



Town of Reading Meeting Minutes

Board - Committee - Commission - Council:

RMLD Citizens Advisory Board

Date: 2016-02-24

Time: 6:30 PM

Building: Reading Municipal Light Building

Location: Winfred Spurr Audio Visual Room

Address: 230 Ash Street

Purpose: General Business

Session: General Session

Attendees: **Members - Present:**

Mr. George Hooper, Chair (Wilmington); Mr. David Nelson, Vice Chair (Lynnfield); Mr. David Mancuso, Secretary (Reading); Mr. Mark Chrisos (North Reading); Mr. Dennis Kelley (Wilmington)

Members - Not Present:

Others Present:

Mr. Phil Pacino, Board of Commissioners
Ms. Coleen O'Brien, Mr. Hamid Jaffari, Ms. Michelle Lamson, Ms. Kathleen Rybak, Mr. William Seldon

Minutes Respectfully Submitted By: Mr. George Hooper, Chair

Topics of Discussion:

1. Call Meeting to Order – G. Hooper, Chair

Chair Hooper called the meeting of the Citizens' Advisory Board to order at 6:30 pm and noted that the meeting was being audio recorded.

2. Recent Storm, Related Outages and Communication to the Public – C. O'Brien, General Manager

Ms. O'Brien reported on recent storm related outages and noted that during that event RMLD implemented the use of Twitter (through a free mobile app) as a means to notify the public regarding key outage information, i.e., what area is out, what caused the outage, and an estimated time of restoration (ETR). The Twitter feed will also appear on the RMLD website. Ms. O'Brien noted the purpose is not only to keep customers informed about outages, but also to mitigate the number of calls that go to the Control Center. The mobile app can also be used to report an outage. Additional enhancements to the app such as "pay my bill" are being developed. Ms. O'Brien noted that there is a larger communication plan in the works.

The group discussed the functionality of the app and Twitter, and the plans to communicate the availability of this new feature to the public.

3. Home Electrical Safety Update – C. O'Brien, General Manager

Ms. O'Brien reported that RMLD will be working with a local electrician and RCTV to produce a YouTube video that talks about home electrical safety. The intent will be to explain what equipment the customer owns and recommended maintenance, and what equipment RMLD owns (the two meet where the service connects to the house at the

weatherhead). The video will cover different scenarios such as flickering lights (what causes it; what the customer should do; and what RMLD will do), proper grounding, etc. The electrician will represent the National Electric Code and RMLD the National Electric Safety Code. Ms. O'Brien noted that (once completed) we will post the video on the RMLD website for customers to view and reference.

Mr. Mancuso asked if RMLD has a disclaimer anywhere about who is responsible for what. Ms. O'Brien responded that it is part of the Terms and Conditions, which are currently being re-written and will be included in a full service handbook that is being developed.

4. Proposed Distributed Generator – H. Jaffari, Director of Engineering & Operations
Materials Included: Presentation Slides

Mr. Jaffari provided an update on the progress with the distributed generator unit, which is part of a pilot program aimed at off-setting some of the anticipated increases to capacity and transmission costs. RMLD is planning to install a 2 to 2.5 megawatt gas generator at Station 3 in North Reading, which will run primarily during the summer months to shave the peak. The credit received from running the unit will be spread across the board to all rate-payers. An RFP was issued for this unit previously, but it is being re-bid and the RFP should be published by the second week in March. An in-service date for the generator is anticipated for May or June 2017.

Mr. Jaffari and Mr. Ollila are working to address any potential zoning or permitting requirements. They have been in touch with Town representatives in North Reading. Mr. Chrisos asked about any potential noise generated from the unit. Mr. Jaffari noted that a noise study has been completed, and the addition of this unit should not have a significant impact on the noise level.

Chair Hooper asked about the gas supply. Mr. Jaffari confirmed that it was natural gas. National Grid will be upgrading the supply to the area to eight inch pipes to accommodate the unit(s).

Mr. Jaffari continue with a description of potential unit as depicted in Slide 4. Mr. Mancuso asked about the budget. The initial budget was somewhere in the neighborhood of \$2m in expense; we are now looking at possibly \$2.8. Mr. Jaffari responded that the revised (higher) estimate includes a differential to move from 2 to 2.5 megawatts. Slide 5 outlined installation, benefits and the expected return on investment. A single unit or smaller module units may be utilized depending on the cost analysis. The ISO credits in 2015 and 2016 are \$138,000 per megawatt-year. After 2017, it is estimated to go up to approximately \$290,000 per megawatt-year. Therefore, a return on investment of five years is expected. Anything after five years will basically be a credit to the ratepayers. Mr. Jaffari noted that the capacity and transmission charges are passed through to the customers. If the pilot is successful and we see the expected benefits (off-sets to capacity and transmission costs), we will then expand the program to other sites. Mr. Seldon added this is a two-pronged cost savings. Transmission costs (that we are billed on) are based on peaks that happen monthly, and the capacity costs (that we are going to be saving on) are based on the annual peak. The 600-hour estimate assumes that we are going to hit the overall system peak and that will be the capacity reduction. We are also assuming that we are going to hit approximately 75% of the monthly peaks.

The group discussed the mechanics of how the peak will be monitored and the unit operated. Mr. Chrisos noted that he had asked (via email) for an update about the forward capacity market. Mr. Seldon responded that the number does change a little bit in 2017 because the capacity market came in lower (at \$8.00 vs. \$10.55 as expected). The price is going up – its just not going up to where they thought it would.

Mr. Chrisos noted, we were all in favor of the project. However, it is increasing our carbon footprint, and it is important to offset that with what we are doing with demand side so that we become more neutral. Ms. O'Brien responded that RMLD is developing community solar and other programs aimed at the 15% renewables requirement. A solar system was just turned on in Wilmington, and we continue to work on programs that can help to offset the footprint. There are barriers to such initiatives, but RMLD continues to work with the communities.

Mr. Jaffari added that another option is the potential of installing battery storage in the service area. RMLD is monitoring the availability of grants for such initiatives.

5. Status Update: Reliability Study – H. Jaffari, Director of Engineering & Operations
Materials: Booth and Associates – 2015 Reliability Study Recommendations

Mr. Jaffari reviewed the progress on the projects identified by Booth and Associates, and UPG. As noted on the report, we have complete some of the items in-house and the rest are in progress. Items that needed to be taken care of immediately have been addressed and the rest are in progress (as noted in the status column).

Mr. Nelson asked about item 13. Mr. Jaffari responded that this item is near completion. Mr. Nelson noted that this was one of the safety issues brought up by Booth. Mr. Jaffari responded that the fence has been repaired and the middle section of the grounding grid (that was damaged) is going to be replaced. Special clamps were needed and they have just been received.

Status Update - Organizational Study: Coleen O'Brien, General Manager
Materials: Leidos – 2015 Organizational Study

Ms. O'Brien provided a worksheet in the same format provided by Leidos, which illustrates the progress on each of the items identified in the Organizational Study. Ms. O'Brien noted that some of the items such as "establish a planning culture" are ongoing processes. Everything that we do with strategic planning, career development, succession planning, procedures and policies, accountability – speak to moving the culture from reactive to proactive. These items are ongoing.

In Phase II, Leidos is triangulating the wage scale with the job descriptions and the career development plans to make sure that they all speak to each other and everything is consistent. Phase III includes Leidos coming in and helping with the employee satisfaction surveys, team leadership/culture initiatives, and writing the new strategic plan.

Ms. O'Brien highlighted some other accomplishments. Item 1.4 (Updated Six-year Plan) is completed and is updated annually with the Budget. Item 3.3, the Integrated Resources Division's (IRD) re-organization is complete. Item 7.3 (develop a succession plan for the Manager of Account and Business): That group has been redesigned, reconfigured and restructured.

Ms. O'Brien noted that much work has been accomplished and spoke about some of the challenges with implementing change. It is challenging for everyone, but it's moving in the right direction.

Mr. Chrisos asked about Items 8 and 8.2 and the timeline for both of those items. Ms. O'Brien responded that we are an electric utility and safety is our number one priority. We are adding components to our Safety Program including formalizing and adding policies and procedures, and staff training. We have adopted the APPA (American Public Power Association) Safety Manual. An audit of all the buildings will be scheduled and any issues identified will be fixed. On 8.1 Board Safety Policies – we are going through all the policies with the Board. The Board Policy on Safety is more of an operational issue. Mr. Jaffari highlighted some additional initiatives, including quarterly

safety meetings, the Arc Flash Study, tailboard reviews to include the arc flash level and protective gear requirements, the purchase of Category 4 arc flash suits, and pole testing. Ms. O'Brien added that we will also be sponsoring some employee health programs.

Mr. Nelson asked if RMLD has an existing manual – Injury and Illness Prevention Program (as noted in 8.2). Ms. O'Brien responded yes, the APPA manual, which governs not only OSHA, but also utility workers, is adopted as our safety manual. There are about 13 other safety components that make up our Safety Program including the quarterly safety meetings (of the Utility Committee and a general sub-committee.)

6. Next Meeting – G. Hooper, Chair

Ms. O'Brien presented a recommendation from the Business Finance Group relative to financial reporting. The monthly MMWEC billing is received approximately the 20th of each month, which does not provide ample time to carefully review the monthly financials (budget to actual) before presentation to the CAB and Board. If the CAB were to meet the first week of each month and the Commission the second week of each month, this would allow staff one week to process the MMWEC information, vet it, and meet with the senior managers to go through the financials prior to distribution. The CAB will then have an opportunity to review the financials and comment before the Commissioners meeting/review. The CAB agreed (once the FY17 Budget review in April is completed) to adjust the schedule moving forward. The next meeting of the CAB was scheduled for March 23.

Chair Hooper asked Commissioner Pacino if he had anything to add.

Mr. Pacino noted that he and Mr. Talbot are both up for re-election. Mr. Pacino commented on how thorough the discussion was for the generator.

7. Adjournment – G. Hooper, Chair

Mr. Nelson made a motion to adjourn the Citizens' Advisory Board meeting, seconded by Mr. Kelley. Hearing no further discussion, Motion carried 5:0:0.

The Citizens' Advisory Board Meeting adjourned at 8:18 pm.

As approved on October 12, 2016.



CAB Meeting February 24, 2016

Presented by:

Coleen O'Brien, GM

Hamid Jaffari, Director of Engineering & Operations

Proposed RMLD Distributed Generation Pilot Program

- **Where?** Substation 3 in N. Reading
- **How many units?** 1
- **Project Progress Report:**
 - **Noise Study:** Status: 100% Completed.
 - **Environmental Study:** Status: 100% Completed.
 - **RFP Legal Review:** Status: in-progress.
 - **National Grid Gas Supply:** Status: In process. Cost: \$120,803
 - **Town of N. Reading Zoning Review:** Status: Scheduled for March 8th, 2016.
 - **Bidding process:** Status: RFP will go out the week of March 14th, 2016.
 - **Electrical System Impact Study:** Status: Pending RFP Award.
 - **Construction Scheduling:** Pending RFP Award Timeline.
 - **Proposed In Service Date:** May 1st, 2017 (prior to annual peak).
- **Project Estimated cost:** \$2.8 M

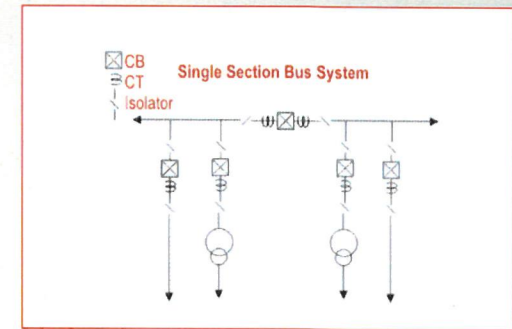
Distributed Generation



Distributed Generation Installation

- Substation Installation:
- How many units?
one 2-2.5MW unit or 5-Modular units
- Benefits:
 - New England ISO estimated Credit (Capacity & Transmission):

| | |
|-----------------------|-----------------------|
| <u>2015-2016</u> | <u>After 2017</u> |
| \$138K/MW-year | \$290K/MW-year |
 - Providing Utilities Load Shedding capability for ISO upon demand
- Funds
 - Municipal Bond **ROI (starting 2017) \approx 5 years**
 - Federal & State Grants/Funds



Reliability Study progress Report



[CAB Meeting 2016\Booth-UPG Recommendations.xlsx](#)

CAB Meeting 2016\Booth-UPG Recommendations.xlsx



Organizational Study progress Report



CAB Meeting 2016\Booth-UPG Recommendations.xlsx



*Thank
You!*

BOOTH AND ASSOCIATES - 2015 RELIABILITY STUDY - RECOMMENDATIONS

| CONSULTANT RECOMMENDATION | | | YEAR | COST (Booth Estimate) | RECOMMENDATION | | STATUS | RMLD WORK PLAN |
|---------------------------|-------|---|---------|-----------------------|----------------|--------------------|-------------|--|
| | | | | | ACCEPTED | ALTERNATE SOLUTION | | |
| 1 | BOOTH | Replace cable trench covers at Sub 4 (should be expense, but most put large investments in capital) | 2015-16 | \$100,000 | ✓ | | in progress | Bid for trench covers awarded 1/28/16. Delivery expected in 10-12 weeks. |
| 2 | BOOTH | Sub 5 bus duct from transformer to switchgear has reached the end of useful life and should be replaced with the switchgear replacement | 2015-16 | \$400,000 | | ✓ | in progress | Bus E has been tested. Bus D tested on 12/4 and 12/5. Followup needed with Bus side connection in switchgear and additional heater needed. Waiting on proposal for repair. |
| 3 | BOOTH | Replace fence at Sub 4 and fix grounding issues | 2015-16 | \$100,000 | ✓ | | in progress | Fence is fixed and barb wire replaced. Grounding materials ordered. |
| 4 | BOOTH | Rebuild pole line along Lowell Street | 2015-16 | \$375,000 | ✓ | | in progress | Project is 82% complete. |
| 5 | BOOTH | Complete AMI Upgrade and RF Mesh Network | 2015-16 | \$350,000 | ✓ | | in progress | 5 Getways installed. Relays to be installed. Elster Meters are due in mid-Feb |
| 6 | BOOTH | Implement GIS Upgrade Program | 2015-16 | \$350,000 - \$750,000 | ✓ | | in progress | GIS asset survey is in-progress |
| 7 | BOOTH | Implement Arc Flash Study Analysis | 2015-16 | \$30,000 | ✓ | | completed | |
| 8 | BOOTH | Develop construction standards | 2015-16 | in-house | ✓ | | in progress | |
| 9 | BOOTH | Update Joint-Use Agreement with Verizon | 2015-16 | in-house | ✓ | | in progress | |
| 10 | BOOTH | Replace bushings on Sub 4 transformer. | 2015-16 | \$150,000 | ✓ | | completed | |
| 11 | BOOTH | CT wiring at Sub 3 should be fixed. The CT circuits should only be bonded on grounding in exactly one spot | 2015-16 | O&M | ✓ | | completed | CT's are grounded in only one location. |
| 12 | BOOTH | Sub 3 has NO under-frequency trips. Relay is not programmed to trip. | 2015-16 | O&M | | ✓ | completed | Station 3 has UF capability. RMLD is in compliance with ISO's UF requirement. |
| 13 | BOOTH | Fence grounding is not up to code@ Station 4. Fabric and barbed wire should be grounded. | 2015-16 | O&M | ✓ | | in progress | Facilities/Technical Services working on it. Grounding materials ordered. |
| 14 | BOOTH | Earth/gravel around fence at Sub 5 | 2015-16 | O&M | ✓ | | completed | Completed on 12/3/15 |
| 15 | BOOTH | Interface CIS with GIS platform | 2015-16 | in-house | ✓ | | in progress | GIS Data collection is in-progress |
| 16 | BOOTH | Create Milsoft Windmil® model | 2015-16 | in-house | ✓ | | | Pending completion of GIS. |
| 17 | BOOTH | Complete SCADA software and hardware upgrade | 2015-17 | \$350,000 | ✓ | | in progress | nDimensions cyber security software complete. |
| 18 | BOOTH | Upgrade main feeder of Circuit 5W9 to 795 to address voltage and conductor capacity issues (1.6 miles) | 2015-17 | \$240,000 | ✓ | | in progress | The first 3000' has been reconducted. This work can only be done during the fall/winter months. May have a hurdle with Verizon & pole replacements. |
| 19 (1) | BOOTH | Upgrade UG circuit 3W5, 3W13, 4W9, 3W14, 4W14, 4W16, 4W23, 4W24, 4W28, 4W30, 5W4 exits to parallel 750 Cu | 2015-19 | \$850,000 | | ✓ | | Can't parallel up the feeder get-a-ways at Station 4 & Station 5, no spare conduits available. Can't parallel up the feeder get-a-ways at Station 3, no room for the second set of cables in the back of the switchgear. Solution: Load relief by feeder switching and/or new Wilmington Substation. |
| 20 | BOOTH | Replace breakers at Sub 4 due to age and condition | 2015-20 | \$3,000,000 | ✓ | | completed | All 26 breakers were replaced by 1/10/2016. |
| 21 | BOOTH | Pole inspection and replacement program. RMLD currently inspects 10% of RMLD-owned poles per year. Negotiate with Verizon to address Verizon-owned poles. Total 13,000 poles. | 2015-24 | \$9,000,000 | ✓ | | in progress | 2014 /2015 inspection completed. Pole replacement in-progress. |
| 22 | BOOTH | Continued implementation of Grid Modernization Plan (GMP) | 2015-24 | | | | | |
| | | • Outage Management (OMS) | | \$100,000 | ✓ | | in progress | OMS installed waiting for GIS overhaul & AMI integration |
| | | • Transformer Loading Management (TLM) | | \$100,000 | ✓ | | in progress | |
| | | • Demand Response (DR) | | \$100,000 | ✓ | | in progress | |
| | | • Demand Side Management (DSM) | | \$100,000 | ✓ | | in progress | |
| | | • Distributed Generation Program | | \$11,000,000 | ✓ | | in progress | |
| 23 (1) | BOOTH | Upgrade UG circuit exit 4W7 to parallel 750 Cu | 2016 | \$70,000 | | ✓ | | Can't parallel up the feeder get-a-way at Station 4, no spare conduits available. Solution: Load relief by feeder switching and/or new Wilmington Substation. |
| 24 | BOOTH | Upgrade main feeder for Circuit 5W5 to 795 to address voltage and conductor capacity issues (2.5 miles) | 2016-17 | \$375,000 | ✓ | | | Change construction years to FY17, FY18 & FY19. Hurdle: Verizon pole replacement area |
| 25 | BOOTH | New Wilmington Substation (land acquisition and design) | 2016-17 | \$750,000 | ✓ | | | Searching for land in Wilmington |

| CONSULTANT RECOMMENDATION | | | YEAR | COST (Booth Estimate) | RECOMMENDATION | | STATUS | RMLD WORK PLAN |
|---------------------------|-------|--|---------|-----------------------|----------------|--------------------|-------------|---|
| | | | | | ACCEPTED | ALTERNATE SOLUTION | | |
| 26 | BOOTH | Upgrade main feeder of Circuit 4W24 to 795 to address voltage and conductor capacity issues (1.5 miles) | 2016-17 | \$225,000 | ✓ | | | Change construction years to FY17, FY18 & FY19. Hurdle: Verizon pole replacement area |
| 27 | BOOTH | Complete comprehensive distribution system analysis upon GIS completion | 2016-17 | in-house | ✓ | | | |
| 28 | BOOTH | Complete the 4 kV Conversion Program | 2016-19 | \$1,500,000 | ✓ | | in progress | Change completion date to FY20. Multiple year project. 32+/- stepdown areas in the service territory. Converted the Burrough's Road area October 22, 2015. |
| 29 | BOOTH | Sub 3 does have SEL relays but they are all legacy models that don't provide the function (especially communication) of today's versions. If the plan is to have a fully-automated system then: replace the SEL relays with the modern version. Should be able to replace in existing hole and wiring. | 2016-19 | \$200,000 | ✓ | | in progress | Need to hire engineering firm to design. |
| 30 | BOOTH | New Wilmington Substation (procurement, design, construction & commission) | 2017-19 | \$4,250,000 | ✓ | | in progress | Searching for a land near 115 kV lines in Ballardvale/Upton Rd area |
| 31 (1) | BOOTH | Sub 5 Switchgear is at the end of useful life. The relaying needs to be updated for the system automation project. The existing breakers are 2008 vintage but should not be reused. They can be sold on the open market. | 2017-19 | \$1,200,000 | | ✓ | | As part of the planning for the proposed substation in Willmington the need for the Wildwood Substation will be reviewed. |
| 32 (1) | BOOTH | Upgrade UG circuit exits 3W7, 4W5, 5W5, 5W9 to parallel 750 Cu to increase circuit capacity | 2017-19 | \$280,000 | | ✓ | | Can't parallel up the feeder get-a-ways at Station 4 & Station 5, no spare conduits available. Can't parallel up the feeder get-a-aways at Station 3, no room for the second set of cables in the back of the switchgear. Solution: Load relief by feeder switching and/or new Wilmington Substation. |
| 33 | BOOTH | Feeder Automation - complete System Coordination Study in conjunction | 2017-24 | \$4,000,000 | ✓ | | in planning | |
| 34 | BOOTH | Upgrade main feeder of Circuit 4W28 to 1000 Cu to address voltage and conductor capacity issues (0.3 miles) | 2018 | \$60,000 | | ✓ | | 4W28 is the dedicated circuit for Analog Devices. Any type of load relief for feeder 4W28 will require the reconfiguration of ADI distribution system or an additional RMLD feeder to the site. |
| 35 | BOOTH | Substation automation | 2019 | \$112,000 | ✓ | | | |
| 36 (1) | BOOTH | Upgrade UG circuit exits 4W6, 5W8 to parallel 750 to increase circuit capacity. | 2019 | \$120,000 | | ✓ | | Can't parallel up the feeder get-a-ways at Station 4 & Station 5, no spare conduits available. Can't parallel up the feeder get-a-aways at Station 3, no room for the second set of cables in the back of the switchgear. Solution: Load relief by feeder switching and/or new Wilmington Substation. |
| 37 | BOOTH | Upgrade main feeder of Circuit 4W23 to 795 to address voltage and conductor capacity issues (1.1 miles) | 2020 | \$165,000 | ✓ | | | Change construction years to FY20, FY21 & FY 22. Hurdle: Verizon pole replacement area. |
| 38 (1) | BOOTH | Upgrade UG circuit exits 3W18, 4W4, 4W10, 4W18 to parallel 750 to increase circuit capacity. | 2021-23 | \$370,000 | | ✓ | | Can't parallel up the feeder get-a-ways at Station 4 & Station 5, no spare conduits available. Can't parallel up the feeder get-a-aways at Station 3, no room for the second set of cables in the back of the switchgear. Solution: Load relief by feeder switching and/or new Wilmington Substation. |
| 39 | BOOTH | Upgrade main feeder of Circuit 4W9 to 795 to address voltage and conductor capacity issues. | 2021-23 | \$75,000 | ✓ | | | |
| 40 | BOOTH | Review and upgrade electric system comprehensive analysis | 2024 | \$100,000 | ✓ | | | |
| 41 | BOOTH | Transformer D and E replacement at both Sub 4 and Sub 5. They are approaching their end of useful life. | 2024-25 | \$3,400,000 | ✓ | | | |
| 42 | BOOTH | Install oil containment for Transformer D and E at Sub 4 | 2024-25 | \$100,000 | ✓ | | complete | |
| 43 (1) | BOOTH | Upgrade UG circuit exits 3W8, 4W12 to parallel 750 Cu to increase circuit capacity. | 2024-26 | \$180,000 | | ✓ | | Can't parallel up the feeder get-a-ways at Station 4, no spare conduits available. Can't parallel up the feeder get-a-aways at Station 3, no room for the second set of cables in the back of the switchgear. Solution: Load relief by feeder switching and/or new Wilmington Substation. |

| CONSULTANT RECOMMENDATION | | | YEAR | COST (Booth Estimate) | RECOMMENDATION | | STATUS | RMLD WORK PLAN |
|---------------------------|-------|---|---------|-----------------------|----------------|--------------------|-------------|--|
| | | | | | ACCEPTED | ALTERNATE SOLUTION | | |
| 44 | BOOTH | Upgrade main feeder of Circuit 4W30 to 795 to address voltage and conductor capacity issues. | 2024-26 | \$165,000 | ✓ | | | |
| 45 | BOOTH | Replace control panels for Ring bus at Sub 4 | 2024-26 | \$200,000 | ✓ | | | |
| 46 | UPG | Station 3 Transformers: #3. Adjust timing delay on the winding temperature trip. | | | ✓ | | | |
| 47 | UPG | Station 3 Transformers: #4. Add a low oil trip to transformers so they trip before any winding damage can occur. | | | ✓ | | | |
| 48 | UPG | Station 3 Transformers: #5. Replace LTC main braking rollers with the new design that has a brass sleeve for the roller to ride on. | | | ✓ | | | |
| 49 | UPG | Station 3 Transformers: #6. Repair LTC control displays for #TA and #TB | | | ✓ | | | Working with Beckwith for replacement control. |
| 50 | UPG | Station 3 Transformers: #7. Replace or repair the Trans-TB Hydran unit. | | | ✓ | | | |
| 51 | UPG | Station 3 Transformers: #8. Repair the Trans TB temperature differential unit which is in failure mode. | | | ✓ | | completed | Quote received for replacement unit. |
| 52 | UPG | Station 3 15 kV Breakers #2: the close spring assembly needs to be replaced. | | | ✓ | | in progress | |
| 53 | UPG | Station 3 15 kV Breakers: #3. DC control power fuses for trip, close, motor should be separated. | | | ✓ | | | |
| 54 | UPG | Station 3 15 kV Breakers: #4. Control handle trip should be separated from relay and should trip breaker directly. | | | ✓ | | | |
| 55 | UPG | Station 3 Relays: #1. The DC negative feed to the differential relay for the digital inputs should be altered to tie a DC negative via a fuse. | | | ✓ | | | |
| 56 | UPG | Station 3 Relays: #2. Review and alter the under voltage transfer scheme so that it operates like the same schemes at the other stations. | | | | | | Need to hire engineering firm to design. |
| 57 | UPG | Station 4 115 kV Breakers: #1 (GCB1). Replace the breaker. | | | ✓ | | completed | |
| 58 | UPG | Station 4 Transformers: #1. Repair trans #110D cooling contactor for stage #2. | | | | | | Will need to follow-up with UPG for more information. |
| 59 | UPG | Station 4 Transformers: #2. Replace the trans #110D main tank pressure relief device contact. | | | ✓ | | completed | |
| 60 | UPG | Station 4 Transformers: #3. Replace the trans #110D main tank low oil gauge. | | | ✓ | | Completed | |
| 61 | UPG | Station 4 Transformers: #4. Repair the DC control power supply control cabling. | | | ✓ | | completed | |
| 62 | UPG | Station 4 Transformers: #5. Replace the trans 110E main tank low oil and pressure relief device cables from the devices to the conduit bodies. | | | ✓ | | | |
| 63 | UPG | Station 4 Transformers: #6. Replace the trans 110E cooling fan mounted top left. | | | ✓ | | in progress | Replacement motors on order. |
| 64 | UPG | Station 4 Transformers: #7. Replace all four bushings of Trans #110E and #110D. | | | ✓ | | completed | See Item #10 (Booth Recommendation) |
| 65 | UPG | Station 4 15kV Breakers: #2. check circuit 4W11 on a normal basis to insure that the heaters remain on to keep the breakers above ambient temperature so that no moisture condenses on the breaker insulation. | | | ✓ | | completed | |
| 66 | UPG | Station 4 Breakers: #4. Replace the ground stab on 4W22. | | | ✓ | | completed | |
| 67 | UPG | Station 5 Transformers: #1. Replace the trans #D main tank low oil and pressure relief divide output cable. Reconnect the LTC low oil level gauge wiring in the conduit body where the device cable terminates. | | | ✓ | | | |
| 68 | UPG | Station 5 15kV Breakers: #1. Take bus out of service and check alignment and correct if possible. | | | ✓ | | in progress | Bus E has been tested. Bus D will be tested on 12/4 and 12/5. Followup needed with Bus side connection in switchgear and additional heater needed. Waiting for proposal. |

| CONSULTANT RECOMMENDATION | | | YEAR | COST (Booth Estimate) | RECOMMENDATION | | STATUS | RMLD WORK PLAN |
|---------------------------|-----|--|------|-----------------------|----------------|--------------------|-------------|--|
| | | | | | ACCEPTED | ALTERNATE SOLUTION | | |
| 69 | UPG | Station 5 15kV Breakers: #2. Remove breaker 5W9, inspect for corossions, and correct misalignment of the Breaker contact Rosette & cell stab during maintenance cycle. | | | ✓ | | in progress | Bus E has been tested. Bus D will be tested on 12/4 and 12/5. Followup needed with Bus side connection in switchgear and additional heater needed. Waiting for proposal. |
| 70 | UPG | Station 5 15kV Breakers: #3. Take bus out of service and check alignment and correct if possible. | | | ✓ | | in progress | Bus E has been tested. Bus D will be tested on 12/4 and 12/5. Followup needed with Bus side connection in switchgear and additional heater needed. Waiting for proposal. |
| 71 | UPG | Station 5 15kV Breakers: #4. Take bus tie breaker out of service and check alignment and correct if possible. | | | ✓ | | in progress | Bus E has been tested. Bus D will be tested on 12/4 and 12/5. Followup needed with Bus side connection in switchgear and additional heater needed. Waiting for proposal. |

Note: Recommenations and priorities are based on existing system conditions. Should conditions change, these priorities will likely require re-evaluation.

(1) New Substation in Wilmington will address these recommendations; alternate solution provided in the meantime.

LEIDOS - 2015 ORGANIZATIONAL STUDY

Leidos Timeline
Recommendation Not Accepted

RMLD Proposed Timeline
Recommendation Completed



| CONSULTANT RECOMMENDATION | | CY 2015 | | CY 2016 | | | | CY 2017 | | | | CY 2018 | | RMLD WORK-PAN/COMMENTS |
|---------------------------|--|---------|----|---------|----|----|----|---------|----|----|----|---------|----|---|
| | | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | |
| 1 | ESTABLISH PLANNING CULTURE | | | | | | | | | | | | | |
| 1.1 | Update 2008 Strategic Plan (New Strategic Plan) | | | | | | | | | | | | | |
| 1.2 | Establish planning culture | | | | | | | | | | | | | On-going. |
| 1.3 | Update Integrated Resources plan | | | | | | | | | | | | | |
| 1.4 | Update six-year plan | | | | | | | | | | | | | |
| 1.5 | Develop electric system master plan | | | | | | | | | | | | | Long-term Planning, GIS, & Technology Roadmap |
| 2 | DEVELOP AN EFFECTIVE SUSTAINABLE WORKFORCE | | | | | | | | | | | | | |
| 2.1 | Develop workforce development plan | | | | | | | | | | | | | Leidos Support |
| 2.2 | Develop succession plans | | | | | | | | | | | | | Leidos Support - CY16 Q2 and Q3 |
| 2.3 | Update job descriptions | | | | | | | | | | | | | Leidos Support - CY16 Q2 and Q3 |
| 2.4 | Implement consistent performance review process | | | | | | | | | | | | | Leidos Support - CY16 Q2 and Q3 |
| 2.5 | Hire additional HR personnel | | | | | | | | | | | | | |
| 2.6 | Increase efforts to fill vacant positions | | | | | | | | | | | | | |
| 3 | IMPROVE ORGANIZATIONAL EFFECTIVENESS | | | | | | | | | | | | | |
| 3.1 | Reorganize to better align functions | | | | | | | | | | | | | On-going. |
| 3.2 | Create new Finance and Administration division | | | | | | | | | | | | | Accounting positions modified. Jobs posted. |
| 3.3 | Align Customer Services under the Integrated Resources Division | | | | | | | | | | | | | |
| 3.4 | Reorganize & Expand Engineering group (Develop System Engineering Group) | | | | | | | | | | | | | |
| 3.5 | Formalize business process and performance measurement | | | | | | | | | | | | | |
| 3.6 | Develop and implement internal and external communication plans | | | | | | | | | | | | | |
| 3.7 | Assess organizational culture and employee satisfaction | | | | | | | | | | | | | Leidos Support |
| 4 | DEVELOP LEADERSHIP CAPABILITIES | | | | | | | | | | | | | |
| 4.1 | Assess leadership | | | | | | | | | | | | | |
| 4.2 | Provide management and leadership training. | | | | | | | | | | | | | On-going. |
| 4.3 | Provide cross-divisional management training. | | | | | | | | | | | | | On-going. |



LEIDOS - 2015 ORGANIZATIONAL STUDY

Leidos Timeline
Recommendation Not Accepted

RMLD Proposed Timeline
Recommendation Completed

| CONSULTANT RECOMMENDATION | | CY 2015 | | CY 2016 | | | | CY 2017 | | | | CY 2018 | | RMLD WORK-PAN/COMMENTS |
|---------------------------|--|---------|----|---------|----|----|----|---------|----|----|----|---------|----|--|
| | | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | |
| 5 | ESTABLISH PROJECT MANAGEMENT CULTURE | | | | | | | | | | | | | |
| 5.1 | Develop project management policies and procedures | | | | | | | | | | | | | |
| 5.2 | Establish project management training plan | | | | | | | | | | | | | |
| 5.3 | Add project management experience and certifications to job descriptions | | | | | | | | | | | | | On-going. Job description revisions. |
| 5.4 | Establish project management performance expectations | | | | | | | | | | | | | |
| 6 | ENSURE COMPETITIVELY PRICED SERVICES | | | | | | | | | | | | | |
| 6.1 | Continue regular cost of service and rate design review | | | | | | | | | | | | | |
| 6.2 | Increase customer and engagement and education of alternate rates | | | | | | | | | | | | | TOU, DSM, Education |
| 7 | IMPROVE FINANCIAL PLANNING AND RISK MANAGEMENT | | | | | | | | | | | | | |
| 7.1 | Review and update reserve policies | | | | | | | | | | | | | All policies. |
| 7.2 | Establish a risk management committee and enterprise risk management plan. | | | | | | | | | | | | | |
| 7.3 | Develop a succession plan for the Manager of Accounting and Business | | | | | | | | | | | | | Finalized. |
| 7.4 | Formalize financial and accounting business processes | | | | | | | | | | | | | |
| 8 | STRENGTHEN SAFETY CULTURE | | | | | | | | | | | | | |
| 8.1 | Review Board Safety Policy | | | | | | | | | | | | | All policies. |
| 8.2 | Develop injury and illness prevention program | | | | | | | | | | | | | Review of existing manual and OSHA requirements. |
| 9 | DIVERSIFY RESOURCES | | | | | | | | | | | | | |
| 9.1 | Develop distributed generation penetration study | | | | | | | | | | | | | |
| 9.2 | Review cost effectiveness and economic potential for end-use measures | | | | | | | | | | | | | Tangent and DSM |
| 10 | ESTABLISH A CULTURE OF COMPLIANCE | | | | | | | | | | | | | |
| 10.1 | Assign Compliance Manager and develop compliance plan and requirements. | | | | | | | | | | | | | Leidos support. |
| 11 | IMPROVE CUSTOMER SERVICE | | | | | | | | | | | | | |
| 11.1 | Conduct customer satisfaction surveys. | | | | | | | | | | | | | Communication plan. |

Leidos Timeline
 Leidos Timeline
 Recommendation Not Accepted

RMLD Proposed Timeline
 RMLD Proposed Timeline
 Recommendation Completed

| CONSULTANT RECOMMENDATION | | CY 2015 | | CY 2016 | | | | CY 2017 | | | | CY 2018 | | RMLD WORK-PAN/COMMENTS |
|---------------------------|---|---------|----|---------|----|----|----|---------|----|----|----|---------|----|--|
| | | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | |
| 11.2 | Conduct post transaction surveys. | | | | | | | | | | | | | Communication plan. |
| 11.3 | Develop and implement customer engagement plan. | | | | | | | | | | | | | |
| 12 | PLAN FOR FUTURE TECHNOLOGIES | | | | | | | | | | | | | |
| 12.1 | Complete operating technology roadmap | | | | | | | | | | | | | |
| 13 | FOCUS ON ASSET MANAGEMENT | | | | | | | | | | | | | |
| 13.1 | Develop and implement an asset management plan | | | | | | | | | | | | | Asset management system - Cogsdale ? Evaluate. |
| 13.2 | Develop and implement asset management business processes | | | | | | | | | | | | | |
| 13.3 | Implement asset management system | | | | | | | | | | | | | |
| 13.4 | Develop customer service manual (Service Requirement Handbook) | | | | | | | | | | | | | Tentative 7/1/16 |
| 14 | LEVERAGE GEOGRAPHIC INFORMATION SYSTEMS | | | | | | | | | | | | | |
| 14.1 | Conduct robust GPS-based inventory of assets and infrastructure | | | | | | | | | | | | | |
| 14.2 | Adopt and implement industry standard common information model | | | | | | | | | | | | | |
| 14.3 | Develop and implement business processes for GIS management | | | | | | | | | | | | | |
| 14.4 | Provide GIS training for Engineering and Operations (Add Other Divisions) | | | | | | | | | | | | | |
| 15 | FORMALIZE AND ENHANCE WORK MANAGEMENT | | | | | | | | | | | | | |
| 15.1 | Develop work management business processes | | | | | | | | | | | | | Integrated with asset management plan. |
| 15.2 | Implement modern work management system | | | | | | | | | | | | | |
| 16 | PLAN FOR RESILIENCY | | | | | | | | | | | | | |
| 16.1 | Develop disaster recovery and business continuity plans | | | | | | | | | | | | | Emergency OP Procedure |
| 17 | ENHANCE FACILITIES | | | | | | | | | | | | | |
| 17.1 | Enhance current workspace | | | | | | | | | | | | | On-going. |