Original Licenses | 13 | 3 | 1 | 15 | 3 | 9 | 9 | 5 | 10 | 4 |
| Relicenses | 66 | 10 | 9 | 67 | 24 | 25 | 66 | 30 | 25 | 71 |
| 5 MW Exemptions | 2 | 0 | 1 | 1 | 4 | 1 | 4 | 5 | 5 | 4 |
| Preliminary Permits | 11 | 29 | 25 | 15 | 30 | 20 | 25 | 30 | 25 | 30 |
| Rehearings | 10 | 22 | 14 | 18 | 15 | 25 | 8 | 15 | 25 | -2 |
| Declaratory Orders | 1 | 1 | 2 | 0 | 1 | 1 | 0 | 1 | 1 | 0 |
| Remands | 1 | 1 | 0 | 2 | 1 | 2 | 1 | 0 | 0 | 1 |
| Cases Set for Hearing | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 0 |
| Dispute Resolution | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 |

| | FY 2017 Actual | FY 2018 Actual | | | FY 2019 Estimate | | | FY 2020 Estimate | | |
|--|----------------|----------------|----------|----------|------------------|----------|----------|------------------|----------|----------|
| Project Compliance and Administration | P | R | C | P | R | C | P | R | C | P |
| Amendments | 543 | 2,624 | 2,628 | 539 | 2,697 | 2,669 | 567 | 2,802 | 2,742 | 627 |
| Jurisdiction | 5 | 3 | 7 | 1 | 5 | 6 | 0 | 5 | 5 | 0 |
| Federal Lands | 35 | 52 | 83 | 4 | 116 | 105 | 15 | 103 | 110 | 8 |
| Headwater Benefits | 4 | 113 | 115 | 2 | 118 | 117 | 3 | 118 | 117 | 4 |
| Compliance | 120 | 701 | 659 | 162 | 697 | 714 | 145 | 768 | 744 | 169 |
| Surrenders, Transfers | 39 | 38 | 37 | 40 | 43 | 43 | 40 | 52 | 55 | 37 |
| Conduit Exemptions | 1 | 16 | 12 | 5 | 21 | 25 | 1 | 25 | 22 | 4 |
| Environmental Inspections And Assistance | 0 | 195 | 195 | 0 | 210 | 210 | 0 | 216 | 216 | 0 |
| Rehearings | 5 | 2 | 4 | 3 | 2 | 4 | 1 | 2 | 3 | 0 |
| Complaints | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 0 |
| Dispute Resolution | 0 | 0 | 0 | 0 | 2 | 2 | 0 | 1 | 1 | 0 |

| | FY 2017 Actual | FY 2018 Actual | | | FY 2019 Estimate | | | FY 2020 Estimate | | |
|-----------------------------------|----------------|----------------|----------|----------|------------------|----------|----------|------------------|----------|----------|
| Dam Safety and Inspections | P | R | C | P | R | C | P | R | C | P |
| Operational Inspections | 1,315 | 1,431 | 1,303 | 1,443 | 1,450 | 1,400 | 1,493 | 1,450 | 1,400 | 1,543 |
| Preliminary Inspections | 7 | 11 | 11 | 7 | 5 | 5 | 7 | 8 | 10 | 5 |
| Construction Inspections | 107 | 133 | 118 | 122 | 150 | 150 | 122 | 125 | 130 | 117 |
| Exemption Inspections | 229 | 169 | 225 | 173 | 150 | 145 | 178 | 155 | 160 | 173 |
| Special Inspections | 75 | 137 | 84 | 128 | 140 | 150 | 118 | 135 | 140 | 113 |
| Engineering Evaluation & Studies | 5,332 | 9,038 | 8,890 | 5,480 | 9,300 | 9,500 | 5,280 | 9,500 | 9,800 | 4,980 |
| Part 12 Reviews | 271 | 194 | 128 | 337 | 202 | 190 | 349 | 202 | 210 | 341 |
| Dam Safety Reviews | 11 | 48 | 38 | 21 | 45 | 50 | 16 | 30 | 45 | 1 |
| EAP Tests – Functions | 73 | 75 | 58 | 90 | 80 | 85 | 85 | 65 | 70 | 80 |
| EAP Tests – Table Top | 27 | 20 | 10 | 37 | 30 | 35 | 32 | 30 | 35 | 27 |

| | FY 2017 Actual | FY 2018 Actual | | | FY 2019 Estimate | | | FY 2020 Estimate | | |
|---|----------------|----------------|-------|-------|------------------|-------|-----|------------------|-------|-----|
| Rates and Tariffs | P | R | C | P | R | C | P | R | C | P |
| Gas Certificates & Rate Evaluations | 82 | 57 | 66 | 73 | 60 | 60 | 73 | 60 | 60 | 73 |
| Market-Based Rates | 1,323 | 1,995 | 2,030 | 1,288 | 2,500 | 3,000 | 788 | 2,700 | 3,000 | 488 |
| Cogeneration/Small Power Producers (QF) | 452 | 3,120 | 2,584 | 988 | 1,375 | 1,375 | 988 | 1,375 | 1,375 | 988 |
| Dispute Resolution (Electric) | 3 | 12 | 12 | 3 | 15 | 15 | 3 | 15 | 15 | 3 |
| Rehearings (Electric) | 323 | 200 | 250 | 273 | 200 | 250 | 223 | 200 | 250 | 173 |
| Complaints (Electric) | 53 | 50 | 55 | 48 | 50 | 55 | 43 | 50 | 55 | 38 |
| Declaratory Orders (Electric) | 17 | 25 | 30 | 12 | 25 | 30 | 7 | 25 | 30 | 2 |
| Remands (Electric) | 3 | 0 | 1 | 2 | 1 | 1 | 2 | 1 | 1 | 2 |
| Negotiated Rates | 60 | 703 | 708 | 55 | 725 | 725 | 55 | 725 | 725 | 55 |
| Cost-Based Rates | 806 | 3,903 | 3,870 | 839 | 4,400 | 4,500 | 739 | 4,400 | 4,500 | 639 |
| Dispute Resolution (Gas) | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 0 |
| Rehearings (Gas) | 39 | 10 | 15 | 34 | 10 | 15 | 29 | 10 | 15 | 24 |
| Complaints (Gas) | 3 | 1 | 2 | 2 | 1 | 1 | 2 | 1 | 1 | 2 |
| Declaratory Orders (Gas) | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 |
| Remands (Gas) | 2 | 1 | 3 | 0 | 1 | 1 | 0 | 1 | 1 | 0 |
| RTO and ISO Filings | 45 | 246 | 242 | 49 | 250 | 250 | 49 | 250 | 250 | 49 |
| Dispute Resolution (Oil) | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 0 |
| Rehearings (Oil) | 39 | 8 | 25 | 22 | 8 | 20 | 10 | 8 | 10 | 8 |
| Complaints (Oil) | 0 | 6 | 6 | 0 | 2 | 2 | 0 | 2 | 2 | 0 |
| Declaratory Orders (Oil) | 6 | 18 | 18 | 6 | 15 | 17 | 4 | 15 | 17 | 2 |
| Remands (Oil) | 0 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |

| | FY 2017 Actual | FY 2018 Actual | | | FY 2019 Estimate | | | FY 2020 Estimate | | |
|---|----------------|----------------|-----|-----|------------------|-----|-----|------------------|-----|-----|
| Corporate Applications | P | R | C | P | R | C | P | R | C | P |
| Interlocking Positions, Other Corporate Filings | 103 | 907 | 902 | 108 | 800 | 800 | 108 | 800 | 800 | 108 |
| Mergers, Acquisitions & Dispositions | 60 | 174 | 182 | 52 | 235 | 235 | 52 | 235 | 235 | 52 |

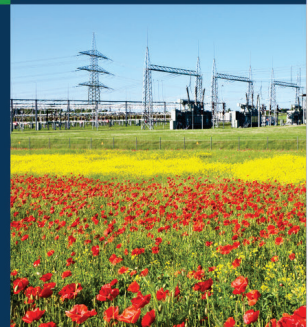
| | FY 2017 Actual | FY 2018 Actual | | | FY 2019 Estimate | | | FY 2020 Estimate | | |
|--|----------------|----------------|----------|----------|------------------|----------|----------|------------------|----------|----------|
| Electric Grid Reliability | P | R | C | P | R | C | P | R | C | P |
| Reliability Standards | 93 | 22 | 34 | 81 | 99 | 90 | 90 | 50 | 90 | 50 |
| Interpretations/Erratas of Reliability Standards | 6 | 0 | 1 | 5 | 1 | 2 | 4 | 2 | 3 | 3 |
| Reliability Filings by ERO/RE | 52 | 12 | 15 | 49 | 6 | 12 | 43 | 6 | 18 | 31 |
| Standards Compliance Audits | 4 | 22 | 21 | 5 | 23 | 23 | 5 | 23 | 23 | 5 |
| Notices of Penalty-Violations | 158 | 1,230 | 1,236 | 152 | 1,250 | 1,300 | 102 | 1,250 | 1,300 | 52 |

| | FY 2017 Actual | FY 2018 Actual | | | FY 2019 Estimate | | | FY 2020 Estimate | | |
|------------------------------|----------------|----------------|----------|----------|------------------|----------|----------|------------------|----------|----------|
| Legal Matters | P | R | C | P | R | C | P | R | C | P |
| Cases Set for Hearing | 75 | 126 | 99 | 102 | 100 | 100 | 102 | 100 | 100 | 102 |
| Settlement Judge Proceedings | 60 | 116 | 90 | 86 | 75 | 75 | 86 | 75 | 75 | 86 |
| Appellate Review | 95 | 110 | 115 | 90 | 110 | 115 | 85 | 110 | 115 | 80 |
| Audits | 25 | 6 | 14 | 17 | 15 | 13 | 19 | 15 | 15 | 19 |
| Accounting | 50 | 463 | 435 | 78 | 460 | 440 | 98 | 470 | 450 | 118 |

Appendix D

| | |
|------------------------|---|
| AC | Actual Cost |
| CAISO | California Independent System Operator Corp. |
| CIP | Critical Infrastructure Protection |
| CPI | Cost Performance Index |
| EIM | Energy Imbalance Market |
| EISA | Energy Independence and Security Act of 2007 |
| EMS | Energy Management System |
| EPAct 2005 | Energy Policy Act of 2005 |
| ERO | Electric Reliability Organization |
| EV | Earned Value |
| FERC or the Commission | Federal Energy Regulatory Commission |
| FEVS | Federal Employee Viewpoint Survey |
| FPA | Federal Power Act |
| FPC | Federal Power Commission |
| FTE | Full-Time Equivalent |
| FY | Fiscal Year |
| GAAP | Generally Accepted Accounting Principles |
| GIS | Geographic Information System |
| GMD | Geomagnetic Disturbance |
| GSA | General Services Administration |
| ICA | Interstate Commerce Act |
| ICCP | Inter-Control Center Communications Protocol |
| ISO | Independent System Operator |
| ISO-NE | Independent System Operator New England, Inc. |
| IT | Information Technology |
| LMP | Locational Marginal Price |
| LNG | Liquefied Natural Gas |
| MISO | Midcontinent Independent Transmission System Operator, Inc. |
| NAESB | North American Energy Standards Board |
| NEPA | National Environmental Policy Act |
| NERC | North American Electric Reliability Corporation |
| NGA | Natural Gas Act of 1938 |

| | |
|-------|--|
| NGPA | Natural Gas Policy Act of 1978 |
| NIST | National Institute of Standards and Technology |
| NOI | Notice of Inquiry |
| NYISO | New York Independent System Operator, Inc. |
| PIW | Public Issuance Workflow |
| PJM | PJM Interconnection, LLC |
| PY | Prior Year |
| RTO | Regional Transmission Organization |
| SCADA | Supervisory Control and Data Acquisition |
| SPP | Southwest Power Pool |
| SS | Swing Space |



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