EXHIBIT
Redacted
#22
DG 17-048

Recommendations Verifications of Liberty Utilities

Public Version
Confidential Materials Shaded Redacted

Presented to:

New Hampshire Public Commission Service Commission

Presented by:

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I. Introduction

The Commission asked Liberty to review progress made in implementing recommendations that our August 2016 report made to improve Customer Service and Planning and Budgeting at Liberty Utilities New Hampshire. We collected updated data, made written requests, and spoke with management about progress in addressing those recommendations. This report provides the progress review requested by the Commission.

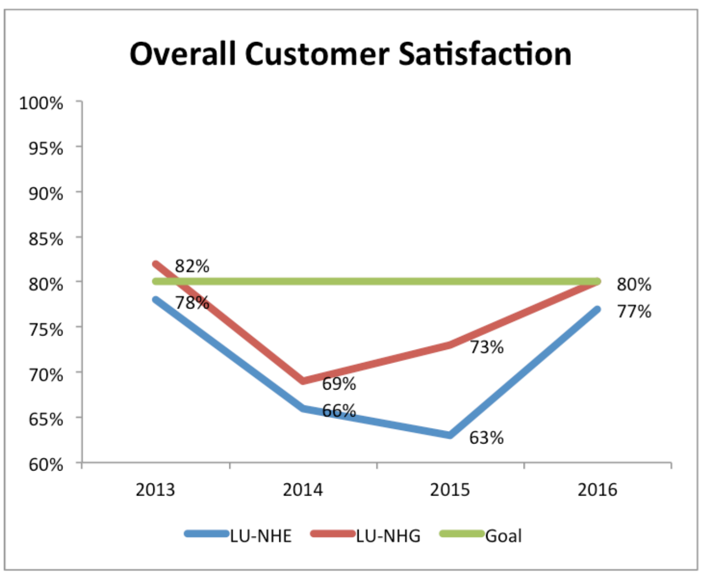
II. Customer Service

A. Summary

Liberty Utilities New Hampshire (LU-NH) successfully implemented 10 of the 11 Customer Service recommendations from Liberty's Audit Report. Management's response to the audit disagreed with one recommendation, which it therefore did not implement. Management implemented most of the other recommendations during 2016, beginning the remainder in 2016, and completing implementation during 2017.

1. Improvements in Service Levels

The steps taken to implement the 10 agreed-to recommendations have improved the level of service provided to customers, as measured by improvement in overall customer satisfaction, a reduction in customer complaints, and improved call handling performance and bill timeliness.

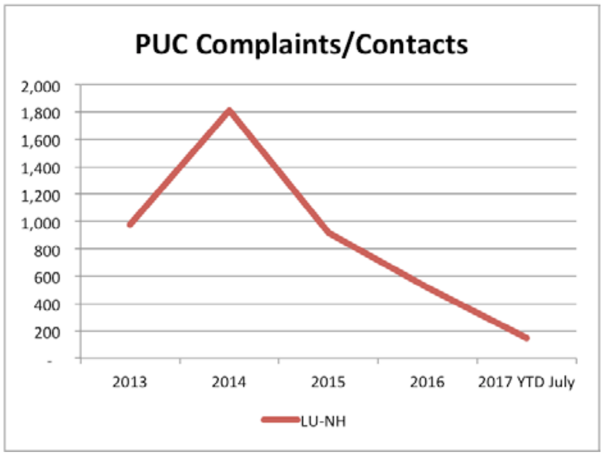


Both LU-NHE and LU-NHG's overall customer satisfaction improved between 2014 and 2016, but LU-NHE's level still falls beneath management's overall goal of 80 percent. Management therefore submitted a customer satisfaction improvement plan to the Commission for 2017. The plan includes actions that should support continuing improvements in customer service and ultimately customer satisfaction:

- Expand the customer service employee knowledgebase

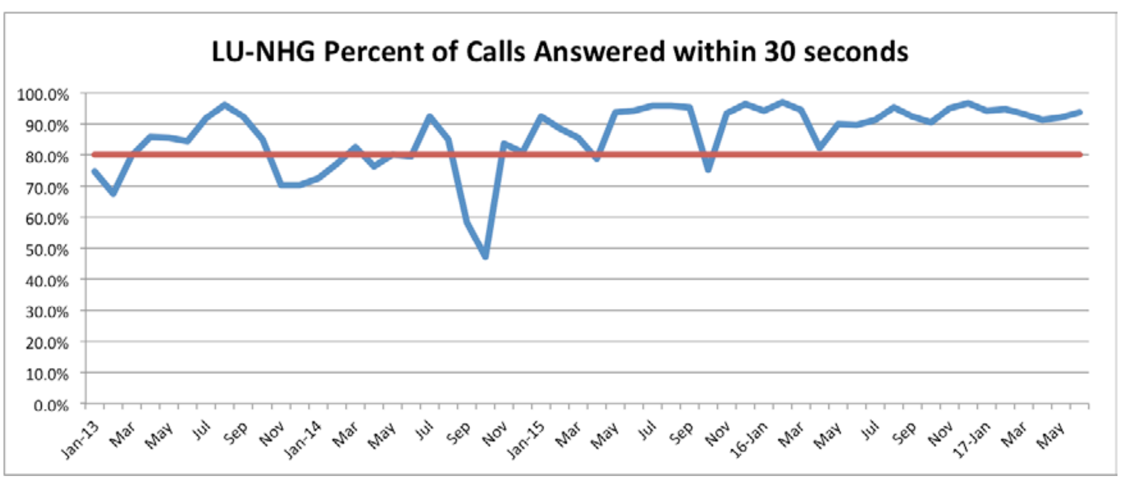
- Reinforce customer focused behaviors through quality monitoring and coaching
- Enhance online job-aids to provide easier references
- Develop and introduce a new-customer welcome packet to improve bill education
- Use outbound messaging to promote payment assistance programs
- Use pre-recorded, up-front messaging during storms and large outages to enable timely updates to callers.

The following chart shows that complaints to the Commission have declined steadily since 2014.

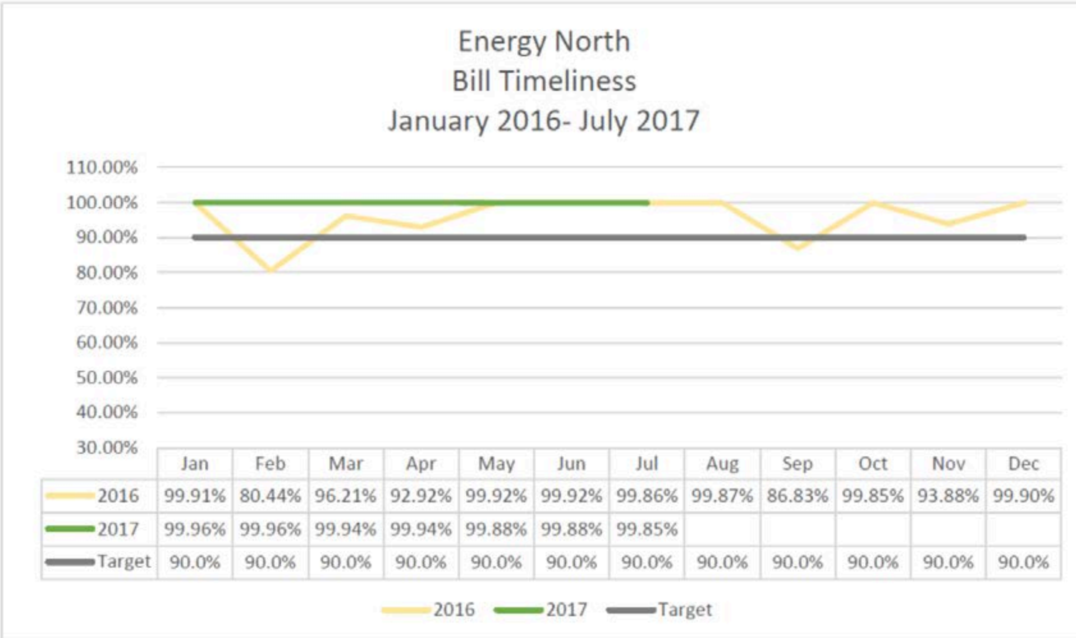


LU-NH's time to respond to customer complaints averaged 1.4 days in 2016, and improved to 1.1 days in 2017 (through July).[1] The current duration also reflects significant improvement over the 2015 levels of nine days at year-start and two days at year-end.

We reviewed call answering statistics and other customer service performance[2] for the last two years. The following chart demonstrates that management has improved and sustained call handling times (measured by percent of calls answered within 30 seconds) since 2014. The percent of LU-NHG calls handled within 30 seconds has exceeded the 80 percent goal through 2016 and the first half of 2017.



The next chart shows similar performance in bill timeliness.



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2016	99.91%	80.44%	96.21%	92.92%	99.92%	99.92%	99.86%	99.87%	86.83%	99.85%	93.88%	99.90%
2017	99.96%	99.96%	99.94%	99.94%	99.88%	99.88%	99.85%					
Target	90.0%	90.0%	90.0%	90.0%	90.0%	90.0%	90.0%	90.0%	90.0%	90.0%	90.0%	90.0%

2. Continuing Areas of Management Focus

The Customer Care team has produced significant positive change following our 2016 audit report. Management's efforts have resulted in a more consistent and higher-performing customer service organization. Management should continue to enhance the customer experience going forward through sustaining continual improvement. Four specific steps remain to verify progress towards implementation of audit recommendations:

- Work with the Commission to re-establish customer service performance metrics, including measures of billing accuracy and timeliness. These metrics should be tracked and reported monthly to establish a baseline of performance well prior to any future upgrades or replacements of the customer billing system. *(Recommendation #6)*
- Develop specific call center storm and emergency response roles and responsibilities and conduct drills. *(Recommendation #7)*
- Develop a detailed call center ramp-up staffing plan, with offsite alternatives, geared to respond to emergencies and storms across a robust range of severity. *(Recommendation #7)*
- Update the business continuity plan following the upcoming drill, to reflect the change in contingency site and to revise the plan for any lessons learned during the drill. *(Recommendation #7)*
- Take firm steps to ensure that remote employees receive the guidance and coaching needed to further develop and refine customer service skills. *(Recommendation #9)*

Management has achieved success in implementing certain other recommendations, but should focus on efforts at continuing improvements in the:

- Customer Care work environment to facilitate higher retention and employee engagement *(Recommendation #4)*
- Customer experience *(Recommendation #5)*
- Self-service options available on the website, most specifically the billing and payment portal *(Recommendation #8).*

The next section discusses specific actions to implement each of the 10 recommendations. It also discusses the need for continued attention to the recommendation (#6, which addresses billing performance metrics) that management did not accept.

B. Recommendation Implementation Verification

1. Physical Security

The first customer service recommendation from our audit report stated:

1. Address physical security concerns in satellite locations. (Conclusion 5)

Management followed a first quarter 2016 security assessment by initiating a series of physical modifications to enhance safety and security at each of its four walk-in office locations. Management completed modifications to address this recommendation at the existing walk-in locations during 2016.[3] In January 2017, management decided to close the Tilton office and to open an office in Concord. Slow walk-in traffic at the Tilton location led management to decide that it could serve more customers by opening an office in Concord, relocating Tilton office assets in the renovation of the Concord office. Management completed Concord office renovation in May 2017.

2. Streamlining Payment Processing

The second customer service recommendation from our audit report stated:

2. Streamline payment processing to reduce delays and properly credit accounts. (Conclusion 20)

Several initiatives completed during 2016 and 2017[4] significantly reduced the time to process customer payments, as the next table shows.

Channel	Prior	Current
Walk-in	3+ business days	Next day
On-demand (web/IVR)	2 business days	Same day
Mailed	1 business day	Same day
Electronic	next day	Next day

Management reduced the volume of unbankable payments by establishing in 2016 relationships with local banks and third-party bill payers and improving customer outreach to update old account numbers in customer banking records. Company personnel now work any unbankable payments received on the day of receipt.

The deployment of check-processing equipment in all walk-in locations in the fourth quarter of 2016 expedited receipt and deposit of walk-in customer payments made by check. Customer checks previously could remain in the safe for up to a week before physical transport to LU-NH's bank. Check processing and scanning now take place on the spot for same-day electronic deposits at each walk-in office location.

Management's August 2017 completion of software changes automated payment file downloading and posting. The new process uploads payments received by third-party processors as a pending payment, immediately upon file receipt from the vendor. Customers can view pending payments on LU-NH's My Account customer portal. Customer service representatives can view them through the Cogsdale customer information system. Prior to this change, the posting of customer payments in Cogsdale did not occur until payment reconciliation with the bank.

These changes have significantly reduced the customer payment processing times, which should ultimately reduce customer inquiries and improve customer satisfaction.

Management is currently investigating the implementation of real-time payment processing for payments received at any of Fiserv's paystations (*e.g.*, Wal-Mart), to further streamline payment processing and account updates.[5]

3. Security of Customer Payment Data

The third customer service recommendation from our audit report stated:

3. Cease phone recordings of credit/debit card payments calls and cease accepting rep-assisted payments or at a minimum, limit payment acceptance to a select group of representatives to minimize risk. (Conclusion 6)

Management's response to our audit report stated that it ceased processing credit/debit card payments through its Contact Center and walk-in locations. It now refers all requests to pay by credit card over the phone or in-person to BillMatrix (a PCIDSS-compliant payment processor) for processing. A small group of Collection department employees continues to collect payments from delinquent-account customers who wish to pay by debit or credit card. These employees use BillMatrix's secure virtual terminal to process the payment.

Management plans to deploy encrypted handheld PCI-compliant credit card processing terminals in each of the four walk-in locations during September or October 2017.[6]

4. Employee Retention

The fourth customer service recommendation from our audit report stated:

4. Continue to improve customer service hiring practices and working environments to facilitate higher retention and employee engagement. (Conclusion 4)

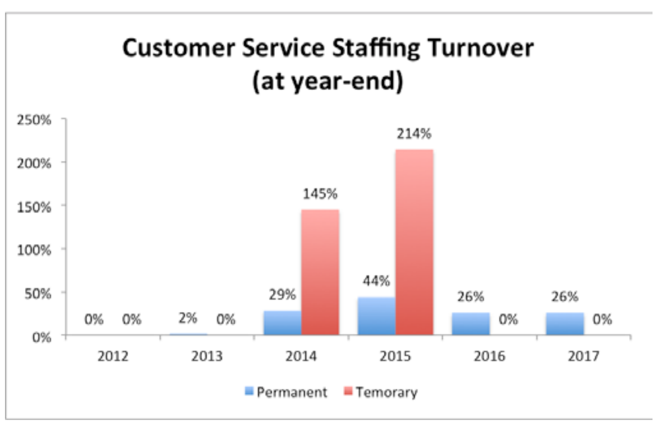
Since January 2016, management has committed to hiring permanent, full-time customer service representatives (as opposed to temporary employees) to handle customer inquiries. Management introduced a new onboarding process in June 2016, to establish check-ins with new hires frequently during the first 100 days of employment, to ensure that new employees receive the orientation and training needed to be successful.

Additionally, a new stepped-pay structure came into existence in January 2017, seeking to encourage higher retention among customer service employees. Management also introduced a new quarterly incentive recognition program to reinforce specific skills and techniques.

Results from the 2016 employee engagement survey[7] show improvement in employee satisfaction, as compared to 2015 results. Overall employee engagement improved from 58 to 63 percent from 2015 to 2016. Within Customer Care, employee engagement scores improved from [redacted] to [redacted] percent from 2015 to 2016. Improvements showed in more than half of the 2016 categories rated by customer care employees. Results for the 2017 annual employee engagement were also reviewed in late October 2017. While overall LU-NH employee engagement continued to improve in 2017, from 63 to 66 percent, Customer Care employee engagement scores dropped, from [redacted] to [redacted] percent.[8]

Management also participated in an employee engagement survey conducted by *New Hampshire Magazine* for an article on "Best places to work in New Hampshire in 2017."[9] LU-NH scored significantly above norm in the three overall metrics, and scored above or equal to norm in 9 of 11 categories. LU-NH did not achieve "best places to work" status, but employee satisfaction results were very positive.

In addition to positive improvements in employee engagement, employee turnover among permanent employees has declined since 2015. Turnover among temporary employees no longer raises concern, because of the shift to permanent full-time hires. The following chart details annual turnover among customer service employees from 2012 through 2017:[10]



Customer Care has realized significant improvement in employee engagement and subsequent decline in staff turnover. However, management should treat our Recommendation #4 as staking out an ongoing challenge, calling for continuous striving to improve the Customer Care work environment to facilitate higher retention and employee engagement.

5. Improving Service Quality

The fifth customer service recommendation from our audit report stated:

5. Improve the quality of service provided to customers. (Conclusion 8)

Management has implemented several changes designed to improve the quality of service provided to customers. Management introduced in the third quarter of 2016 a revised call monitoring evaluation form that emphasizes the importance of assessing and solving customer issues. An enhancement to the form, instituted in March 2017, created an auto-fail policy for customer service representatives, to encourage proper customer account authentication and notation. In April 2017, management dedicated an employee to performing quality monitoring and coaching efforts, to free supervisors to manage overall performance.

Customer Care management now monitors customer service employees more consistently. Employees participate in separate monthly one-on-one coaching sessions with the quality analyst and with a supervisor. The volume of monitoring sessions per employee has increased from two to three per employee from 2016 to 2017.[11] The increase in quality monitoring sessions helps employees improve call handling techniques.

Call monitoring scores comprise a component in employee performance and form part of the company's quarterly rewards recognition program, to highlight the importance of call quality.

Management also implemented monthly call quality calibration sessions in January 2017 to ensure consistent call scoring among supervisors, managers, and the quality analyst.

These enhancements to call quality monitoring and evaluation processes encourage customer service employees to provide effective service to customers. They reinforce the importance of the customer experience. However, management should also approach this recommendation as an ongoing challenge, striving to continuously improve the customer experience.

6. Billing Performance Metrics

The sixth customer service recommendation from our audit report stated:

6. Review and revise billing performance metrics to be more reflective of operational performance and track billing performance consistently between the Balanced Scorecard and the metrics reported to the NHPUC. (Conclusion 16)

Management did not agree with this recommendation, and therefore did not revise its customer service performance metrics. LU-NH discontinued reporting its customer service performance to the Commission in March 2017.

Accurate and timely customer billing comprises a fundamental element of the utility/customer relationship. As management moves to replace the Cogsdale customer information system over the next three to five years, tracking and reporting billing performance will be key in monitoring this relationship.

LU-NH previously reported Billing Accuracy and Billing Exceptions monthly to the Commission. Billing Accuracy seeks to measure the percentage of total bills corrected. The Billing Exceptions metric measures the percentage of billing exceptions resolved prior to billing. Management defines Billing Accuracy as the percentage of off-cycle bills, under the assumption that a bill not produced on-cycle (*i.e.*, remains held), is inaccurate. Historically, Billing Accuracy has been defined by the number of corrected bills (as defined by the number of cancel/rebills). Management defines Billing Exceptions as the percentage of bills on hold. Billing Exceptions provide a measure of the completeness and quality of billing data, before a bill's issuance. In LU-NH's case, the bill is issued and must be held until the issue is resolved.

LU-NH should work with the Commission to re-establish customer service performance metrics, including measures of billing accuracy and timeliness. Management should track these metrics, and report results monthly, to establish a baseline of performance well prior to any future upgrades or replacements of the customer billing system. Management should also review customer service performance metrics definitions, and revise them as necessary, following the introduction of any new customer billing system.

7. Business Continuity and Storm Plans

The seventh customer service recommendation from our audit report stated:

7. Update Contact Center business continuity plans and create a Call Center-specific storm plan to mitigate risk. (Conclusion 17 and 18)

Management updated the Customer Care business continuity plan in September 2016.[12] The new plan identifies the Concord Training facility as the contingency site in the event of a loss of the Londonderry Office. Management's schedule calls for completion of the Concord Training facility in the third quarter of 2017. Plans call for an ensuing drill to test emergency plans and to familiarize employees and management with business continuity processes.[13]

Management should update its business continuity plan following the drill, to reflect this change in contingency site and to revise the plan for any lessons learned during the drill.

Management issued a Contact Center Emergency and Storm Restoration Manual in December 2016.[14] Management developed an Interstate Contact Center Emergency Support Policy in the second quarter of 2017. This policy addresses potential needs for additional support from another LU region.[15] Customer Service Representatives from Massachusetts and California have been trained in the Outage Management System, to provide a source of additional storm contingency support. Management plans to train additional Customer Service Representatives from Georgia and Midstates by the end of 2017.

An annual LU-wide storm drill occurs prior to the fall (in September for 2017). Management also provides annual refresher training to employees to prepare them for the upcoming storm season. This training includes employees from other regions (*e.g.*, Georgia and Midstates) who may provide support for storm restoration in New Hampshire. Management plans to provide this refresher training in October 2017.[16]

The contact center storm plan creates a good foundation from which the LU customer service management team can build out specific storm management details. LU should also develop call center staffing plans that include sufficient detail to ensure adequate contact center coverage for all storm emergency levels, in coordination and support of actions and declarations from the emergency operations center.

8. Website

The eighth customer service recommendation from our audit report stated:

8. Improve web-based billing and payment self-services. (Conclusion 13)

Management redesigned the public website in April 2016, to improve ease of use and to provide more information to customers using the My Account customer billing and payment portal.[17] The implementation of automated payment file updates in August 2017 has allowed customers to view pending payments on their account within a day of receipt by payment vendors.

One in four LU-NHG customers reported visiting the website in 2016, primarily to pay a bill or obtain information about their bill. Customer satisfaction with LU-NHG's website has improved steadily since 2014, from 42 percent satisfaction (very/somewhat satisfied) to 56 percent in 2016.[18]

Management has redesigned the customer payment portal and company website in 2016, and plans further enhancement during 2017. These steps reflect positive change, but this recommendation, like several others cited in this report, should be viewed as presenting an ongoing challenge, as management strives continuously to improve the self-service options available on the website, most specifically the billing and payment portal.

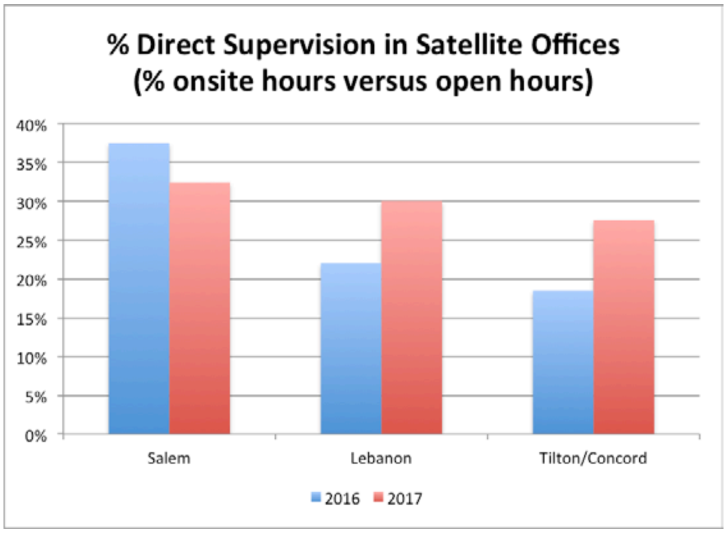
9. Satellite Office Supervision

The ninth customer service recommendation from our audit report stated:

9. Increase the level of supervisory coverage in the satellite offices. (Conclusion 19)

The customer service management team revised supervisory schedules to increase the amount of on-site time by supervisors in each satellite office location. Each supervisor rotates through a four-day travel schedule including visits to each office each week. Management also schedules weekly calls with the lead customer service representative at each office, to review any issues or needs. Management has also taken steps to improve consistency through enhancements to the supervisory escalation process. Supervisors assume responsibility for a specific complaint or escalation through its resolution, serving as a single point of contact to improve continuity.

During 2016, LU-NH averaged supervisor visitation of 26 percent of the total hours that satellite locations remain open to the public. This level increased to 30 percent in 2016. The following chart details the changes in supervisory on-site time from 2016 to 2017, by satellite office location.[19]



Supervisory on-site time has increased notably in the Lebanon and Tilton (now Concord) satellite offices, while coverage has decreased by six percent in the Salem office. Rotating coverage of one supervisor for three remote locations will continue to present a challenge for supervisors and employees, especially during winter months, when travel can become difficult. The Customer Care management team has increased the amount of supervisory face-time in the offices, but, as compared to 2015, the satellite offices are operating without supervisors on-site for 65 to 75 percent of the time.

Management should take firm steps to ensure that remote employees receive the guidance and coaching needed to further develop and refine customer service skills.

10. Meter Reading Data Management

The tenth customer service recommendation from our audit report stated:

10. Secure a system to manage meter reading data. (Conclusion 10)

Management plans to replace several key operational systems over the next three to five years, including the customer information system. This effort includes an examination of options for addressing the need to store and manage meter reading data.

Management will execute this large-scale systems replacement effort in phases; LU will be replacing the financial systems, customer system, and asset management systems. The initiative gained the necessary internal approvals in the second quarter of 2017. Progress to date includes establishment of a business council and several functional teams have been established.

11. Revenue Assurance

The eleventh customer service recommendation from our audit report stated:

11. Dedicate appropriate resources to create a revenue assurance group. (Conclusion 11)

Management staffed an analyst position dedicated to revenue assurance in September 2016. In October 2016, management established a page on the corporate website dedicated to theft of service, to encourage customers to report suspicious activities and suspected theft of service.

The introduction of several processes seeks to screen accounts to identify potential theft and unaccounted-for use of electric and gas services, including: elevated pressure checks, gas multiplier checks, non-registering meters, and other sudden changes in usage. The revenue assurance analyst has developed monthly performance reporting to track activities and revenue recovered through this process. Since January 2017, Revenue assurance has back-billed 399 accounts with non-registering meters for more than $300,000 in usage.

Management has also taken steps to become a member of IURPA (International Utilities Revenue Protection Association), to take advantage of association networking and best practices. LU also joined the Northeast Utility Revenue Protection Association, enabling participation in revenue-assurance related networking within the Northeast region.[20]

III.Planning and Budgeting

A. Sample Project Review

In reviewing progress in implementing our recommendations addressing Planning and Budgeting, we examined a sample of four capital projects spanning the period from 2014 through the present: the 2014 Training Center project, the 2015/2016 iNATGAS CNG Compressor Project, the 2016 IT expenditures project, and the Keene Conversion projects.

1. Training Center

Management prepared a capital project expenditure application for the Training Center, apparently including it in the 2014 capital budget, which the Board of Directors approved in December 2013. Management-prepared business cases for the Training Center bear dates of January 24 and May 1, 2014. Both estimates projected 2014 project capital expenditures of $1.028 million, with the latter business case adding $25,000 in 2015. The final project cost as of December 31, 2016, was $3,832,674.[21]

Documentation from the time of original authorization described the project as follows: [22]

> *The project will consist of ground up construct of the Liberty Utilities Training Center building to be located at 10 Broken Bridge Road in Concord, New Hampshire. There will be site work for a foundation, septic system and asphalt parking area. The masonry building will consist of office space, first and second floor classroom space, high bay lab/training area with a mezzanine, lunch room, standard and ADA compliant restrooms. A well for potable water and fire suppression will also be installed.*

Management was using out-of-state sites for mandated annual employee training. These sites included National Grid's training facility in Millbury Massachusetts. Planning documents for the new Training Center estimated the resulting outside costs at $400,000 per year, giving the new center an undiscounted payback period of less than three years, assuming the estimated $1.028 million of capital costs. Increased Training Center capital costs to over $3.8 million, would extend this calculated period to almost 10 years. Soundly developed businesses cases prepared for senior management and board approval would be expected to include varying levels of "avoided costs," address other viable alternatives to the Training Center, and provide sensitivity analysis of capital costs.

However, documentation described the new center's cost estimate only generally, stating that, "Cost estimates will be calculated on an individual job basis." A response to a data request in our current, follow-up work stated that the original estimate did not have the benefit of pricing from a contractor, and did not include any "site work."[23] On this estimate basis, management proposed $1.028 million, which the Board of Directors approved and for which funding commitments followed. The next table breaks down the capital expenditure:

Item	Cost
Design/Engineering	$70,000
Material	$351,240
External Contractor Costs	$439,050
Internal Costs	$15,000
Other Costs (contingency)	$87,810
Soft Costs	$65,000
Project Total Cost	$1,028,100

The project manager prepared in or around August 2014 an "Over Expenditure Spending Request Form" in support of a request for an additional $1.3 million for the project. This request came before the signing of a construction services contract with the project contractor. The request brought total approved costs to $2.347 million. We have been advised that senior management approved this cost increase, but management has found no documentation of that approval.[24]

A major project change came with relocation of the building to accommodate additional parking, circulation drives, and a leak field for training purposes. Additionally, Liberty Utilities learned about site soil conditions and ground water elevations, a required over-excavation of underlying soils and the use of a de-watering process during footing and foundation work. The site's high water table required "considerable additional site drainage and an increase in the size of the storm water pond in order to create bearing capacity for the structures and the parking lot with under drains to provide waterproofing and stability ($422,000 additional cost)."[25]

Subcontractor bids far exceeded expectations, adding another $600,000 to project capital costs. Relocation of the facility within the site and subcontractor costs drove further increases in related costs: (a) $150,000 in architect, civil engineering, and construction management, and (b) $175,000 more in contingency (applied at a rate of 15 percent). [26]

Execution of a $2.042 million contract with the primary contractor (North Branch) came in September 2014, followed by a late-October Purchase Order in a corresponding amount. The dollar amounts of these two documents fell $300,000 lower that the increase to $2.347 million spending approved two months earlier. Nevertheless, the contract provides a revised baseline from which to measure project increases that come thereafter. The next table summarizes the construction-services contract details.

Liberty Utilities Training Center - Schedule of Values	
9/26/2014	
Item Description	Value
General Conditions	$220,970
Insurance	$7,942
Performance & Payment Bond	$18,376
Sitework	$327,603
Fencing	$8,478
Landscaping	$12,900
Concrete Foundations	$73,225
Masonry	$145,313
Steel	$113,500
Rough Carpentry	$26,994
Finish Carpentry	$112
Thermal / Moisture	$32,127
Roofing	$51,500
Metal Wall Panels	$83,860
Doors/Frames/Hardware / Windows	$62,996
Light Gauge Metal Framing and GWB	$45,949
Resilient Flooring	$11,441
ACT Ceilings	$8,844
Painting	$12,250
Specialties	$21,266
Training Equipment	$4,360
Window Treatments / Casework	$5,620
LU/LA	$44,784
Mechanical	$260,165
Electrical	$116,200
Hoist Beam and Trollies ALLOWANCE	$7,500
Building Sign ALLOWANCE	$2,500
Winter Conditions ALLOWANCE	$75,000
CM's Contingency	$88,773
CM's Fee	$151,244
Total	$2,041,792

A management notation observed that the $75,000 "winter conditions allowance became necessary due to the inability to begin the project as originally anticipated, in July 2014".[27]

From this revised baseline, the first major change order request to the purchase order added about $238,000, bringing project costs to $2.279 million. This increase included a change in scope for $68,000 in additional electrical and telephone work, and about $170,000 for added weekend and double-shifting work to ensure training-center readiness by March 31, 2015.[28]

A second, June 12, 2015 change order added another $490,000 to project costs, bringing them to a total of $2.770 million. The increase accommodated a City of Concord requirement to install a water line and hydrant, to make road improvements, and to add builders-risk insurance. Assigning some of these costs to the also-affected CNG facility produced a Training Center cost increase of about $202,000.[29]

Another $188,000 in increased Training Center project costs came through more than 20 additional "Change Proposals." These additional sources of cost increase included costs listed as "allowances" in the North Branch contract, but additional charges above the contract allowance came:

- Winter Conditions Allowance: $46,567
- Building Sign/Canopy Allowance: $15,821.

Other Change Proposals produced additional cost increases:

- Road Work Unsuitable Materials: $26,279
- Excavation Removal Unsuitable Materials: $14,145
- Gas Detection System: $15,438
- Broken Bridge Road Underdrain: $15,073
- Winter Road Paving: $11,180
- Added Data and Power: $10,549
- Water Services: $10, 837.

A large portion (about $1.22 million) of the increase in Training Center costs has come from cost sources omitted from the "original project estimate", or the North Branch contract and related Purchase Orders. Management has identified about $407,000 specifically not included in the North Branch original estimate, and an additional $812,000 charged to the project after October 15, 2015.[30]

Not Included in Original Estimate	
CMK Architectural Fees	$152,600
Northpoint Civil Engineering Fees	$102,561
Securadyne Security	$ 58,898
Concord City Inspection Fee	$ 33,300
"Furniture, Fixtures and Equipment"	$ 23,810
Concord City Traffic Fee	$ 19,015
Miller Testing Fees	$ 14,000
Concord City Water Fee	$ 2,595
Total	$406,779
Additional Items Not Included in Original Estimate	
"Burdens"	$287,072
RH White Construction Contractor	$238,325

GZA Environmental	$ 86,155
Company Labor	$ 47,149
AFUDC	$ 41,690
Materials/Supplies	$ 23,686
Elec Meter Training Board	$ 15,238
Tech Cabling	$ 14,475
Other (16 Items)	$ 58,400
Total	$812,190

2. iNATGAS CNG Project

iNATGAS CNG project approval came in April 2014 as an "emergent project;" *i.e.*, not included in the plans that formed the basis for the Board of Director's capital budget approvals in December 2013. The business case approved in April 2014 included capital spending of $2.25 million.[31] Project completion in late 2016 resulted in costs that more than doubled - - to $4.9 million.

Management prepared an April 8, 2014 business case and capital project expenditure application for the iNATGAS CNG project. Key components included capital expenditure estimated at $2.250 million, a start date of July 15, 2014, and a completion date of December 15, 2014. Management described the project at the time of the business case as follows:

> *This capital project is for construction of a compressed natural gas (CNG) facility on land currently owned by EnergyNorth on Broken Bridge Road in Concord, New Hampshire. Liberty Utilities Corp. will construct, own and operate a compressor station at this location. iNATGAS and AVSG LP will construct, own and operate a CNG fueling and filling terminal on adjoining land released from EnergyNorth. The Liberty compressor station will compress and deliver CNG to the iNATGAS/AVSG facility. iNATGAS/ AVSG have signed a 15-year contract with take-or-pay minimums to receive the compressed natural gas produced by the compressor station.*

The business case cited incremental revenue growth from the distribution receipts at the iNATGAS/AVSG meter as the project's justification. Three five-year financial models analyzed the project using projected revenues generated from project investment. The analysis concluded that, at the negotiated take-or-pay minimums, LU-NH would recover its investment in 5.5 years. Meeting the baseline projections would produce investment recovery in four years; achieving accelerated projections would do so in three years and four months. The financial analysis for investment paybacks assumed a capital investment of $2.245 million.

Management described the project cost estimate as: "Externally generated from quotes." Management told us that the LU-NH President and executives at Oakville approved the capital project expenditure application, but could not find documents reflecting Oakville approval.[32] Local approvals were provided in the business case. With about $450,000 spent in 2014, management deferred project completion into 2015.[33] It was later delayed further. The Board-approved 2015 capital budget added $500,000 to project costs, with another $160,000 coming in the 2016 capital budget, producing total approved capital spending of $2.910 million as of that time.

A subsequent, March 2016 “Over Expenditure Spending Request Form” prepared by the project manager requested an additional $1.249 million. Senior executive approval of this large increase in May 2016 brought the project’s total to $4.159 million. The justification for the March 2016 increase request stated:

> *In the fourth quarter of 2015, the company took initiatives to reduce capital spend and deferred the remaining INAT Gas work to 2016 and therefore the remaining charges were deferred from the fourth quarter of 2015 to quarters two and three of 2016. The 2016 capital budget request ($160,000) was set prior to the deferral decision and is recorded in the below chart. The purpose of this application is to request the additional 2016 funds required to complete the project and meet the terms of our contract with INAT Gas. The additional funds required to complete this project will be from re-allocation of the 2016 capital budget project line item amounts.*

Justification for the March 2016 cost increase included:

- Original scope expansion: $610,000
- Engineering: $150,000 over budget
- Asphalt, clearing, piping, fencing and compressor building: $550,000 over budget.

The application also noted that management had to date spent 70 percent of the required amount on the project. Revised pay-back estimates reflecting the additional spending projected investment recovery over eight years versus the 5.5 years indicated in the original approved estimate in 2014. These revisions also reduced the project’s internal rate of return from 13.58 percent to 7.02 percent at take-or-pay minimums.[34]

Management issued a Project Close-Out Report, but it addressed only 2016 capital spending. These reports do not analyze the full period of project life and expenditure. This report showed actual 2016 project costs of $1.693 million - - $284,000 over the budgeted amount. Management cited the failure to include AFUDC in the estimate as the source of the increase.[35]

Management has recorded final iNATGAS CNG project costs of $4,971,030.[36] Management provided documented approvals for $4.159 million of this amount, but has not located documents for the remaining $812,000.

3. 2016 IT Software

We reviewed IT projects charged to New Hampshire for the 2016 budget year. The IT Software capital budget line item operated as an annual “blanket project” to cover the costs of IT software, equipment, and infrastructure. The approved New Hampshire capital line item for this work for 2016 amounted to $230,000, but actual capital spending of $1.89 million exceeded budget by eight times.

Management provided the EnergyNorth 2016 business case and capital project expenditure application addressing the purchase of computers, software, equipment, and infrastructure "… to meet new residential and commercial service(s); and implement LU business strategy." Cost estimates were reportedly to be "calculated on an individual job basis," and were included in the blanket project request of $230,000 in the approved capital budget.[37]

A number of Oakville projects underwent business-case review by and received approval at Oakville headquarters, outside the New Hampshire capital budget process. Oakville management "layered [them] on top of the New Hampshire budget," producing a large state-level budget overrun. This layering of Oakville IT project capital costs on top of the approved New Hampshire budgets caused a $1.66 million EnergyNorth overrun in 2016 on the capital budget line item involved. Management listed the following Oakville projects charged to New Hampshire:[38]

- Backup System Growth – Commvault Systems (2015)
- Cogsdale Modification Crystal Report Template (2015)
- Gas Bill Template (2015)
- GP Wennsoft 2015 Upgrade (2015)
- Vulscan Patching (2015)
- Liberty Website Development (2015)
- Cogsdale B36 Upgrade (2016)
- Vulnerability Assessment and Patch Management Solution (2016)
- Retail Choice Database Migration (2016)
- Verotrack Enhancement (2016).

A Project Close-out Report identified 2016 IT software budgeting problems. For example, that report rated "Scope" and "Cost" performance for this project as "1", on a scale of 1-to-5. Under Project Lessons Learned was the following problem statement: "Unbudgeted upgrades to FiServ, Verotrack, Retail Choice, and other smaller programs." A Problem Description noted: "Necessary upgrades within program, but not within the budgeted amount", and recommended that, "Given the nature and need for the applications upgrades, this blanket project should have been revised earlier in the year."[39]

Management has recognized the need to address the layering, changing the capital budgeting process. As part of the 2017 budget preparation process, the New Hampshire portion of the Oakville IT capital budget was incorporated into the New Hampshire level budget.[40] This correction of the capital budgeting process should cause the large variances experienced with the 2016 IT budget to be avoided in 2017 and in future years.

4. Keene Propane

The Keene propane-air distribution system distributes propane air gas at 740 BTUs to 1,232 customers. It operates as a completely different system from the natural gas system, which uses 1,000 BTUs in all other LU-NH service areas. Several investigations have examined converting Keene to conventional natural gas service.

During the winter of 2015-2016, two electrical supply issues shut down the air blowers at the Keene plant, resulting in high BTU gas being distributed. Management says that it requires the blower system only when the Keene high-pressure piping system is active. High BTU distribution causes high flame height, incomplete combustion, and carbon monoxide creation at customer appliances. Maintaining Keene gas distribution safety and mitigating potential public safety issues necessitate a permanent solution.

Management prepared a June 2016 business case for the conversion of the Keene system. This project originally gained approval in June 2016 as an “emergent project” not included in the board-approved budget. The company identified several options:

- Convert to natural gas
- Keep the plant in its current configuration
- Discontinue gas service in Keene.

Management eliminated the second and third options as incompatible with company strategies, and recommended spending for 2016 and 2017 of $450,000 for the conversion. It planned to spend $250,000 in the third and fourth quarters of 2016, with the remainder to be spent in 2017.[41] Management has reported that Commission Staff requested that the conversion be delayed into 2017. The Project Close-out Reports included actual project costs of about $155,000 for 2016.[42]

Management provided a new Keene Propane business case for 2017. The business case included a new estimate for 2017 for both the gas main installation on Production Avenue in Keene and the high-pressure conversion from propane/air to CNG.[43]

The Keene Propane project for 2017 fell among the projects we examined, and was intended to provide an example of post-audit-report changes in LU-NH capital planning and estimating; useful particularly in examining management’s actions with respect to our Planning and Budgeting Recommendation 2. Our review of the business case and capital project expenditure application for Keene Propane for 2017 did not indicate major improvements. First, the business case and application are dated January 1, 2017, and gained approval in mid-January 2017. The business case also notes that the project was not included in the annual capital budget approved by the Board of Directors in late 2016. The business case financial assessment notes that “This blanket project is based on historical spending trends and anticipated a year-ahead activity in this investment category.” The Cost Estimate category notes “Cost estimates will be calculated on an individual job basis.”[44]

Rate Case Information

As part of the EnergyNorth gas distribution rate case, Staff requested that LU-NH provide a business plan that included a detailed description of plans and costs to convert Keene customers from propane air service to natural gas service and expected sales and revenue growth. Staff also requested that LU-NH provide a comprehensive business plan for the Keene Division that includes a Discounted Cash Flow analysis based on stand-alone operating, supply and capital costs and revenue estimates.

LU-NH provided the following response to the Staff request:

> *Phase 1 will include customers along Production Ave and the Home Depot in The Marketplace.* [redacted]*, on Production Ave., has already committed to taking service and is expected to be served from the temporary CNG facility to be constructed in summer of 2017. Adding this customer would put the temporary facility at its maximum capacity. The remaining customers would be expected to be converted in summer of 2018.*
>
> *Phase 2 will be an extension of high pressure main from the existing "high line" to serve* [redacted]*. This Phase also includes an extension on Winchester Street south of Route 101. Phase 2 is expected to commence in spring of 2019.*
>
> *Phase 3 would continue across Main Street and down Marlboro Street as well as Optical Avenue to serve customers such as* [redacted], [redacted], *and* [redacted]*. This phase is expected to begin in spring of 2020.*
>
> *Phase 4 would begin an extension north along Route 9 with* [redacted] *as a possible anchor customer. This phase is also expected to begin in spring of 2020.*
>
> *Phase 5 extends further north and is expected to begin in spring of 2021.*
>
> *The existing Keene customers will be converted over multiple years by geography and strategic valves to isolate these customers from the propane air system. It is expected to take between four and seven years to accomplish the conversion. Current estimates are that conversion costs will be approximately $850 per customer, which equates to $1,062,500 (based on 1250 customers). These costs will be borne by all (existing and new) Keene Division customers over a number of years through the Keene Division COG.*

Management also prepared two discounted cash flow analyses that accompanied the descriptions above. One analysis examined revenue requirements over 20 years for a single capital investment of $1,069,429. The second DCF analysis provided a 10-year examination of revenue requirements for a capital investment of $4.355 million over a five-year period.[45]

B. Recommendation Implementation Verification

1. Business Cases and Program Capital Expenditure Applications

a. Summary

The second planning and budgeting recommendation from our audit report stated:

> ***2. Redesign and rigorously apply the capital budgeting process so as to ensure the provision of full project business cases and program capital expenditure applications by September for the following budget year.***

All analysis, business cases, capital expenditure applications and detailed cost estimates should be completed, packaged and presented to the New Hampshire state president for review and approval before the middle of September. The budget process should result in capital packages that are finalized and approved by (sequentially) the state president, Oakville finance and by the parent board of directors in December, for the following budget year.

Liberty's 2016 audit report identified (for example, see Planning and Budgeting Conclusion #7) significant planning and timing impediments to producing timely and effective capital expenditure analysis, detailed cost estimates, and business case packages for review and approval at executive levels. For the 2014, 2015, and 2016 capital budgets, management did not prepare information of these types until several months following Board of Director approval, and with the applicable budget year already well underway. Therefore, the state president, Oakville finance leadership, and the parent board approved capital budgets for 80-plus line items without prior, apparent:

- Sufficiently-detailed cost estimates
- Sufficient analysis
- Supported through business case and capital expenditure applications
- Structured consideration of alternatives.

Conclusion #8 observed that Liberty Utilities did not provide the types of analysis for growth, discretionary and regulatory supported projects as prescribed by management's own capital expenditure policy. Management did not prepare the types of analysis required for each of the budget years 2014 to 2016.

b. Follow-Up Conclusions

1. LU-NH has not demonstrated that improvements to its capital budgeting processes satisfy audit Planning and Budgeting Recommendation 2, which addressed planning and estimating processes and content.

Recommendation 2 identified the need for management to revise its capital budgeting processes to ensure that capital project planning, analysis, and sufficiently detailed estimating take place before presentation of projects and programs for senior management and board review and approval. Planning and Budgeting Conclusion #7 of our 2016 report explained that senior management and the board of directors were reviewing and approving capital expenditures without sufficient prior analysis, business case preparation, and reasonably detailed cost estimates. Each of these three planning gaps promote greater-than-needed variances in capital budget spending, or result in capital spending that does not align with commitments supporting it or with board-of-director approval. An effective and complete capital expenditure budgeting process forms a central element in effectively managing and operating capital-intensive utility companies. The gaps identified in our report found comprised a significant management gap.

We recently asked management to identify the changes and improvements made to address our audit planning and budgeting recommendations, including the specific improvements made, the dates of changes making such improvements, documents evidencing the improvements, and impacts of the improvements on four capital projects we specifically identified as test cases. Management responded to this request as follows:[46]

> *Effective for the 2016 budget process which commenced in September 2015, Liberty Utilities prepares preliminary business cases in conjunction with the annual budget submission, followed by formal business cases once the budget is finalized. For recurring work orders (termed "blanket projects"), there is minimal year-to-year variability in the number of projects in the amount of spending. Thus, business cases are similar from one year to the next for blanket projects. Upon completion, Project Closeout Reports are completed. Examples of these supporting documents can be found in the attachments provided in response to PB–2 (Training Center), PB-5, (CNG facility), and PB-6 (IT Software and Keene Propane).*

We asked management to provide examples of the "preliminary business cases" prepared by September for budget approval for the following, 2017 year. Management provided three examples of preliminary business cases included in the 2017 capital budget:

- Meter Replacement Program ($100,000)
- Pre-Code Steel Pipe Protection Program ($175,000)
- Aldyl-A Replacement Program ($100,000).

The Company also provided the preparation dates for these three business cases, all of which pre-dated the late September 2016 start of consideration of the next year's plan by senior management. The financial assessments for each project included the following quoted rationale: "historical spending trends and anticipated year-ahead activity in this investment category." The discussion of cost estimates for each noted that, "Cost estimates will be calculated on an individual job basis.". Management can generally estimate routine, blanket projects using historical averages. Management took that approach here, but documentation for these three "blanket" projects does not demonstrate that management now performs reasonably detailed cost estimates on its major capital projects.[47]

We were looking for specific elements that we consider central to determining the sufficiency of management's planning and budgeting improvements. Specifically, we wanted to verify the existence of sufficient project analysis, and particularly the performance of reasonably-detailed cost estimating for capital expenditure projects prior to the budget approval process. The lack of sufficient cost estimating for projects included in the Board-approved capital budget reflected a major shortfall in management's processes associated with 2014 and 2015 capital budget formation. In particular, the Training Center and iNATGAS CNG projects suffered from poor cost estimating at the time of the approved capital budgets in these years, as we detailed in this report. Management appears to have improved the timing of preparation for some of its business cases, but we found the Keene Propane project (See Conclusion #4 below) an exception. Importantly, the information management provided does not support a determination that management has improved cost estimates for projects included in its board-approved capital budgets.

2. **The timing of any improvements to management's "pre-approval" capital budgeting processes were not effective prior to the 2017 budget year; therefore, they would not have applied to the Training Center and iNATGAS CNG projects.**

We completed our audit report in August 2016, making any responses to our recommendations applicable at the earliest to 2017 budgeting. Management initiated two of the reviewed capital projects (Training Center and iNATGAS CNG projects) in 2014, completing them by the end of 2016. We recently reviewed these two projects in following up on Recommendation #2. Budgeting for these two projects occurred in the context of the capital budgeting issues identified in our audit report. They exemplified the 2014 through 2016 capital budget issues addressed in our audit report. Therefore, any improvements in capital expenditure planning made in response to the audit report have come well after the planning and budgeting for these two projects. Neither of these projects could have been affected by any improvements that management made in its capital expenditure planning processes.

3. LU-NH has incorporated changes to its 2017 capital budgeting processes to avoid the large 2016 IT Software variances in the future.

We also recently reviewed IT projects charged to New Hampshire for the 2016 budget year. The IT Software capital budget line item represents an annual “blanket project” for the costs of IT software, equipment, and infrastructure. Management budgeted only $230,000 for this line item for 2016, but recorded far greater actual capital spending of $1.89 million. Management provided us with the EnergyNorth 2016 business case for the purchase of computers, software, equipment, and infrastructure; it totaled the $230,000 reflected in the budget.[48] Management also provided a number of other business cases addressing 2016 IT expenditures apparently approved in Oakville, outside of the New Hampshire capital budget processes. These projects included a dozen IT projects, which included upgrades of the Cogsdale system, website development, and gas bill template development. Oakville IT eventually charged costs of these projects to EnergyNorth.[49]

Authorizations for these projects varied based on: (a) the level of the project costs, and (b) whether the project initiated in New Hampshire or centrally. Management has stated that it layered IT capital costs from Oakville headquarters on top of approved New Hampshire budgets. Layering produced an Energy North capital budget overage of $1.66 million in 2016. Management has recognized the budget-overrun issue associated with layering, changing the capital budgeting process to rectify this situation. Budget preparation for 2017 incorporated the New Hampshire portion of the Oakville IT capital budget into the New Hampshire level budget.[50] This correction of the capital budgeting process should eliminate layering as a cause of the large variances experienced in the 2016 IT budget.

4. Keene Propane project documentation does not demonstrate improvement in planning and estimating for the 2017 capital budget cycle.

Management provided the Keene Propane business case for 2017. Management initially authorized Keene Propane in June 2016 as an “emergent project,” meaning that the Board-approved budget for that year did not initially include it. Management has stated that the New Hampshire Commission Staff requested a delay in the conversion project into 2017. Management then established a new project number and prepared a new business case for 2017, addressing both planned gas-main installation on Production Avenue in Keene and the high-pressure conversion from propane/air to CNG.[51]

We expected that 2017 Keene Propane project planning and budgeting would provide an opportunity to examine improvements in managements capital planning and estimating to respond to our Recommendation #2. However, reviewing the business case and capital project expenditure application for Keene Propane for 2017 did not evidence substantial process improvements. First, the business case and application bear the date of January 1, 2017, with approval noted in mid-January 2017. The business case also notes that the annual capital budget approved by the Board of Directors for 2017 did not include the project. Financial notes for the business case provided state that "This blanket project is based on historical spending trends and anticipated a year-ahead activity in this investment category." The Cost Estimate category notes that, "Cost estimates will be calculated on an individual job basis."[52]

We therefore concluded that Keene Propane 2017 documents do not evidence improvements in the timing of the project analysis, in the supporting business case or in the CAPEX application, which occurred well after the start of the capital budget process in late September. The documents also do not evidence more detailed cost estimates for consideration by senior management or the board as part of the capital budget process. Business cases should include long-term revenue requirements analysis of the project's costs and benefits, which should be prepared for senior management and board of director's review on larger discretionary projects. In the case of Keene, business cases were not prepared for consideration in the 2017 capital budget.

2. Capital Expenditure Variances

a. Summary

The third planning and budgeting recommendation from our audit report stated:

> ***3. Manage the capital budgets to annual variance tolerances of plus or minus 5 percent for total expenditures and plus or minus 20 percent for individual projects and line items.***
>
> *Liberty Utilities New Hampshire should establish and use variance tolerances for capital expenditure budget performance that are specific and provide measurements for performance levels. For instance, "good performance" tolerances should be 5 percent or less, moderate be 5 to 10 percent, and unacceptable for 10 percent or more of the total budget. Tolerances should also be established for individual projects and line items, to emphasize and ensure that capital budget management produces the spending on the priorities and specific needs that are addressed in the Approved Capital Budget.*

Our 2016 audit report concluded (see Conclusion #9) that Liberty Utilities experienced capital expenditure variances in 2014 and 2015 of a sufficiently-large magnitude to demonstrate a lack of effective control of capital expenditures. Combined, the electric and gas businesses in New Hampshire experienced 2014 capital budget over-runs of over 70 percent. The total variance proved very large; moreover, the individual variances that comprised it were many and in some cases extremely large. The number, size, and nature of the variances was extraordinary, undermining confidence that management gave effective attention to managing to its established plans.

The large number and magnitude of 2015 capital budget variances at the line-item level continued to evidence a lack of effective capital budget execution. The problem with these very large variances on individual projects and programs came from the observation that management simply did not follow capital budgets prepared for and approved by senior management and the board of directors, spending dollars out of sync with the capital categories represented in the approved budget.

a. Follow-Up Conclusions

5. Management has improved its monitoring and tracking of over-budget CAPEX variances, using 10 percent variance tolerances.

We asked management to provide examples of changes made to meet Planning and Budgeting Recommendation #3's goal of providing more stringent capital expenditure variance tolerances. Management responded with its perspective on our recommendation, summarized as follows:

> *LU agrees conceptually with this recommendation, but does not agree that there should be hard limits on total expenditures. LU recognizes the need for improvement in monitoring and controlling actual capital costs as compared to budget costs, not only on specific projects but in total… LU understands the need to control capital spending, tempered by the realities of the situation in changed circumstance as compared to the anticipated circumstances at the time of budget preparation.*

Management cited the following implementation steps for this recommendation:[53]

> *For all projects, over-budget variances exceeding 10 percent (minimum $50,000) of the approved budget requires approval by local management (local Director of Engineering and State President). Under-budget variances will be reviewed in the project close out report reviewed at the local level… Requests for additional funding are the responsibility of the respective supervisor or project manager to be brought forward to the attention of the local committee described… the Over Spending Request Form (Appendix A) should be used. The Overspending Request Form should be prepared by the senior project lead (or another similar title) and approved by the project manager and director of projects/engineering…*
>
> *Beginning in 2016, Liberty begin monthly tracking of projects requiring over-expenditure authorization. The tolerance of plus or -10% noted above exceeds the recommended tolerance in the Liberty Consulting report.*

We understand that management has applied a policy for individual project variances of 10 percent/$50,000 for several years, including the 2014 and 2015 budget years, for which our 2016 audit report found problems. However, the Company has improved its monitoring and management of individual projects against to these variance tolerances beginning in 2016; since then it has more stringently applied variance policies. Management has also initiated focused monthly tracking of projects exceeding stated tolerances, indicating to us improved spending control and the usage of variance tolerances along the lines contemplated by our Recommendation #3.

3. Capital Budget Reporting Processes

a. Summary

The fourth planning and budgeting recommendation from our audit report stated:

4. Change monthly and year-end management reporting processes to include monitoring and detailed analysis of capital expenditure spending and variances.

Monthly management reports and meetings at the New Hampshire level should start to include capital budget reporting, variance analysis and variance mitigation on a line-item basis. Management of the capital budget must become a greater focus for the state president and vice president – finance.

Our 2016 audit report noted in Planning and Budgeting Conclusion #10) that New Hampshire and Oakville management did not effectively monitor and control problems with capital budget timing or 2014 and 2015 capital expenditure performance. We also found a lack of accurate information in year-end capital budget performance reports, indicating a lack of effective monitoring and control of the capital budget. Conclusion #11 observed that New Hampshire executive management and Oakville executive management did not take sufficient action to mitigate problems with capital budget process timing and reconciliations of 2014 or 2015 capital expenditure performance.

a. Follow-Up Conclusions

6. Management has improved its monitoring, control and management of the capital budget processes.

We asked LU-NH to provide examples of its capital budget control and management processes that address Liberty Recommendation 4. Management responded that:[54]

Starting in late 2014, LU held monthly, and in some months, weekly meetings to review capital spending, variances and status of key projects. In February 2016, LU started a more robust monthly capital spending meeting where spending variances and project status were more closely monitored.

7. Management has significantly improved its monthly capital budget meetings, variance management and reporting processes for its capital budgets.

Management prepares a detailed monthly capital spending report, and reviews variances, project completion, forecasted completion and spending, expected changes, and spending forecast (labor, materials and other major items). The attendee list includes LU's New Hampshire and/or East Region President, the Vice President – Operations, Operations Directors and Managers, the Finance Director, the Manager, Rates and Regulator Director and Manager, and the project managers. Monthly capital spending meetings provide a central control element, but issues and concerns related to capital spending also get addressed on an ongoing basis, to allow management to take any needed corrective actions as soon as possible. In addition, weekly payroll meetings, attended by operations and finance teams, review actual labor spending.[55]

Management also provided examples of the capital review meetings in 2014 and 2015, and the revised meeting format for 2016 and 2017. Management also provided documents showing current reporting processes, which include capital spending detail by project and total company regarding year-to-date budget status, risks, issues and other information.[56]

8. LU-NH has implemented Project Close-out Reports that provide a solid format for improving capital expenditure performance.

Management has implemented a corporate-wide format for reporting on capital projects that have been closed. Management reports the process as new for 2016, adding it since our 2016 audit report, specifically to improve capital project monitoring and management. Management offered a Project Close-out Report for each of the capital projects we recently reviewed, [57] which included:

- Concord Training Center for 2016
- iNATGAS CNG Project for 2016
- IT Software for 2016
- Keene Propane for 2016

The Project Close-out Reports provide the following information for each project:

- Project requesting group, project name and number, start and completion dates, project champions, sponsors and managers, and budgeted amount.
- Approvals of the Project Closeout Report
- Final Deliverable/Deployment Checklist
- Documentation Check-list
- Project Team
- Project Lessons Learned
- Post-Implementation Support Plans
- Open Issues
- Financial Actuals vs. Budget

These new reports allow for "post-audit reviews" that can prove helpful in improving capital project performance. For instance, levels of satisfaction regarding project quality, performance, scope, cost and schedule are solicited. The "Project Lessons Learned" provides a format for stating and describing project problems, along with recommendations to improve on the problem area. Management asks project teams to identify plans for post-implementation activities after project closing. Comments on project costs versus budgeted amounts are also solicited. We believe that this new report provides a useful format and opportunity to improve capital project performance by applying lessons learned.

9. Project Close-out Reports should cover the term of multi-year projects and management should use them more intensely.

During our review of the Project Close-out Reports, we observed that the reports cover only one twelve-month period. For the Training Center and iNATGAS CNG projects, capital expenditures extended over three calendar years, but the reports covered only 2016. Close-out reports for multi-year capital projects should cover all years of the project to be most useful, a concept with which management has verbally agreed.[58]

The Project Close-out Reports reflect a positive development and improvement, but we found the 2016 reports not fully filled out and complete, diminishing the opportunity to make full use of them. For example:

- The report for the Training Center project gave "Cost" and "Scheduling" ratings of "3" out of "5", which we found quite generous for a project budgeted for $1.03 million, but experiencing final spending of over $3.8 million. Moreover, the "Project Lessons Learned" only addressed a credit to the project for a shared water main with the iNATGAS CNG project. No "Open Issues" were listed. For this Training Center project, we did not consider the Project Close-out Report sufficiently robust.[59]
- The report for the iNATGAS CNG project gave "Scope" and "Cost" of "2" out of "5", which appeared appropriately low ratings. The Project Lessons Learned" included a problem statement: "Need to do a better job with project estimation" and a recommendation to "Do a better job during project estimating and accounting for burdens and AFUDC". The budgeted amount for 2016 was $1.4 million, with actual spending of about $1.7 million. While the project comments were more introspective, they apparently only covered the 2016 spending for a multi-year project.[60]
- Information for IT Software work recognized unbudgeted upgrades related to several IT projects, and noted that "Given the nature and need for the application upgrades, this blanket project should have been revised earlier in the year."[61]

4. Structured Monitoring and Analysis of Capital Spending Variances

a. Summary

The fifth planning and budgeting recommendation from our audit report stated:

> ***5. Replace the monthly "operating call" presentations and year-end management reporting processes with Oakville with a more structured, documented monitoring and detailed analysis of capital expenditure spending and variances.***

Management disagreed with this recommendation, noting that it performs in-depth detailed capital analysis currently at the business unit level, in accordance with the capital expenditure planning and management policy.[62] We agree with the company that the intent and effect of the recommended improvements to capital budget monitoring and management have been obtained through improvements made in response to Recommendation #4 described above, and that replacing the monthly call with Oakville is not required.

[1] Response CS-13
[2] Response CS-5
[3] Response CS-1
[4] Response CS-2
[5] Response CS-7

[6] Response CS-2
[7] Response CS-3.2
[8] Response CS-12
[9] Response CS-3.1
[10] Responses CS-3 and CS-11
[11] Response CS-4
[12] Response CS-6
[13] Response CS-6.1
[14] Response CS-6.2
[15] Response CS-6.3
[16] Response CS-14
[17] Response CS-7
[18] Liberty Utilities Customer Satisfaction Tracking, New Hampshire Gas, December 2016 (LUTH Research).
[19] Response CS-8
[20] Response CS-10
[21] Response PB-2.6
[22] Responses PB-2.1, PB-2.2 and PB-2.4
[23] Response PB-12
[24] Response PB-11
[25] Response PB-2.4
[26] Response PB-2.4
[27] Response PB-2.3
[28] LU PO #4670, Revision 1 dated March 15, 2015, and PB-2.3 Supplemental
[29] LU PO #4670, Revision 2 dated June 12, 2015, and PB-2.3 Supplemental
[30] Response PB-2.3 Supplemental
[31] Response PB-8
[32] Response PB-5.1
[33] Response PB-7
[34] Response PB-5.2
[35] Response PB-5.3
[36] Response PB-5.4
[37] Response 6.1
[38] Response PB-6
[39] Response PB-6.13
[40] Responses PB-6 and PB-14
[41] Response PB-6.15
[42] Response 6.16 and 6.17
[43] Response PB-6
[44] Response PB-15
[45] Confidential Staff Data Request 2-41
[46] Response PB-1
[47] Response PB-16
[48] Response 6.1
[49] Responses PB 6.2 through PB 6.12
[50] Responses PB-6 and PB-14
[51] Response PB-6
[52] Response PB-15
[53] Response PB-17
[54] Response PB-1
[55] Response PB-18
[56] Responses PB-1.1 to PB-1.4
[57] Responses PB-2.5, PB-5.3, PB-6.13, PB-6.16, PB-6.17
[58] Discussion at the LU Technical Session, August 28, 2017
[59] Response PB-2.5

[60] Response PB-5.3
[61] Response PB-6.13
[62] Response PB-18