

COUNCIL DOCKET NO. UD-17-04

TECHNICAL ADVISORS REVIEW OF ENERGY NEW ORLEANS 2019 RELIABILITY PLAN FILING

Council Resolution R-18-98, adopted on April 5, 2018, initiated a Show Cause Order regarding Entergy New Orleans' ("ENO") electric reliability. This Resolution directed ENO to modify and resubmit its Remediation Plan ("Revised Reliability Plan") filed in Docket No. UD-17-04 including at a minimum: (i) a substantive evaluation and analysis of the root causes of ENO's distribution problems; (ii) ENO's proposed technical and engineering approach to the remediation of its problems; (iii) a time schedule for completion, including proposed construction budget and expenditures by fiscal quarter; (iv) priority and interim projects to quickly alleviate the most severe customer service quality problems; and (v) such other analysis and information as many be required by the Council and its Advisors to evaluate the effectiveness of ENO's proposed plans.

On January 18, 2019, pursuant to Resolution R-18-98, ENO filed its 2019 Reliability Plan ("2019 Plan" or "Plan"). The Technical Advisors have accomplished a review of ENO's 2019 Plan to determine if it is responsive to the Show Cause ordering provisions.

ENO'S 2019 PLAN

ENO's 2019 Plan proposes to invest \$15.4 million in 2019 and approximately \$75 million aggregate over the next five years for baseline reliability improvements to ENO's system. ENO's Plan is designed to complement its Grid Modernization efforts to maximize reliability benefits.

Backbone Program: In conjunction with the Plan, ENO has suspended its Backbone Program for 2019 – 2023. ENO's Backbone Program was initiated as part of ENO's 2018 Revised Reliability Plan. The Backbone Program selected certain backbone distribution feeders for inspection up to the first protective device for accomplishment of reliability improvements. For 2019 - 2023, ENO has replaced this program with its Fix-It-Now ("FIN") Inspection Program.

FIN Program: ENO's FIN Program concentrates on performing visual and infrared inspection of entire distribution feeders to identify potential vulnerabilities and outage threats, and to accomplish necessary repairs in support of operational reliability. In support of this program, ENO established a dedicated four-person FIN reliability crew to accomplish inspections and needed repairs. ENO has also assigned three reliability servicemen to assist the FIN crew for inspections and investigation of prior outages to identify any additional repairs. ENO estimates that in 2018, FIN related work avoided 50,000 customer interruptions. In addition, the Quanta Report¹ recommended that ENO's entire distribution system be inspected within five to eight years. ENO's expanded FIN Program will be responsible for accomplishing this inspection work

¹ On October 31, 2018, Quanta Technology, LLC ("Quanta") submitted its final report titled "Assessment of Distribution Reliability Improvement Initiatives" re: Quanta's review of ENO's distribution reliability program and comparison of ENO's distribution reliability practices vs. industry leading practices, and those of a selected group of high performing utility peers.

to identify and mitigate imminent failures that might occur with six months in order to eliminate such issues.

FOCUS Program: For 2019, ENO has budgeted \$3 million to address specific outage causes through a focused inspection and mitigation program. For the 1st and 2nd quarter 2019 effort, ENO has identified two substation circuit breakers, three reclosers, and five line fuses for focused inspections.

Pole Program: For 2019, ENO has budgeted \$2.7 million, of which \$200,000 is earmarked for pole inspections, \$1.5 million for pole restoration work, and \$1 million for replacement of non-restorable poles. This program is a continuation of ENO's pole inspection/remediation plan initiated in Council Docket No. UD-12-04, and has been contracted to Osmose Utility Services, Inc. ("Osmose"). Osmose has completed inspection of thirty two percent of ENO's poles. ENO notes that its utilization of PoleForeman software has identified the need to install more Class 1 poles to provide greater resilience during major storm events than would result from ENO's historic use of Class 3 poles.

Distribution Automation: For 2019, ENO has budgeted \$2.5 million for the fast-track installation of distribution automation ("DA") devices in conjunction with its Advanced Metering Infrastructure ("AMI") and Grid Modernization programs. Such devices would include advanced reclosers with communications capabilities which would support remote operating capability.

Underground Cable Renewal Program: For 2019, ENO has budgeted \$450,000 for the replacement of existing aging underground distribution cables.

Equipment Inspection Program: For 2019, ENO has budgeted \$200,000 for inspection of all capacitor banks, reclosers, and voltage regulators to ensure timely repair of equipment needed to support ENO's distribution system.

Internal Program: For 2019, ENO has budgeted \$500,000 to address National Electric Safety Code ("NESC") and Entergy Service Standards compliance-related projects.

Exhibit 1 provides further detail regarding ENO's proposals in response to the Quanta Report recommendations.

QUANTA REPORT RECOMMENDATIONS

ENO's 2019 Plan includes a discussion of its efforts to adopt the recommendations contained in the Quanta Report. ENO's major points follow:

- ENO notes that it is working to evaluate and adopt the Quanta Report's recommendations through time.
- ENO is working to achieve a crew dispatch time of ten minutes or less to respond to outages.
- In support of reducing outage durations, ENO has installed 300 fault indicators on its distribution lines to quickly identify and isolate fault locations in order to accelerate restoration of service.

- ENO notes that a number of ENO’s efforts in response to Quanta’s recommendations are being aligned with ENO’s Grid Modernization Program.

Exhibit 1 provides further detail excerpted from ENO’s 2019 Plan regarding its proposed and ongoing activities in response to the Quanta Report recommendations.

Advisors Observations: ENO’s 2019 Plan represents a continuation of the activities accomplished by ENO in its 2018 Reliability Plan. Overall, ENO’s 2019 Plan should positively support ongoing improvements in ENO’s distribution reliability.

From the Advisors’ perspective, ENO’s proposed suspension of its Backbone Program through 2023 with its proposed FIN Program should accelerate reliability gains in comparison to its Backbone Program, as it was limited to only investigating and remediating its distribution feeders up to the first protective device. ENO’s FIN Program is designed to investigate and remediate entire distribution feeders. The Advisors support this replacement program.

Continuation of ENO’s FOCUS Program, Pole Program, Underground Cable Renewal Program, Equipment Inspection Program, and Internal Program makes sense and should support continuing reliability improvement.

To the extent that ENO adopts the Quanta Report recommendations, as detailed in Exhibit 1, such actions should greatly advance ENO’s ability to reduce crew dispatch times, track and identify equipment in need of replacement prior to failure, enhance analysis of reliability performance using additional metrics, and improve outage reporting. ENO’s commitment to fast-track distribution automation projects should reduce the number of customers affected by outages and reduce outage durations.

TRANSMISSION PLAN

For the 2014 - 2018 period, ENO experienced fifty-two transmission outages resulting in customer interruptions. During 2018, ENO experienced fourteen transmission outages. The following table compares ENO’s transmission outage causes 2014 – 2018 to ENO’s transmission outage experience in 2018.

Comparison of ENO Transmission Outage Causes

Outage Cause	2014-2018 (%)	2018 (%)
Asset Condition	70	39
System Configuration	19	30
Human Performance	11	31

As a result of increased transmission system outages in 2018, ENO has initiated the following work:

- ENO has developed a plan to improve its transmission reliability and has reviewed and updated its list of transmission asset candidates for renewal including the addition of transmission level circuit breakers at key substations to reduce customer outage exposure.

- ENO has increased transmission system maintenance activities.
- ENO is evaluating additional technologies that may support proactive identification of impending transmission equipment problems and has initiated actions to eliminate identified human performance traps.

ENO has proposed the expenditure of approximately \$47 million between 2019 – 2023 for transmission related improvement reliability improvements, as shown in the following table:

Projected ENO Transmission Reliability Spending (\$Millions)

2019 – 2023

Category	2019	2020	2021	2022	2023
Substation – Distribution Equipment	4.1	4.5	2.9	3.0	3.0
Substation – Transmission Equipment	2.0	2.2	2.3	2.4	2.1
Transmission Line	1.3	1.0	1.0	1.1	1.1
Transmission System Configuration	3.7	5.5	0.0	3.6	0.0
Approximate Total	11.0	13.2	6.20	10.10	6.2

Advisors’ Observations: ENO’s Transmission Plan represents a significant commitment to replace transmission equipment and reconfigure its system design to reduce the number of transmission outages. This program is overdue and should be supported.

Sewerage & Water Board of New Orleans (“S&WB”) Comments: The S&WB is critical of ENO’s 2019 Plan, primarily in that it does not address certain issues that need to be addressed to improve the reliability of service to the S&WB. The Advisors note that at the February 14, 2019 Council Utility, Cable, Telecommunications and Technology Committee (“UCTTC”) meeting, ENO advised that it is presently working collaboratively with the S&WB on short-term, medium-term, and long-term solutions to increase the reliability of power supply to the S&WB. The Advisors believe that such actions should alleviate the S&WB’s stated concerns.

RECOMMENDATIONS

Based upon the Technical Advisors’ review, we find that:

ENO’s 2019 Reliability Plan meets the provisions set forth in Resolution R-18-98 and provides all the information required by the Council to measure ENO’s performance and adherence to ENO’s proposed project and budgeted expenditure schedules. The 2019 Plan should be accepted by the Council.