Nova Scotia Utility and Review Board

IN THE MATTER OF *The Public Utilities Act,* R.S.N.S. 1989, c.380, as amended

Nova Scotia Power
2023 Annual Performance Standards Report

March 28, 2024

NON-CONFIDENTIAL

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1.0 INTRODUCTION – NOVA SCOTIA POWER'S COMMITMENT TO RELIABILITY

Safely operating a reliable electric system on the edge of the Atlantic Ocean during an ambitious energy transition is complex in a constantly changing environment.

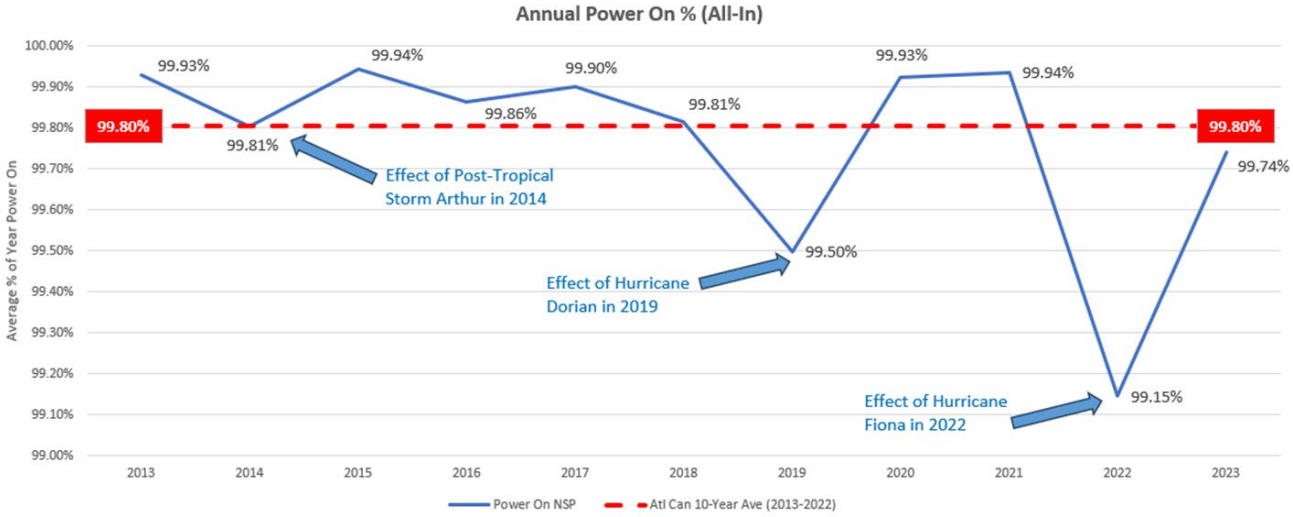
It requires an ongoing balancing of priorities and challenges, but next to safety, nothing is more important for Nova Scotia Power Inc. (NS Power) than ensuring customers have the electricity they count on every day. In the face of rising cost pressures, legislated climate goals, rapidly increasing demand for electricity and more frequent extreme weather events, the team at NS Power is steadfastly focused on enhancing ways to safely improve reliability for Nova Scotians and delivering on that commitment.

Despite the headwinds and the work yet to do, the team at NS Power is making solid progress:

- NS Power has out-performed the Atlantic Canadian Utility average for power availability for eight of the last 11 years, only missing in years when hurricanes Fiona and Dorian and Post-Tropical Storm Lee hit the province. Hurricane Fiona was the most devastating storm to hit Nova Scotia. As noted by the Canadian Red Cross, it provided assistance to nearly 100,000 households, more than any other natural disaster in Canada.[1] As shown in **Figure 1**, the average customer in Atlantic Canada has had power on 99.80 percent of the time over the past decade. While this has been the experience for customers on average, NS Power recognizes there are areas where reliability performance needs to be improved.

[1] https://www.cbc.ca/news/canada/nova-scotia/red-cross-fiona-response-largest-after-canadian-disaster-1.6740054

Figure 1 – NS Power's Reliability Compared to Atlantic Canadian Average



- In 2023, NS Power met all its adverse weather response targets, including achieving a 96 percent restoration rate within 48 hours of a severe weather event day. This is significant given that there were 10 major event days in 2023, compared to an average of 5 major event days annually from 2017-2021.

- Due to NS Power's continued investments to improve reliability we met our reliability targets for all problem feeders in 2023, which is the first time we have met this target since the inception of the Performance Standards in 2017. 93 percent of the problem feeders have been resolved since 2017.

In 2023, we took significant steps on our reliability journey for customers:

- We created a Reliability team with almost 60 existing NS Power employees focused on reliability improvements and added a Director of Reliability and four Reliability Advisors – one for each operating area of the province (Metro, West, the Northeast and Cape Breton), to enhance our approach in the pursuit of improved reliability for customers.

- The average capital investment in our transmission and distribution system for 2023-2025 is approximately $245 million per year, which represents a $30 million annual increase over the 2018-2022 investment period. This step change in reliability investment is aligned with the impacts of climate change that the province has been experiencing.

- The number one cause of outages across the province is tree contacts to power lines. In 2023 we invested $32 million in vegetation management (tree trimming and removal), which is an increase of more than 25 percent over the amount spent each year from 2018-2022. In 2024, we plan to increase our investment in vegetation management by another 40 percent to $45 million and sustain that level of investment for the next several years.

- We are in year two of a robust five-year reliability plan with the goal of improving reliability as we harden the grid and move forward with our transition to clean energy.

- We have hired 11 new planners and 21 wiring inspectors since 2021 and are actively recruiting power line technicians to bring our total to 195 by the end of 2024.

- Nova Scotians have spoken and we have listened. Since June we have had 32 reliability engagements across the province with customers and community representatives.

- We're using technology and innovation such as drones to increase our response times to outages and assess areas where we need to focus on vegetation management and equipment replacement.

- We're investing in upgrades such as stronger poles which can better withstand the elements and not be as impacted by the trees and more robust insulators designed for equipment exposed in coastal areas.

- We have installed 99.9 percent of our planned smart meters in the province, which has enabled us to improve our response times during outages.

- We successfully rolled out a pilot project involving over 100 participants where we installed batteries in customers' homes which kept the power on during outages.[2]

While we are encouraged by this progress, the challenges and work ahead are significant. We know that for our customers who experience outages, we have more work to do. We are on a mission to decrease the number and the duration of outages for Nova Scotians, especially in areas of the province where reliability remains a challenge.

There are three categories of performance standards: reliability (the duration and frequency of outages), customer service response and adverse weather response.

In 2023 NS Power met 11 of the 14 Performance Standards targets, in spite of the weather challenges and the number of storm days. This was a marked improvement over 2022.

[22] https://www.cbc.ca/news/canada/nova-scotia/nova-scotia-power-battery-backup-test-homes-storage-1.7140422

2.0 2023 PERFORMANCE STANDARDS IN CONTEXT

The Performance Standards are a key part of our accountability to customers in NS and part of the system of strong regulatory oversight. NS Power has been filing reports on aspects of its reliability and performance with the Nova Scotia Utility and Review Board (NSUARB) since 2017. Each year, NS Power files an annual Performance Standards Report which provides information about reliability, storm response, and customer service. NS Power also provides detailed information reports following each weather-related outage affecting 30,000 or more customers. The Company's website also includes a section on Performance Standards, including a report card showing the performance results for the most recent quarter.

2.1 Reliability Solutions

NS Power is listening to customers' concerns and has a robust plan to address reliability in the province. This plan factors in the challenges of increased demand, more severe weather and the need to meet government's clean energy goals. While some of these initiatives take longer to implement than others, NS Power is working on solutions to improve performance and support customers.

Dedicated Resources

- NS Power is strategically increasing resources across the business to improve reliability and customer service for customers.

- In 2023 NS Power created a dedicated Reliability Team with almost 60 existing NS Power employees and added a Director of Reliability and four Reliability Advisors – one for each operating area in the province (West, Metro, the Northeast, and Cape Breton), with emphasis on stakeholder engagement and optimizing investments in vegetation management and other reliability initiatives. The Reliability Team's mandate is to focus exclusively on improving reliability by effectively executing on the increased investment in reliability work and working with communities to identify issues and work towards solutions. The Reliability team is executing an enhanced five-year

reliability investment plan and ensuring the plan is aligned with customer feedback and needs. That plan was implemented in 2023 and will continue for another four years.

- Since 2020, there has been a 52 percent increase in the volume of customer-requested work (e.g. renovation connections/disconnections, new home and building connections and requests for line extensions). In response to this significant increase in customer-requested work, NS Power is also hiring more Power Line Technicians (PLTs) and wiring inspectors. NS Power has recently hired 21 wiring inspectors which brings the total to 45 inspectors across the province. This has resulted in inspection times dropping from an average of three to five weeks to an average of less than two weeks over the past year. Joint work with the Department of Labour, Skills and Immigration on implementation of an audit model will further improve these inspection times. From 2021 to 2023, NS Power also hired 11 additional planners.

- As part of its overall reliability planning, NS Power is streamlining inspection processes to remove some of the pain points and wait times for customers.

More Outreach, Communication and Collaboration

- The NS Power team has been working more closely with the communities we serve. Customer and stakeholder communication about reliability initiatives and work currently underway is part of NS Power's plan for identifying and addressing issues. As noted in **Figure 25,** NS Power has been doing engagement sessions in all areas of the province over the past year, and also conducted a vegetation management media panel in August 2023 so that members of the local media could learn more about the ongoing focus on reliability.

- Proactive communication about outages and reliability issues is a priority, including a Storm Communications initiative that features reliability messages on social media focusing on storm preparedness, outage prevention and the work being done by NS

Power's teams. During storms, these messaging channels focus exclusively on storm-related information to ensure customers are kept informed.

Increased Capital Investment

- Increased capital spending on reliability programs continues to be a focus of NS Power's Annual Capital Expenditure (ACE) Plan each year. In 2023 NS Power completed approximately 75 reliability-related projects and spent $232 million on reliability investments in the transmission and distribution system. This investment brings NS Power's total investment in the transmission and distribution system to $687 million over the past three years. Reliability investments include the replacement of deteriorated equipment, vegetation management and upgrading equipment to storm harden the system in the face of climate change. NS Power expects that the increased level of reliability investment it has seen in recent years will be sustained over the next four to five years. Over the next four years NS Power is planning to invest approximately $250 million annually in the transmission and distribution system as part of its plan to improve reliability for customers. Together, these investments will help improve reliability in communities across the province.

Vegetation Management

- Vegetation management, including enhanced vegetation condition assessments, is an area of significant investment each year. This is critical, as tree contact with power lines is the primary reason for outages. Vegetation management also includes agreements with landowners (the province and municipalities) about the types of trees which should be planted near power lines to avoid future tree contacts. Drones are also being used to target areas where vegetation management needs to be prioritized, and NS Power is investigating other innovative technologies like satellite imagery to further enhance its vegetation management program.

- This focus on vegetation management also includes an increase in investment from approximately $25 million per year on average from 2018-2022, to $32 million in 2023,

and further increasing to $45 million in 2024 and beyond. There has been a corresponding increase in the number of vegetation crews to approximately 45 to 65 in 2023 with a further anticipated increase to 80 to 85 crews before the end of Q4 2024.

- Through meeting regularly with stakeholders including local governments, NS Power is also actively working to gain permission from landowners, customers and communities to cut and remove trees near power lines and increase rights-of-way and the proximity of trees to the power lines.

- The reliability upgrades and investments in vegetation management over the last five years continue to improve reliability of service for customers in areas where these interventions are being made. For example, feeders with widened and re-established rights-of-way are performing better. Without these investments in right-of-way widening, the increased frequency and intensity of wind and storms would have caused SAIDI and SAIFI to increase. These investments have enabled SAIDI and SAIFI performance to remain relatively stable in the face of more frequent severe weather.

Upgrades to Feeders and Equipment

- Each year as part of the ACE plan, NS Power files Problem Feeder Reliability Plans to identify the steps to be taken to improve reliability for specific problem feeders, such as bringing the lines closer to roadsides for better access, and installing equipment designed to withstand harsh weather conditions.

- The Company is developing enhanced information about each feeder by combining load information, outage data, device performance data and equipment condition, which allow for targeted upgrades and replacement of equipment and devices.

- NS Power identifies asset health and uses data and analytic tools for insights into system performance, such as identifying poles and transformers to be replaced. In concert with

this, enhanced distribution engineering standards are being employed as part of storm hardening the power system.

Technology and Innovation

- NS Power is using updated technology and innovation to assist with its reliability planning. It uses up-to-date climate information for transmission line design and to assess flood risks, storm surge and increased sea level impact on critical assets. Overhead line design standards have also been updated to account for the latest climate projections.

- There has been an increase in the use of drones to collect data about the condition of lines and feeders. Drones are also deployed during situations such as wildfires to identify risks to the power system and following storm events for damage assessment.

- As part of its energy transformation, NS Power is pursuing system hardening through grid modernization and stability. This includes a focus on battery storage and micro grids to ensure customers have access to power even during storm events. These initiatives will result in better performance for customers and could lead to new customer offerings in future.

- In 2023, NS Power activated a new self-healing smart recloser system in Dartmouth that will automatically isolate faults on power lines (like those caused by trees contacting power lines) and restore most of the affected customers in seconds.

2.2 Continued Challenges

While the important work on reliability is ongoing, it is important to understand the challenges ahead.

Increasingly Extreme Weather

- Climate change is impacting Nova Scotia in a very real way. One of the most significant changes over the last decade has been the change in weather patterns and storms which

are increasing in frequency and intensity. In 2023, Nova Scotia experienced a hurricane, a record-breaking cold snap, wildfires, historic flooding, and unmatched daily lightning strikes. Historically, tropical storms and hurricanes making landfall in Nova Scotia were less frequent occurrences, but in the last five years (2019-2023) Hurricanes Dorian and Fiona and Post-Tropical Storm Lee all significantly impacted the province. The province is also experiencing increasingly more heavy wet snow and high winds over 80 km per hour. The high winds and snow break branches and trees which then come into contact with the power system, causing outages. The average number of hours of wind gusts over 80 km per hour in the last five years has increased significantly relative to what was being experienced 15-20 years ago. Between 2005 and 2009 the average number of hours of wind gusts above 80 km per hour was 53 hours per year. Over the past five years (2019-2023) the average number of hours of wind gusts above 80 km per hour was 130 hours, an increase of 145 percent above the 2005-2009 period. With this changing weather, NS Power's response is also changing: the Company is proactively preparing and responding to significantly higher demands than were common five to ten years ago.

- NS Power opened its Emergency Operations Centre (EOC) for 99 days over the past five years. This is more than double the amount of time the EOC was open during the previous five-year period (2013-2017). The number of storms and their intensity is increasing, and the damage caused by these storms is more extensive. Hurricane Fiona, which occurred in September 2022, is an example of this: the after-effects of that hurricane continued to contribute to outages in 2023 due to trees and infrastructure weakened by the significant hurricane-force winds.

- Restoration efforts are hampered by increasingly high winds during nor'easters, winter storms, tropical storms and hurricanes, as field teams cannot safely carry out work when winds are gusting at 80 km/h or above. This can mean a delay of up to 12 hours or more before any restoration efforts can safely begin. While operating within the established safety protocols and procedures, NS Power met all of its adverse weather response

targets in 2023, including a 96 percent restoration rate within 48 hours of a severe weather event day.

Resource Demands

- When a storm hits, NS Power's focus is on responding to the storm and safely restoring customers' electricity as expediently as possible. Depending on the level and extent of the storm, that means some or most of the planned customer and capital work is paused until all customer outages have been restored from the storm. This has created some delays in new service connection times and other work orders, particularly after major storms when damage was more severe.

- Resource constraints, global demand for PLTs and scarcity of available powerline technicians have also affected NS Power's ability to meet its performance obligations. NS Power is engaged in a North America-wide recruitment effort for powerline technicians, but utility demand for this skillset across the continent is challenging those efforts. NS Power is also working closely with the Nova Scotia Community College to hire additional apprentice PLTs to address future increases in work volumes. With extensive recruitment efforts in 2023, NS Power maximized its existing resource pool of PLTs while continuing to do everything possible to increase PLT staffing levels. As part of these ongoing efforts, NS Power is working on solutions to these resource issues, which are not entirely within the Company's control. NS Power is striving to increase the level of PLTs to 195 in total by the end of 2024 to achieve all the work demands that are anticipated.

- Nova Scotia is experiencing unprecedented population growth, and although this is economically desirable, it puts pressure on the amount of electrical work for businesses and homes that needs to be done. This delay in regularly scheduled work has been compounded by the unprecedented growth in population and development in Nova Scotia. There has been a 52 percent net increase in customer work since 2020. This equates to a compound annual growth rate of 13 percent per year. This work includes

renovation connections/disconnections, new home and building connections and requests for line extensions.

- While customer growth is increasing the need for additional PLT resources in the province, there are other competing priorities that are also drawing on the demand for this critical resource. NS Power is also a full participant in the province's rural internet broadband program, as the majority of new fibre installations are being installed on NS Power's poles. This has led to significant work for NS Power's field teams to ensure that all public safety requirements are met. This customer growth has also led to a 50 percent increase in work volume for PLTs that otherwise could have been deployed to complete reliability-based improvement work.

Balancing interests

- As inflation and cost pressures continue persist, NS Power understands the challenges facing Nova Scotians. The challenges associated with transforming a utility in this rapidly changing climate must be addressed in a way which balances the interests of customers, the utility and the government. As NS Power continues to work to improve reliability and resiliency of the power system, while meeting governments' climate change goals and managing unprecedented customer growth, the work must be done at a pace which balances the cost for customers with the best reliability results possible. As such, NS Power's reliability improvement plan is forecast over a five-year period to introduce measures each year in a way which helps to manage costs for customers.

2.3 Performance Results in Context

In the face of escalating weather, SAIDI and SAIFI have remained steady over the past five years. This shows that NS Power's reliability investments are having an impact.

NS Power is pleased that all problem feeders tracked under the CKAIDI and CKAIFI metrics met their targets in 2023. As NS Power implements a reliability action plan for a problem feeder, the feeder realizes a corresponding improvement in outage performance over time. Of

the 27 feeders on the problem feeder list since 2017, 25 are no longer in the top five percent of worst performers. This means that 93 percent of problem feeders have been resolved to date and is evidence of the success of NS Power's investment programs and commitment to improve reliability on problem feeders.

NS Power is proud to be present in every community in the province and listens to and engages with customers and community stakeholders to ensure the plan to improve reliability is aligned with customer needs. Improving reliability and meeting performance standards continues to be the priority.

2.4 History and Background of Performance Standards

In 2015 the *Electricity Plan Implementation (2015) Act* (EPIA) introduced the requirement for the NSUARB to establish performance standards for NS Power in the areas of customer service, reliability, and response to adverse weather conditions and sections 52A to 52F of the *Public Utilities Act* (PUA) set out the framework for the standards. In 2016, the NSUARB initiated a process and engaged a consultant, London Economics International LLC (LEI), to assist in the development of those standards. At the conclusion of the process, the NSUARB approved 13 performance standards which were in effect for the period 2017-2021.[3]

In its order approving those standards, the NSUARB directed NS Power to provide an annual report summarizing the year-to-date results of the performance standards and file a report within 90 days of December 31 of the preceding year, containing the following information:

- A comparison of performance targets and actual performance results;
- Detailed summary of all Major Event Days (MED) and Extreme Event Days (EED) during the year outlining the following:
  - (i) SAIFI and SAIDI during the event;
  - (ii) Restoration profile;
  - (iii) Restoration challenges;

[3] M07387, NS Power Performance Standards, NSUARB Order, December 20, 2016.

(iv) Customer service results;

(v) Crew Information; and

(vi) Media Releases;

- Details regarding the duration and frequency of all system and circuit planned outages; and
- Revised performance targets for the next ensuing year, and their derivation.[4]
- To report on the progress of the development of customer-level reliability data through the ADMS system in the 2022 Performance Standards Report, including any other available information from other CEA utilities on this topic; and
- To monitor related emerging technologies and to report on updates to the ETR processes in its further annual reports.[5]

Following the NSUARB review, the standards remained relatively unchanged, with the exception of the addition of the outage analysis reports under the Customer Service Standards. Each year, the Board approves the standards for the following reporting period.

This report provides NS Power's 2023 Performance Standards results as well as the proposed performance targets for 2024. NS Power welcomes Performance Standards as part of the strong regulatory oversight of the business. Performance Standards provide the transparency and accountability customers deserve.

2.5 Summary of NS Power's Results

The 2023 Performance Standards and NS Power's year-end results are summarized in **Figure 2** and **Figure 3** below. The results by category are included as **Appendix M**. There are three

[4] M07387, NS Power Performance Standards, NSUARB Order, December 20, 2016.
[5] M10279, NS Power Performance Standards, NSUARB Order, April 7, 2022.

categories of performance standards: reliability (the duration and frequency of outages), customer service response and adverse weather response.

Reliability metrics are measured on a system-wide basis and on a per-feeder (circuit) basis. SAIDI is the measure of system-wide outage duration, SAIFI is the measure of system-wide outage frequency, CKAIDI is the outage duration on specific circuits, and CKAIFI is the outage frequency for specific circuits.

Customer service metrics measure the percentage of regular business calls answered within 30 seconds during regular business hours, the percentage of customer bills which are estimated without an actual meter read, the time it takes to notify customers of outages, and the time it takes for various types of new customer service installations.

The adverse weather response metrics include timely notification of the Emergency Operations Centre, the percentage of calls answered within 45 seconds during a severe outage event, the percentage of polite disconnects (when all available phone lines are busy), filing outage reports for storms which affect at least 30,000 customers, information about estimated restoration times, and the percentage of customers restored within 48 hours of a storm.

In 2023, NS Power met all its performance standards except SAIDI, SAIFI and the time for new customer installations.

Figure 2 – 2023 Performance Standards Met

Category	Standard	Target	2023 Result
Reliability	CKAIDI	16.98	22C-402 Achieved 8.11
			11S-411 Achieved 16.87
	CKAIFI	5.81	22C-402 Achieved 2.97
			11S-411 Achieved 5.32
			62N-413 Achieved 4.77

Category	Standard	Target	2023 Result
Customer Service Response	Regular Business Call Answer Rate	A minimum of 70% of calls shall be answered within 30 seconds at NS Power's Customer Care Centre.	76.30%
	Percentage of Bills Estimated	≤2.0	0.7%
	Customer Notification of Outages	Notify all customers of an outage as soon as NS Power has knowledge of an outage event.	Target Met
	New Service Connection Times	Service Installation Line Extension ≥ 10 Poles: ≤ 18.1 days.	14.12 days
Adverse Weather Response	Notification of EOC Opening	NS Power to notify customers of the decision to open the EOC within 4 hours of the decision to open.	Target Met
	Outage Call Answer Rate	A minimum of 85% of calls answered within 45 seconds at Customer Care Centre during	January 26-28: 97.74%
			February 4-7: 96.76%
			July 21-25: 96.20%
			September 16-21: 99.8%

Category	Standard	Target	2023 Result
		severe outage events.	December 11-14: 99.75%
			December 18-21: 98.09%
			December 21-23: 99.30%
	Polite Disconnects	10% or less annually.	1.61%
	Outage Report	Within 75 days for an EED or MED and 45 days for a SED	January 16 SED: Target Met January 26-28 MED: Target Met February 4-7 MED: Target Met July 21-25 MED: Target Met September 16-21 EED/MED: Target Met November 27-28 SED: Target Met December 11-14 MED: Target Met December 18-21 MED: Target Met December 21-23 MED: Target Met
	ETR Updates without delay	ETR updates provided without delay.	Target Met
	Percent Customers restored in 48 hours	Significant Event Days: 95.05% of customers restored within 48 hours.	N/A*

Category	Standard	Target	2023 Result
		Major Event Days: 91.98% of customers restored within 48 hours.	January 26: 99.99% February 4: 99.99% July 21: 99.49% July 22: 99.42% September 17: 94.87% December 11: 98.67% December 18: 97.26% December 19: 99.72% December 21: 99.88%
		Extreme Event Days: 78.38% of customers restored within 48 hours	September 16: 96.40%

*Only SEDs which fall after an MED or EED are considered under this metric. There were five SEDs throughout 2023 but they did not fall immediately after a MED or EED.

Figure 3 – 2023 Performance Standards Not Met

Category	Standard	Target	2023 Result
Reliability	SAIDI	≤4.29	5.21
	SAIFI	≤2.05	2.18
Customer Service Response	New Service Connection Times	Service Installation No Pole: ≤ 3.0 days.	3.39 days
		Service Installation Pole or Transformer: ≤ 4.9 days.	5.67 days
		Service Installation Temporary to Permanent: ≤ 3.2 days.	3.86 days
		Service Installation Line Extension < 10 Poles: ≤ 6.2 days.	7.68 days

Additional detail and supporting documentation regarding the 2023 Performance Standards results are provided below.

3.0 PERFORMANCE STANDARDS RESULTS

3.1 Customer Service Standards and Targets

In 2022, the NSUARB approved the following metrics associated with the customer service performance standards for 2023:

(i) Percentage of calls answered within 30 seconds

(ii) Percentage of customer bills that may be estimated

(iii) Customer notification of outages

(iv) New service connection times[6]

The 2023 results for each of these metrics are detailed below.

3.1.1 Percentage of calls answered within 30 seconds

The following description of this standard and the applicable target are set out in Appendix A to the NSUARB's 2022 Order:

> ***Metric*:** Calls answered refers to telephone calls that are answered by a customer service representative after a caller asks to speak to a representative. The wait time associated with the "calls answered" metric is from the time the customer asks to speak to a representative to the time that the call is answered by a representative. Calls answered using an automated system are not included in the estimation of the metric, if a customer chooses to speak to a customer representative. Alternatively, if a customer chooses an automated system, those calls are included in the calculation of this metric.
>
> ***Benchmark:*** A minimum of 70 percent of telephone calls shall be answered within 30 seconds at NSPI's customer care center (under normal conditions - i.e., excluding severe weather conditions, where the adverse weather response benchmark will apply). This benchmark shall be fixed for the 2022 to 2026 period.[7]

[6] M10279, NS Power Performance Standards, NSUARB Order, April 7, 2022, Appendix A, page 6.
[7] M10279, NS Power Performance Standards, NSUARB Order, April 7, 2022, Appendix A, page 6.

In 2023, NS Power's Customer Care Centre received 982,343 calls from customers during regular business (i.e. excluding severe weather conditions, when the adverse weather response benchmark applies). 76.30 percent of these customers received an answer within 30 seconds, meeting the performance target of 70 percent for the year. Supporting data, including a monthly breakdown of the target, is contained in **Appendix A**.

In its decision on the 2017 Annual Performance Standards Report, the NSUARB directed as follows:

> Regarding percentage of estimated bills, although the target has been established as an annual goal, it would be informative to understand the reasons why that target has been exceeded in a specific month. NSPI is directed to provide such explanations in its future annual reports. In addition to estimated bills, this requirement also applies to other metrics, such as percentage of calls answered within 30 seconds, new service connection times, percentage of customers restored within 48 hours of a severe weather event, percentage of calls answered within 45 seconds during a severe outage event, and percentage of polite disconnects for all outage calls.[8]

The overall percentage of calls answered within 30 seconds meets the target for 2023, with 11 out of the 12 months meeting the target as shown in **Figure 4**.

Figure 4 – Monthly Percentage of Calls Answered within 30 Seconds

	Total Interactions	Service Level MTD (Percentage)	Service Level YTD (Percentage)
January	103,449	73.15	73.15
February	78,666	69.83	71.72
March	69,851	75.43	72.75
April	64,271	74.24	73.05

[8] M08574, NS Power 2017 Annual Performance Standards, NSUARB Decision Letter, May 1, 2018, page 6.

	Total Interactions	Service Level MTD (Percentage)	Service Level YTD (Percentage)
May	84,018	71.91	72.81
June	86,506	74.75	73.16
July	71,974	76.79	73.63
August	81,438	77.42	74.11
September	74,319	78.38	74.55
October	73,708	66.74	73.82
November	75,274	77.43	74.14
December	118,869	92.73	76.36
Total	982,343		76.36

As shown in **Figure 4** above, NS Power's Customer Care Centre received almost one million calls from customers during regular business operations in 2023. Customer-driven work increased by 28 percent over the past three years, which impacts call volume as customers call to set up new accounts and understand the connection process. Customer-driven work includes items such as renovation connections/disconnections, new homes and building connections and requests for line extensions.

NS Power met the target of 70 percent of calls answered within 30 seconds in all months except October. Post-Tropical Storm Lee, which made landfall on September 16, 2023, triggered restoration efforts that continued until September 21 with crews engaged in storm clean-up and feeder sweeps for days later. This led to the need for work to be rescheduled via calls to the Customer Care Centre. This additional backlog resulted in the October regular business call answer rate finishing below the 70 percent target.

NS Power has a responsibility to serve customers effectively while managing costs. The Customer Care Centre is staffed to meet the annual target of 70 percent of calls answered within 30 seconds. As the Customer Care Centre is staffed to meet the annual target, the actual result at any given time could be higher or lower than the 70 percent target.

NS Power continues to review call patterns to improve scheduling and agent efficiency so that it can continue meeting service level targets and provide a positive customer experience.

3.1.2 Customer Bills Estimated

The following description of this standard and the applicable target are set out in Appendix A to the NSUARB's Order:

> ***Metric:*** NSPI may on occasion need to estimate a customer's bill if the customer's meter cannot be accessed, and accurately read. For example, during winter months, snowfall and icy conditions create difficulties getting access to meters. This causes NSPI to estimate the bill for the customer or facility whose meter they could not access. When NSPI crews can access the meters, the customer's bill is then adjusted retrospectively to reflect the actual meter reading.
>
> ***Benchmark:*** As a percentage of total bills, no more than two percent of customer bills shall be estimated annually. This benchmark shall be fixed for the 2022 to 2026 period.[9]

The Customer Bills Estimated rate in 2023 was 0.7 percent, achieving the NSUARB's target of less than 2 percent annually. The target was also met in each month of the year.

Supporting data, including a monthly breakdown of performance against the target, is contained in **Appendix B**.

[9] M10279, NS Power Performance Standards, NSUARB Order, April 7, 2022, Appendix A, page 6.

3.1.3 Customer notifications of outages

The following description of this standard and applicable target is set out in Appendix A to the NSUARB's Order:

> ***Metric/Benchmark*:** NSPI shall notify all customers of an outage event as soon as NSPI has knowledge of the outage event. This notification shall be followed up with prompt updates on restoration status of the outages. Channels used to communicate this information shall include NSPI's live outage map, social media and automated messaging.[10]

In 2023 customers had uninterrupted access to outage notifications through NS Power's live outage map, High Volume Call Answer (HVCA) system and the Company's social media sites, achieving the NSUARB's target for this performance standard. The HVCA system is equipped on the toll-free outage line and is designed to answer up to 40,000 customer calls per hour immediately without any holds or delays. The Company also maintains contingency sites which include a backup outage map and customer outage information in tabular format if a primary outage communication system is offline.

Figure 5 below shows the availability of outage communication systems in 2023. The Advanced Distribution Management System (ADMS), the system that creates outage events from customer calls, and the Supervisory Control and Data Acquisition (SCADA) notifications to ADMS were available over 99.6 percent of the time during in 2023. The Outage Map was available 99.8 percent of the time.

ADMS and outage map system downtime was due to regular planned system maintenance and the installation of operational patches, which are a normal part of maintaining large operational software systems. Planned maintenance is coordinated to avoid times when weather might pose a risk to the power system.

[10] M10279, NS Power Performance Standards, NSUARB Order, April 7, 2022, Appendix A, page 6.

Figure 5 – System Availability for Customer Notification of Outages 2023

	% of Hours System was available	% of hours System was unavailable
ADMS	99.9	0.1
Outage Map	99.8	0.2
Data Network	99.9	0.1
HVCA	99.9	0.1
Social Media	100	0
Contingency Plan Activated	0.34	n/a

Additional detail on system availability is contained in **Appendix C**.

3.1.4 New Service Connection Times

The following description of this standard and the applicable target are set out in Appendix A to the NSUARB's Order:

> ***Metric:*** The amount of time taken to establish a new service connection provides a valuable gauge of NSPI's customer service and its ability to provide/establish electrical service within a reasonable time frame. There are 5 different types of service level metrics that are measured, and each of these [has] specific targets for NSPI to meet.
>
> ***Benchmark:*** The targets for this metric will be set based on a 5-year rolling average plus 1 SD approach, and reset each year. This metric includes a two-day service delivery floor (ie, no service delivery time will be due less than 48 hours from the time of the request). However, within a 5-year review period (i.e., 2022-2026), targets for any subsequent year (e.g. 2023 target) must be equal to or better than the prior year's target (e.g. 2022 target). [11]

[11] M10279, NS Power Performance Standards, NSUARB Order, April 7, 2022, Appendix A, page 7.

Similar to reliability metrics such as SAIDI and SAIFI, benchmarks for new service connections are also set for normal conditions, i.e., excluding data for MEDs and EEDs.

Figure 6 below identifies the targets for new service connection times (under normal conditions) applicable for 2023, based on NSPI's historical data for the period 2018 to 2022.

Figure 6 – 2023 Targets for New Connection Standards

Service Installation Type – 2023 Targets*				
No Poles	**Pole or Transformer**	**Temporary to Permanent**	**Line Extension < 10 Poles**	**Line Extension ≥ 10 Poles**
≤ 3.0 days	≤ 4.9 days	≤ 3.2 days	≤ 6.2 days	≤ 18.1 days

*Exclusion: When NS Power experiences MEDs and EEDs (as defined using the IEEE 1366-2012 Standard 2.5 and 3.5 Beta methodology respectively), in assessing new service connection times, NS Power shall be allowed to exclude: (i) MEDs and 7 days following MEDs, and (ii) EEDs and 14 days following EEDs, to allow for time needed to return to normal conditions.

NS Power met the standard for the service installation "line extension ≥ 10 poles" in 2023 but did not meet the service installation standard for "no pole," "pole or transformer," "temporary to permanent" and "line extension < 10 poles."

The 2023 results for new customer connections set out in **Figure 7** below are measured after all customer requirements have been completed (i.e. securing easements, issuance of permits, customer tree trimming, underground infrastructure locations).

Figure 7 – 2023 Results for New Service Connection Times

Number of Business Days per Service Installation Type					
	No Pole	**Pole or Transformer**	**Temporary to Permanent**	**Line Extension < 10 Poles**	**Line Extension ≥ 10 poles**
2023 Target	3.0	4.9	3.2	6.2	18.1
2023 Result	3.39	5.67	3.86	7.68	14.12
Variance	0.39 days (9.4 hours)	0.77 days (18.5 hours)	0.66 days (11.1 hours)	1.48 days (35.5 hours)	n/a

NS Power did not meet the New Service Connection Targets in some months because of the volume of work orders and the challenge of resource availability. Efforts to recruit more resources and complete customer work as quickly as possible were ongoing throughout the year and will continue as the Company continues to strive to meet the challenging performance standard targets.

One of NS Power's top priorities is to meet the new service connection standards and the Company is committed to exploring all avenues in 2024 to address the following factors which are challenging the Company's ability to meet the targets. Additional detail follows on each of these factors.

- Unprecedented Growth in Work Volume
- Resource Recruitment challenges
- Increase in Customer-Driven Work
- Rural Internet Program
- Wildfires and Flooding

Unprecedented Growth in Work Volume

Nova Scotia's population is growing significantly.[12] and NS Power has experienced a 52 percent increase in customer-driven work in 2023 over 2020 as shown in **Figure 7**. Further, NS Power has experienced a 28 percent increase in the hours required for customer-driven work since 2021, with a 20 percent increase in new customer work volumes over 2022.

In 2023 make-ready work for the Province's Internet for Nova Scotia Initiative, which required PLT resources, also increased significantly. NS Power is a full participant in this important program. As most new fibre installations are being installed on NS Power's poles, this has led to significant work for field teams to ensure that all public safety requirements are met.

Throughout this period, internal PLT resources have remained constant. These efforts to recruit more resources and complete customer work as quickly as possible will continue as the Company continues to strive to meet the challenging performance standard targets.

One of NS Power's top priorities is to meet the new service connection standards and the Company is committed to exploring all recruitment avenues in 2024 to address the increased volume of customer-driven work.

Resource Recruitment Challenges

During 2023 NS Power continued to work with contract resources to carry out line work. However, the availability of contract labour has been challenged to offset the additional resource requirement created by the recent 28 percent increase in customer-requested work volume. At this time, NS Power has maximized the existing pool for PLTs and continues to do everything possible to increase access to available resources. NS Power has engaged in a North America-wide recruitment effort for PLTs, but utility demand for this skill set is high across North America and NS Power is competing with other utilities for recruitment of new

[12] Nova Scotia's population is suddenly booming. Can the province handle it? | CBC News

PLTs. However, NS Power has made progress on hiring additional Regional Planners and Wiring Inspectors and will continue hiring PLTs going forward. NS Power is also working with Nova Scotia Community College (NSCC) to hire more apprentice PLTs to address future growth in customer work as well. NS Power has committed to hiring 8-10 PLT graduates from NSCC each year for the next five years. NS Power will continue to prioritize available resources and look at innovative and alternative options to ensure all performance standards are met.

Increase in Customer-Driven Work

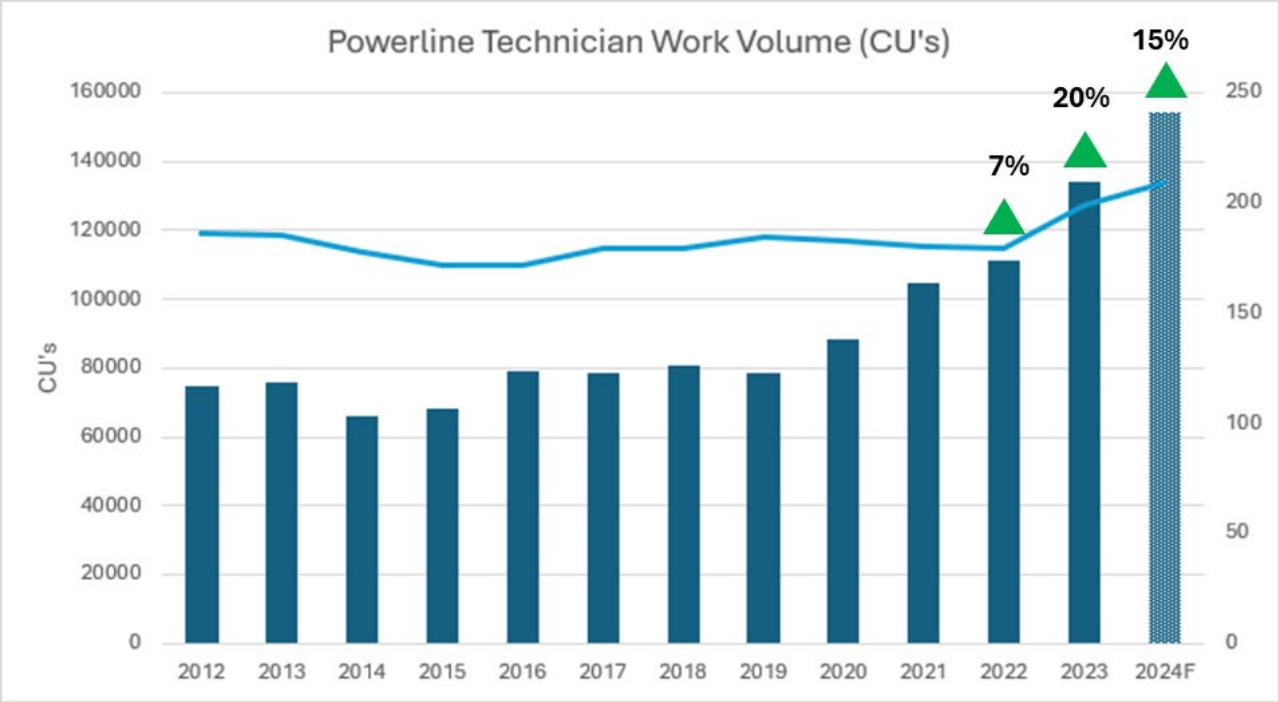
Figure 8 shows customer-driven work volume over the past 10 years for PLTs. This includes new service connections, renovations, and other service-level work. This work volume does not include outage calls, storm work, or reliability projects, which have all also increased over the last three years. The increase in work volumes equates to a compounded annual growth rate of 11 percent over 2018-2023, with the forecast level of work volume in 2024 almost double what it was five years ago. Additional resources are required to meet this unprecedented increase in demand, particularly when considering all the other types of work beyond customer-requested work such as annual capital projects, reliability work, make-ready work for the Internet for Nova Scotia Initiative, and environmental compliance work. Energy Delivery[13] has successfully added 11 new planner positions and 21 new wiring inspectors since 2021 and is recruiting now to increase the PLT complement from 165 to 195 in 2024. Although 20 PLT roles were hired in 2023, retirements and attrition have offset these resource gains. In addition to the recruitment of new Wiring Inspectors, NS Power is also working collaboratively with the Department of Labour, Skills & Immigration on ways to streamline the overall electrical inspection process in order to reduce the volume of inspection work going forward.

[13] Energy Delivery is the operations unit at NS Power formerly known as Transmission & Distribution.

Rural Internet Program

Approximately 34 contractor Power Line Technicians (approximately 65 percent of NS Power's contract PLT resource pool) are presently allocated to the Internet for Nova Scotia Initiative. NS Power is a full participant in the province's rural internet program, but the impact of allocating approximately 65 percent of the contract power line technician workforce to this initiative has reduced the number of resources available to complete new customer connections and other work focused on improving reliability for customers.

Figure 8 – Powerline Technician Work Volume vs Available Resources



Year	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024F
CUs of Work (thousands)	74.6	75.9	66.1	67.9	78.9	78.8	80.5	78.5	88.2	104.5	111.5	134	154
% Change		+2	-13	+3	+16	0	+1	-2	+12	+18	+7	+20	+15

Wildfires and Flooding

In addition to the challenge resulting from the increase in customer-driven work, 2023 was further challenged by the impact of the wildfires and flooding throughout the summer, extraordinary incidents of lightning strikes and Post-Tropical Storm Lee in September. NS Power field resources responded to support their communities to assist customers during the wildfire and flooding incidents and to restore power during large scale events like Post Tropical Storm Lee. After these events, crews were engaged in the associated feeder sweeps and clean-up activities. This important work was completed safely and promptly.

The combined impact of these challenges led directly to NS Power's inability to meet four of the targets for New Service Connection times in 2023. Despite work volumes increasing by over 50 percent, the established targets were only narrowly missed by a margin of 0.39 to 1.48 days. The coordinated efforts of the Energy Delivery Scheduling team and operational teams have reduced the customer impact of this unprecedented increase in work volumes.

Additional detail on New Service Connection Times Results is contained in **Appendix D**.

With respect to New Service Connection times, the role of the Energy Delivery Scheduling team at NS Power is to schedule customer work in the most efficient and productive way possible. Each work order is presented with parameters establishing its priority and any outstanding requirements necessary for execution. Resources are allocated to scheduled work orders based on each work order's priority, which can vary based on safety considerations and commitments to other overall work volumes or priorities for organizations such as Nova Scotia Department of Public Works, commitments to local municipalities, or service delivery commitments.

3.2 Adverse Weather Response Standards

The NSUARB approved the following metrics associated with adverse weather response standards:

(i) Customer notification of an oncoming severe weather event within a specific time frame;

(ii) Percentage of calls answered within 45 seconds during a severe outage event;

(iii) Polite disconnect rate for all outage calls;

(iv) Estimated Time to Restore (ETR) updates communicated to customers during an outage; and

(v) Percentage of customers restored within the first 48 hours of a severe weather event - separately for Major Event Days (MEDs) and Extreme Event Days (EEDs) and Significant Event Days (SEDs) if the SEDs were excluded from normal conditions as the second 24-hour event, as discussed in Exclusions associated with reliability performance standards.

(vi) Outage Report for adverse weather events impacting ≥30,000 customers.[14]

The 2023 results for each of these metrics are detailed below.

3.2.1 Notification of an oncoming severe weather event

The following description of this standard and the applicable target are set out in Appendix A of the NSUARB's Order:

> ***Metric:*** All NSPI customers shall be notified of an oncoming severe weather event within a specified number of hours of NSPI having knowledge of the oncoming inclement weather. The notifications shall be provided to all customers using multiple channels, such as the NSPI website, social media and automated messaging.
>
> ***Benchmark:*** NSPI shall notify all its customers within 4 hours of NSPI's decision to open the NSPI Emergency Operations Centre. This benchmark shall be fixed for the 2022 to 2026 period.[15]

NS Power opened the Emergency Operations Centre (EOC) on four occasions in 2023 for a total of 16 days, as detailed in **Figure 9** below. On each occasion, customers were notified

[14] M10279, NS Power Performance Standards, NSUARB Order, April 7, 2022, Appendix A, page 3.
[15] M10279, NS Power Performance Standards, NSUARB Order, April 7, 2022, Appendix A, page 4.

within four hours of the decision to open the EOC. Supporting documentation is provided in **Appendix E**.

Figure 9 – Notification of the Opening of the EOC

Decision to open EOC	Notification to Public
July 22 at 05:00	July 22 at 08:00
September 13 at 16:14	September 13 at 18:31
October 5 at 15:40*	October 5 at 09:23
December 10 at 16:02	December 10 at 18:00
December 16 at 16:13	December 16 at 16:40

*Although the EOC was activated for the October 5, 2023 event based on pre-storm weather forecasts, the resulting storm did not meet the qualifications for a Major Event Day, and as such, is not included in other storm metrics.

NS Power activated an Operations Coordination Team on January 30, 2023 in response to an extreme cold snap anticipated on February 4, 2023. The Operations Coordination Team met regularly and focused on load forecast modelling, generation resource availability, transmission and distribution resource availability, outage prediction forecasting, customer outreach and coordination with provincial partners.

3.2.2 Percentage of Calls Answered within 45 Seconds

The following description of this standard and the applicable target are set out in Appendix A of the NSUARB's Order:

> ***Metric:*** Calls answered refers to telephone calls that are answered by a customer service representative after a caller asks to speak to a representative. The wait time associated with the "calls answered" metric is from the time the customer asks to speak to a representative to the time that the call is answered by a representative.
>
> Calls answered using an automated system are not included in the estimation of the metric, if a customer chooses to speak to a customer representative.

Alternatively, if a customer chooses an automated system, those calls are included in the calculation of this metric.

***Benchmark**:* A minimum 85 percent of telephone calls answered within 45 seconds at NSPI's customer care center during severe outage events (i.e., MEDs and above, as defined by the IEEE 1366-2012 Standard). This benchmark shall be fixed for the 2022 to 2026 period.[16]

The percentage of calls answered within 45 seconds met or exceeded the 85 percent target for each of the following seven separate severe events experienced by NS Power in 2023:

1. MEDs January 26-28, 2023
2. MEDs February 4-7, 2023
3. MED July 21-25, 2023
4. EED/MED September 16-21, 2023
5. MED December 11-14, 2023
6. MED December 18-21, 2023
7. MED December 21-23, 2023

Figure 10 shows the Outage Call Answer rate results for each of these events. NS Power has calculated the percentage of calls answered within 45 seconds for the duration of each severe weather event (MED or EED), starting with the time of the first outage attributable to the storm and ending when the last customer impacted by the storm is restored.

NS Power offers all customers a toll-free telephone line with automated outage information and live agents 24 hours a day. The outage line is equipped with a High-Volume Call Answer (HVCA) system that is designed to immediately answer up to 40,000 customer calls per hour without any holds or delays. Customers calling the outage line can report an outage or receive

[16] M10279, NS Power Performance Standards, NSUARB Order, April 7, 2022, Appendix A, page 4.

their outage information directly without having to speak to a Customer Service Associate (CSA).

NS Power also maintains a roster of approximately 100 additional trained NS Power employees outside the Customer Care Centre to assist CSAs in answering customer calls during severe storm events. This ensures that NS Power has the flexibility to ramp up staffing as required to meet the needs of customers during storm events.

Figure 10 – Percentage of Outage Calls Answered within 45 Seconds

Severe Weather Event Date(s)		
Date	Target (percent)	Result (percent)
January 26 – 28	85	97.74
February 4 – 7	85	96.76
July 21-25	85	96.20
September 16 – 21	85	99.80
December 11 – 14	85	99.75
December 18 – 21	85	98.09
December 21 - 23	85	99.30

Supporting documentation, including a monthly breakdown of performance against the target, is contained in **Appendix F**.

3.2.3 Polite Disconnect Rate

The following description of this standard and the applicable target are set out in Appendix A of the NSUARB's Order:

> ***Metric*:** A polite disconnect results when a customer on hold waiting for a customer service agent is disconnected after receiving a brief disconnect

> message. A polite disconnect can result when call lines are very busy, and call volumes may be too high to keep customers on hold.
>
> ***Benchmark*:** A 10 percent or less polite disconnect rate will be targeted annually for all outage calls. This benchmark shall be fixed for the 2022 to 2026 period.[17]

NS Power's polite disconnect rate for 2023 was 1.61 percent for all outage calls. This result achieves the NSUARB's polite disconnect rate target of 10 percent or less for all outage calls.

A polite disconnect occurs when the HVCA system is unable to find an open line because the trunking capacity (the number of calls which can be received at any one time) has been exceeded. Multiple attempts are made to put the customer through to the Customer Care Centre and a polite disconnect only occurs when the system determines there is no open capacity to accept the call because all CSAs are speaking with a customer and the extra telephony trunks are also filled to capacity with customers on hold. Polite disconnects may occur during the peak of a severe weather or outage event.

Supporting documentation, including a monthly breakdown of performance against the target, is contained in **Appendix G**.

3.2.4 Estimated Restoration Time Updates

The following description of this standard and the applicable target are set out in Appendix A of the NSUARB's Order:

> ***Metric*:** The performance standard around estimated restoration times shall aim to promptly provide customers with accurate information based on information available with NSPI.
>
> ***Benchmark*:** NSPI shall provide ETR updates to all customers with no delay, once new restoration time estimates are known. This benchmark shall be fixed for the 2022 to 2026 period.[18]

[17] M10279, NS Power Performance Standards, NSUARB Order, April 7, 2022, Appendix A, page 4.
[18] M10279, NS Power Performance Standards, NSUARB Order, April 7, 2022, Appendix A, page 5.

NS Power customers had uninterrupted access to the systems that provide outage Estimated Time to Restore (ETR) updates in 2023, meeting this performance target. ETR updates are provided to customers via the outage map, the HVCA system, social media sites, or contingency sites. **Figure 5** in section 2.1.3 shows the availability of these systems in 2023.

NS Power tracks compliance with this metric through the following:

- Availability of ADMS
- Availability of the Outage Map
- Availability of HVCA system
- Activation of Contingency Plan

Supporting data for these results is contained in **Appendix C**.

With respect to estimated restoration times, the Board's May 1, 2018 decision included the following further direction:

> Although it is understood that the initial ETRs from the predictive modelling may not have the benefit of actual input from personnel in the field, and therefore may be less representative of the required restoration time, it would be beneficial for NSPI to undertake an analysis comparing the ETRs with actuals to determine the level of accuracy and whether any further refinements could be incorporated into its estimates. The Board directs NSPI to include this analysis in its future annual reports and to illustrate whether the ETRs actually become more accurate as the restoration process progresses.[19]

The following additional directive was provided in the Board's order regarding matter 10279 on April 7, 2022:

> …[T]o monitor related emerging technologies and to report on updates to the ETR processes in its future annual reports.[20]

[19] M08574, NS Power 2017 Annual Performance Standards, NSUARB Decision Letter, May 1, 2018, page 5.

[20] M10279, NS Power Performance Standards, NSUARB Order, April 7, 2022, page 2.

The following information pertaining to the accuracy of ETRs, the ETR process and emerging technologies is provided in response to the Board's directive.

NS Power provides ETRs based on historical average restoration times for all outages as soon as they are identified. Initial ETRs are updated to reflect actual power system impact and the time required to restore as soon as field personnel determine that information. The conditions that impact outage duration (such as access to equipment due to travel conditions or the full extent of equipment damage) are not always immediately known by the crews on site and awareness of this information evolves as restoration continues.

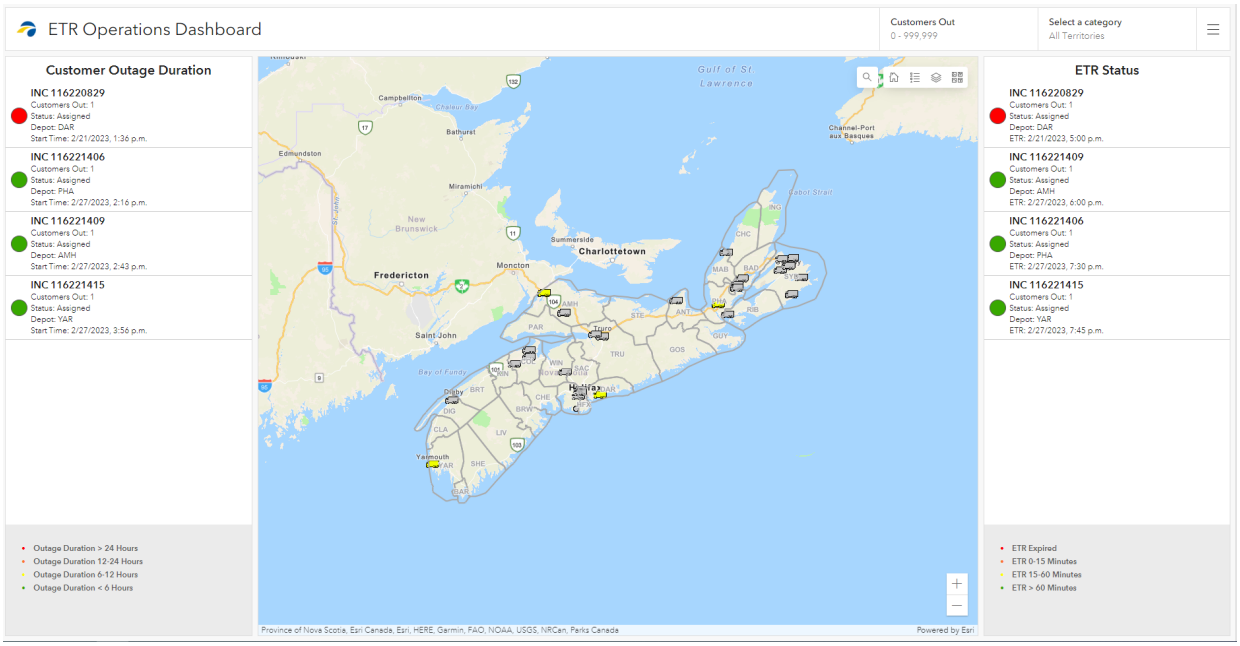
NS Power customizes ETR strategies by region, population density (urban or rural environment), and the number of customers impacted. This allows the automated ETRs assigned to an outage to be tailored to a more specific area, thereby improving overall accuracy. In 2021 NS Power further refined the ETR strategy to provide ETRs at the community level. Automated ETRs are applied during regular operations and then adjusted further for storm events based on the historical impact of similar weather. The ETRs automatically assigned during regular operations are reviewed every six months and updated as appropriate. These refinements resulted in ETR adjustments in 2022 based on actual response times by area. The updated ETR adjustments were considered in 2023 and remain appropriate.

In 2023 NS Power implemented enhancements to the operational Field Maps tool which enable front-line staff such as crew leads and PLTs to update field-validated ETRs and outage cause codes in real time directly from a work site. This enhancement eliminates any delays associated with field staff contacting centralized resources to make these updates. Further, it allows field staff to include comments and additional context which is immediately available to the CSAs to share with customers.

NS Power continues to utilize the ETR dashboard for use in the Emergency Operations Centre during large events. This dashboard ensures that ETRs that have commitments that day or in the hours ahead are highlighted to the EOC team so that targeted support can be provided as required to field staff working to meet these targets. This dashboard also assists in the regular reassessment

of established ETRs during an event, to understand if an area/outage ETR should be adjusted in response to updated field condition data. An example of the dashboard is found in **Figure 11**.

Figure 11 – ETR Operations Dashboard



As an ETR is updated with field-validated data, the restoration time may change from the original ETR. Given the variables in repairing equipment aloft under unpredicatable and challenging conditions, ETRs evolve as restoration continues. Important variables impacting ETRs include the following:

- Outage cause not immediately visible by crews
- Outage cause located off-road
- Precipitation
- Travel conditions
- Wind speeds exceeding safety levels
- Impact of extreme cold or heat
- Visibility for access due to time of day/night
- Requirements for additional materials or resources.

In 2023 NS Power managed 21,492 outage events, compared to 32,380 outage events in 2022. For perspective, outage events in 2023 decreased 33 percent from 2022, which was significantly impacted by Hurricane Fiona's 10,097 outage events, but increased 79 percent over 2021. In 2023 Nova Scotia experienced 15 event days (5 Significant Event Days (SED), 9 Major Event Days (MED), and 1 Extreme Event Day (EED). In addition to the major storm events, ETS were provided for outage events caused by the wildfires in May and June.[21] Of the 21,492 outage events in 2023, 63 percent (13,633) received a single ETR.

Overall, 76 percent of customers receiving a single ETR in 2023 were accurate within plus or minus four hours and 43 percent were accurate within plus or minus two hours for all outages excluding MEDs and EEDs. For all events, including those associated with Post Tropical Storm Lee, 58 percent of outages receiving a single ETR in 2023 were accurate within plus or minus four hours and 33 percent were accurate within plus or minus two hours for all outages.

Figure 12 compares 2023 to 2022 for the number of ETR updates customers received for all outage events.

[21] To ensure the safety of the fire response teams as a result of the wildland fires, NS Power complied with the request of the Halifax Regional Fire and Emergency Incident Command to disconnect power service to areas impacted by fires. These outages were proactive, safety driven and directed by Incident Command and were not a result of any damage or service issues on NS Power infrastructure.

Figure 12 – Outage Events by Number of ETR Updates

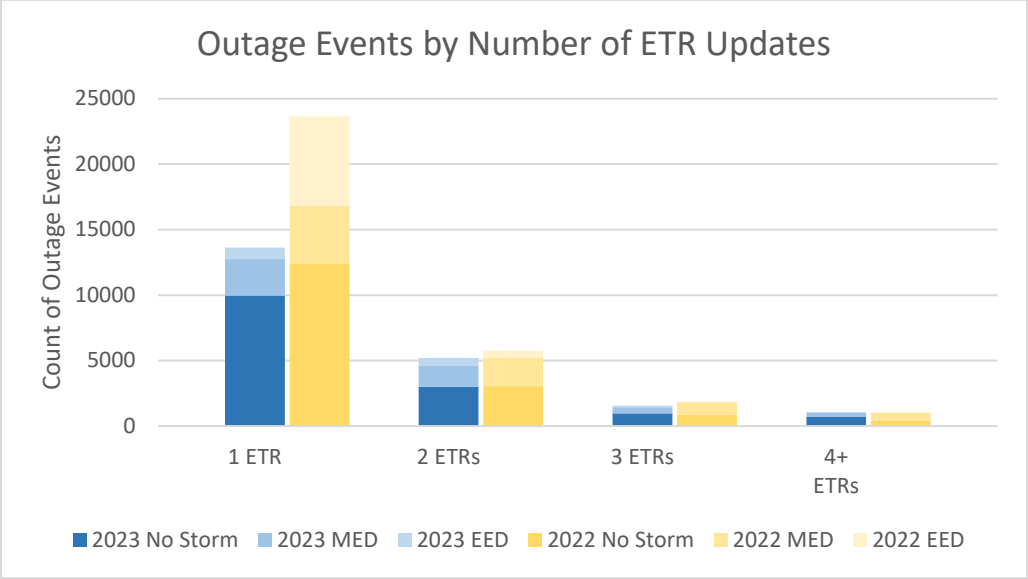
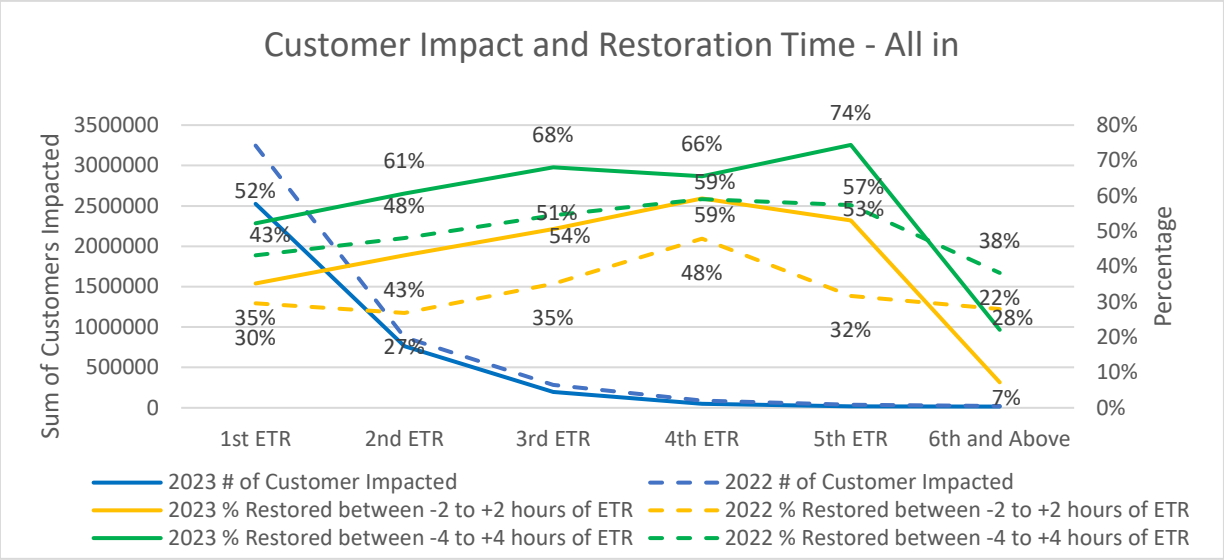


Figure 13 compares the accuracy of ETRs in 2023 and 2022 for all events. As shown, in 2023 NS Power restored power within four hours of communicated ETRs between 74 and 22 percent of the time, and within two hours of the communicated ETR between 59 and 7 percent of the time. 68 percent of the "6 or more" ETR category were outage events due to the wildfires and therefore not under the direction or control of NS Power. These values include the impact of Post-Tropical Storm Lee.

For comparison, **Figure 14** shows the ETR experience with all Major and Extreme Event Days removed. This graph shows that for regular business, NS Power restored power within four hours of communicated ETRs between 78 and 97 percent of the time, and within two hours of the communicated ETR between 57 and 93 percent of the time. NS Power remains focused on continuing to improve the ETR experience for customers, especially during storms. ETR accuracy will be further enhanced by the recent update to the Field Maps tool which will enable field employees to update ETRs directly from the trucks.

Figure 13 – Customer Impact and Restoration Time - All In



Note: The data displays ETRs weighted for customer impact.

Figure 14 – Customer Impact and Restoration Time - Excluding Storms

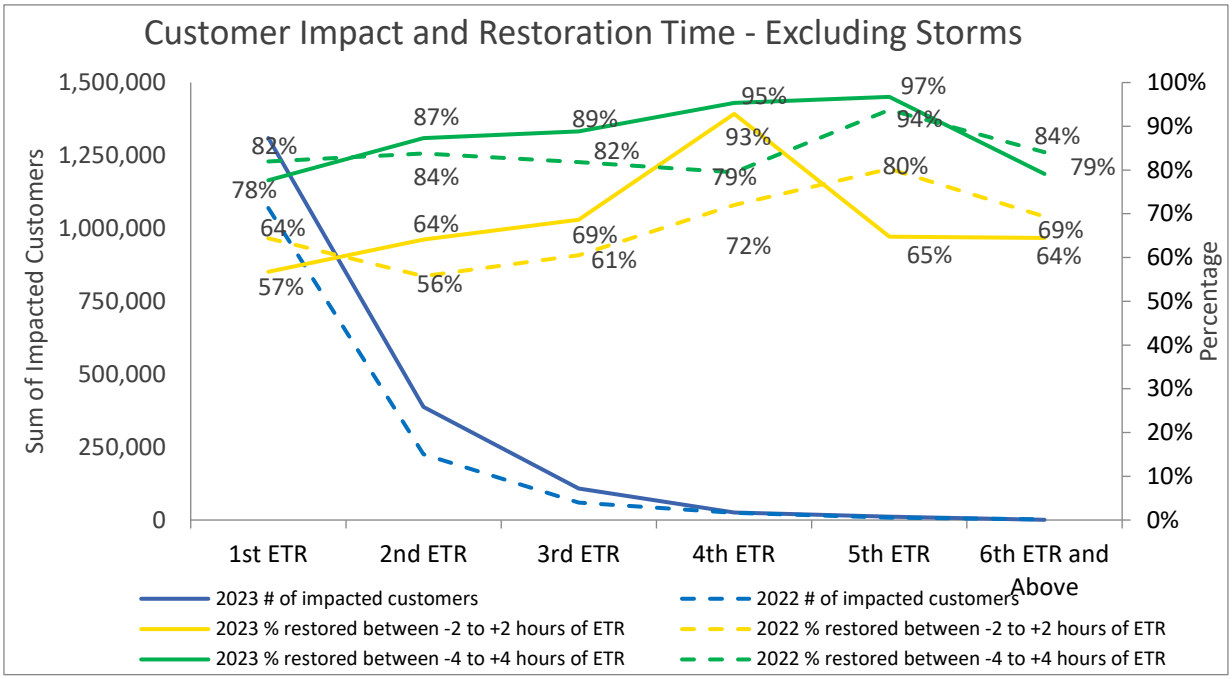


Figure 15 shows 8 percent of outages were restored within two hours of the first ETR provided to the customer during MEDs and EEDs. Similarly, 17 percent of outages were restored within four hours of the first ETR during MEDs and EEDs. These figures show the impact on ETRs due to the numerous Major Event Days as well as Post Tropical Storm Lee and the difficulty in determining the first ETRs early in the assessment of the devastating damage.

Figure 15 – Hourly Variance to Estimated Time to Restore - Storms (EED, MED)

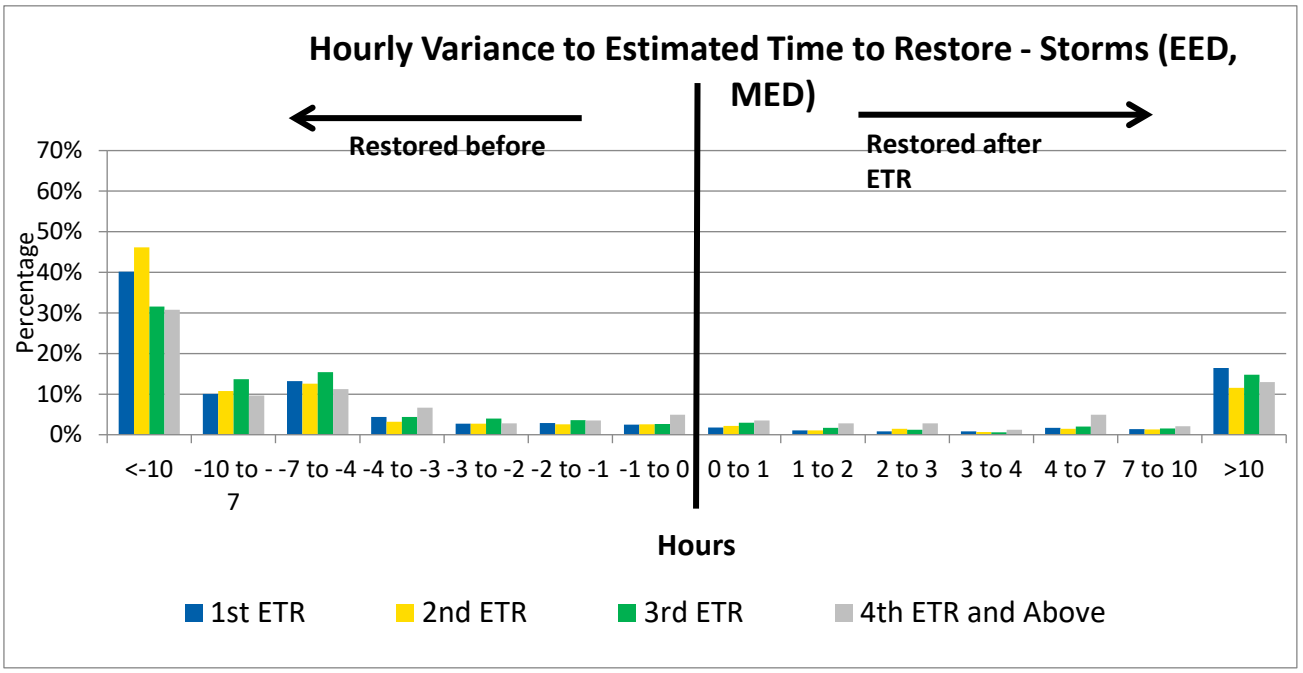


Figure 16 – Outage Events by Number of ETR Updates

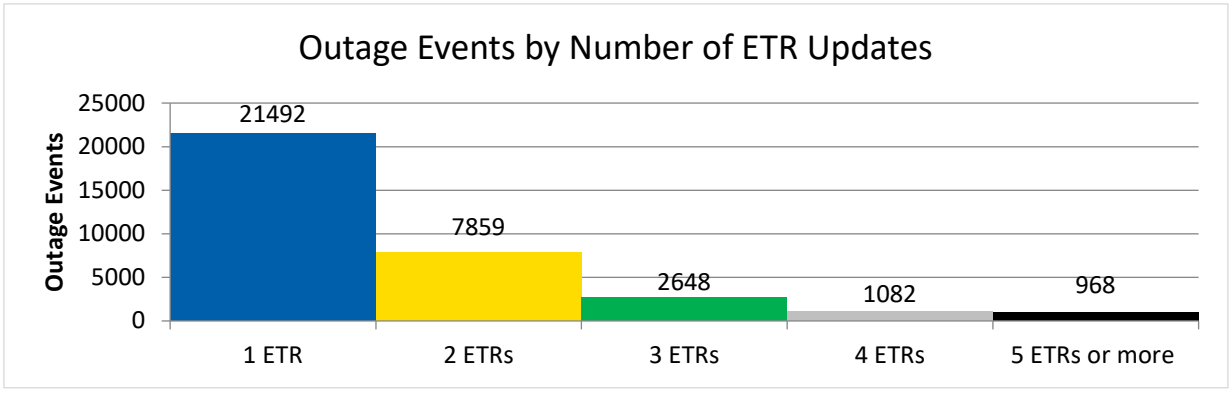
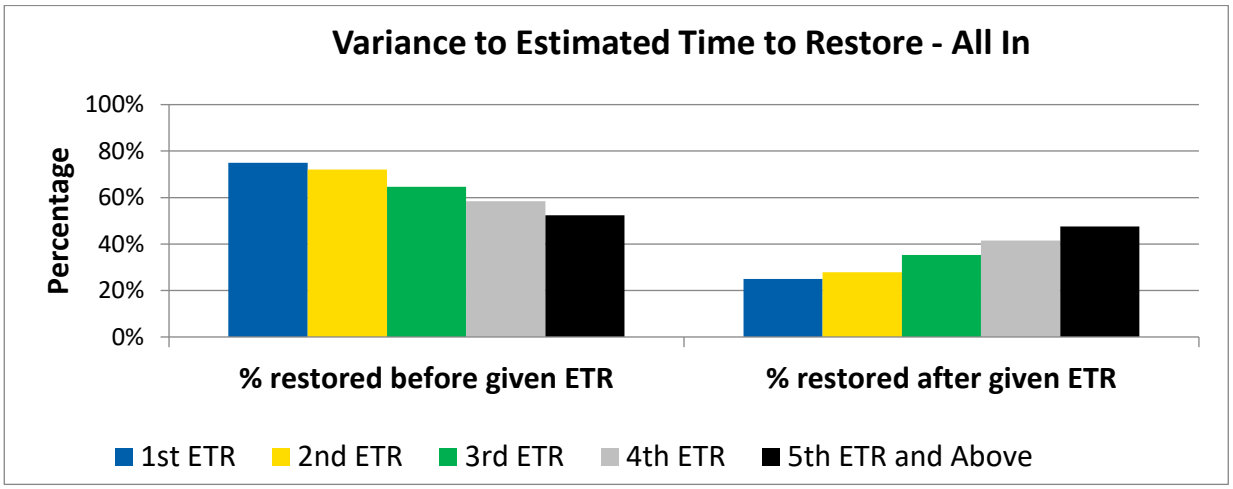


Figure 16 shows the number of ETR updates for all outage events, including all event days. Outages were restored before the ETR between 52 and 75 percent of the time for all events in 2023 as shown in **Figure 17**.

Figure 17 – Variance to Estimated Time to Restore



3.2.5 Percentage of Customers restored within the first 48 hours of a severe weather event

The following description of this standard and the applicable target are set out in Appendix A of the NSUARB's Order:

> ***Metric:*** This metric has been approved to reasonably quantify the promptness of restoration following a severe weather event and will be estimated separately for: (i) MEDs, (ii) EEDs and (iii) SEDs, if the SEDs were excluded from normal conditions as the second 24-hour event, as discussed in Exclusions associated with Reliability Performance Standards.
>
> ***Benchmark:*** The targets for this metric shall be based on NSPI's respective historical averages (since 2017) minus one standard deviation. The benchmarks will be updated annually by including the most recent data available at the time of benchmark updating.
>
> With the data provided from 2017 to 2021, there are 5 data points for SEDs, 19 data points for MEDs and 5 data points for EEDs. The figure below shows

benchmarks to be set for the percentage of customers restored within first 48 hours for SEDs, MEDs and EEDs in 2022.[22]

Figure 3 – 2022 benchmarks for percentage of customers restored within first 48 hours for SEDs, MEDs and EEDs

	SEDs	MEDs	EEDs
Percentage	95.05	91.98	78.38

Note: Targets are rounded to two decimal places.

The 2023 targets are provided in **Figure 18**.

Figure 18 – 2023 Targets for Percentage of Customers Restored within 48 Hours

Percentage of Customers Restored Within First 48 hours			
	SEDs (Percentage)	**MEDs (Percentage)**	**EEDs (Percentage)**
2017-2022 Average	96.19	95.99	82.42
Standard Deviation	5.65	6.82	14.68
2023 Target	95.05	91.98	78.38

NS Power experienced 9 MEDs and 1 EED which are covered under the Percentage of Customers Restored in 48 Hours metric in 2023. All 10 events covered under the 2023 Percentage of Customers Restored in 48 hours metric met the associated targets. Please refer to **Figure 19**, **Figure 20**, and **Figure 21** for additional detail.

In addition to the major storm events, NS Power's system was impacted by wildfires in May and June. To ensure the safety of the fire response teams as a result of the wildfires, NS Power complied with the request of the Halifax Regional Fire and Emergency (HRFE) Incident Command to disconnect power service to areas impacted by fires. These outages were proactive,

[22] M10279, NS Power Performance Standards, NSUARB Order, April 7, 2022, Appendix A, page 5.

safety-driven and directed by Incident Command and were not a result of any damage or service issues on NS Power's infrastructure. As such, these outages are considered separate and distinct from outages due to system performance or adverse weather conditions. A detailed listing of these outages is included in **Appendix J**.

The 48-hour period for event day restoration is considered to begin with the first event-related outage on the same day. The total number of customers impacted is the sum of the storm-related outages following this first event until the end of that day.

For events when restoration cannot start safely at the onset of outages because of the weather (ie. high winds), the start time for the 48-hour period begins when the Emergency Operations Centre (EOC) Storm Lead determines it is safe for restoration to proceed.

Figure 19 – Percentage of Customers Restored within 48 hours of a SED following a MED

2nd 24hr SED	Restored	Total Impacted	Target	% Restored in 48 Hours
There were no SEDs in 2023 which met the criteria of this metric.				

Figure 20 – Percentage of Customers Restored within 48 hours of a MED

MED	Restored	Total Impacted	Target	% Restored in 48 Hours
January 26	81,868	81,868	91.98	99.99
February 2	104,151	104,153	91.98	99.99
July 21	30,646	30,803	91.98	99.49
July 22	95,704	96,262	91.98	99.42
September 17	45,639	48,107	91.98	94.87
December 11	132,148	133,926	91.98	98.67

MED	Restored	Total Impacted	Target	% Restored in 48 Hours
December 18	92,057	94,649	91.98	97.26
December 19	52,470	52,615	91.98	99.72
December 21	99,092	99,213	91.98	99.88

Figure 21 – Percentage of Customers Restored within 48 hours of an EED

EED	Restored	Total Impacted	Target	% Restored in 48 Hours
9/16/2023	421,550	437,287	78.38	96.40

3.2.6 Outage Report for events impacting > 30,000 customers

The following description of this standard and the applicable target are set out in Appendix A of the NSUARB's Order:

> ***Metric/Benchmark:*** NS Power shall submit a report for weather-related outages impacting 30,000 or greater customers. The outage report shall be in the form approved by the NSUARB (Matter M09524). NS Power shall file the outage report within 45 days of the event, or within 75 days in the case of a MED or EED with those impacts.[23]

NS Power experienced nine weather events in 2023 which impacted 30,000 or more customers. In each case, as outlined in **Figure 22** below, a report was prepared in accordance with the established template and filed with the Board.

Figure 22 – Weather Events impacting >30,000 Outage Report Status

[23] M10279, NS Power Performance Standards, NSUARB Order, April 7, 2022, Appendix A, page 4.

Weather Event	Date Filed*	Met Target	NSUARB Matter
January 16, 2023	March 2, 2023	Y	M11027
January 26, 2023	April 11, 2023	Y	M11086
February 4, 2023	April 20, 2023	Y	M10987
July 21, 2023	October 5, 2023	Y	M11370
Post-Tropical Storm Lee: September 16, 2023	December 1, 2023	Y	M11446
November 27, 2023	January 11, 2024	Y	M11516
December 11, 2023	February 23, 2024	Y	M11579
December 18, 2023	March 1, 2024	Y	M11590
December 21, 2023	March 5, 2024	Y	M11593

* In a case where multiple event days meet the target consecutively, the outage report has been filed for the event at either 45 or 75 days counted from the last event day of the storm.

3.3 Reliability Standards

The NSUARB approved the following performance standards relating to reliability:

(i) System Average Interruption Frequency Index ("SAIFI")
(ii) System Average Interruption Duration Index ("SAIDI")
(iii) Circuit Average Interruption Frequency Index ("CKAIFI")
(iv) Circuit Average Interruption Duration Index ("CKAIDI")

Exclusions:

These reliability performance metrics are to be estimated for normal conditions, i.e., excluding: (i) major event days (MEDs and above), as defined by the established MED and extreme event day (EED) thresholds* utilizing the IEEE 1366-2012 Standard 2.5 Beta methodology; and (ii) planned outages; and (iii) adverse weather-associated outages occurring in the second 24-hour period after a MED or EED.

> Only those outages occurring in the second 24-hour period after a MED or EED which can be attributed to the same storm system as precipitated the original MED or EED and meet Significant Event Day (SED**) thresholds are to be excluded from the metric calculation. The second 24-hour event, if excluded, will be considered a severe weather event, and be subject to adverse weather response standards.[24]

The 2023 results for each of these are detailed below.

3.3.1 SAIDI and SAIFI Standards

The SAIFI and SAIDI benchmarks/targets are based on a five-year rolling average plus one standard deviation and are reset each year. Within the five-year review period (2022-2026), targets for a subsequent year must be equal to or better than the prior year's target.[25]

The 2023 Performance Standard target for SAIDI was 4.29, meaning that on average, a customer would experience fewer than 4.29 hours of interruption over the year. The 2023 Performance Standard target for SAIFI was 2.05, meaning that on average, a customer would experience fewer than 2.05 outage events throughout the year.

NS Power's results for SAIDI and SAIFI for 2023 are set out in **Figure 23** below. The 2023 result for SAIFI was 2.18 (or about 2 instances per customer per year on average, similar to the target) and the 2023 result for SAIDI was 5.21 (or approximately 5 hours versus target of approximately 4 hours per customer per year on average).

Figure 23 – SAIDI and SAIFI Results

Metrics	2023 Target	2023 Actuals
SAIDI	≤ 4.29	5.21
SAIFI	≤ 2.05	2.18

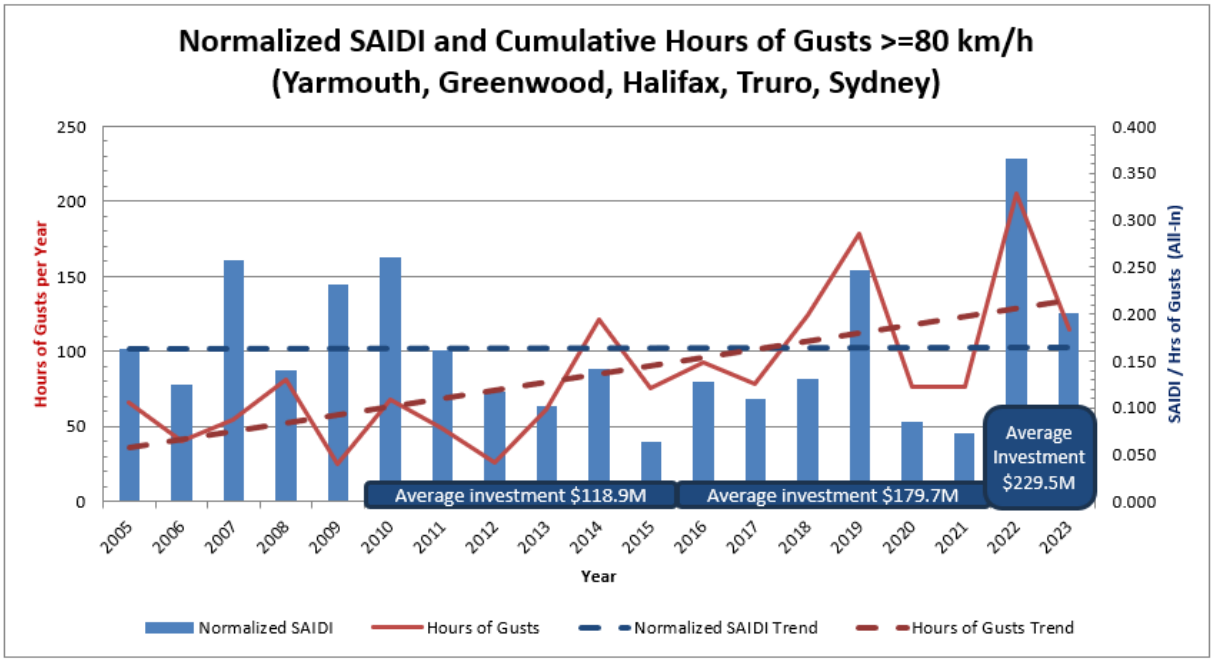
[24] M10279, NS Power Performance Standards, NSUARB Order, April 7, 2022, .Appendix A.
[25] M10279, NS Power Performance Standards, NSUARB Order, April 7, 2022, Appendix A, page 2.

Nova Scotia Power recognizes that increasingly powerful storms, higher winds and the compounding effects of climate change are challenging to overhead power system infrastructure largely because of the resulting tree contacts. The number of hours of gusts greater than 80 km/h has increased by almost 120 percent over the last 15 years from a 5-year average of 59.8 hours in 2008 to a five-year average of 130.4 in 2023. The increased reliability investment specific to vegetation management, along with strategic storm hardening investments, have been made in response to these significantly changing weather patterns and the resulting increased risk to the overall power system. The pace of implementation is reflective of the quickly changing weather conditions but is required to be balanced with customer affordability. **Figure 24** details the SAIDI performance normalized for hours of wind gusts greater than 80 km/h and shows that while weather is getting increasingly more intense, there has not been a corresponding erosion in performance and SAIDI has remained steady.

This demonstrates that NS Power's investments in reliability, storm hardening and vegetation management are providing benefit and offsetting the escalating impacts of climate change; in other words, with the increased storms and hours of winds above 80 km/h, SAIDI would have increased over the last few years without these system investments.

Upgrades and investments in the power system are improving the experience for customers with respect to outage duration and frequency, but the pace of these improvements is challenged by the escalating weather conditions experienced in Nova Scotia in the last five years such as hurricanes, post-tropical storms, flooding, wildfires, ice, and the very high winds that accompany many of the storms. NS Power is in the process of executing its plan that takes the accelerating impacts of climate change into account and provides a path to improve reliability while balancing affordability for customers.

Figure 24 – Normalized SAIDI and Cumulative Hours of Gusts ≥80 km/h



NS Power has a multi-faceted plan to target reliability improvements for customers. The plan leverages:

- Dedicated Reliability Team: Focus, Alignment and Communication
- Five-Year Reliability Improvement Investment Plan
- Escalating Climate Change Impacts & Adverse Weather
- Pole Strength Standards Upgrades
- Enhanced Vegetation Management and AI tools

The following sections provide additional information about each of these plan elements and how they will work in tandem to improve reliability for customers.

Dedicated Reliability Team: Focus, Alignment and Communication

In 2023 NS Power established a Reliability Department focused on customer engagement and project execution. In June NS Power recruited a Director of Reliability and created a team with the responsibility to develop and implement a plan to improve reliability for customers while

balancing affordability and resource availability. This department is focused exclusively on improving reliability for customers by executing on an enhanced five-year reliability investment plan and engaging with customers to ensure that the plan is aligned with customer experience and needs.

The following accountabilities were completed in 2023:

- ✓ Established Reliability Advisors across all four major regions of the Province. Reliability Advisors were in place in Metro, West, Northeast and Cape Breton regions prior to year-end.
- ✓ An enhanced focus on stakeholder engagement (customer, municipal and provincial). The Reliability team engaged with and focused on listening to customers with the goal of identifying reliability concerns and potential solutions during 32 outreach engagements across the province.
- ✓ Execution of the vegetation management investment plan to ensure full optimization. The vegetation management investment increased to $32 million in 2023 (from $20-$25 million in prior years) with plans established to further increase to $45 million (Capital & OM&G) in 2024 and continue at that level for the next four years.
- ✓ Reliability Advisors with the support of colleagues in the field and throughout the business are working with community leaders to provide a direct, person-to-person connection between the Company and customers.
- ✓ Advancement of Energy Delivery Incremental Resource Plan to align field resources with the increased customer work and reliability investment. Energy Delivery has successfully added 11 new planner positions, 21 new wiring inspectors with ongoing recruiting to increase the PLT complement from 165 to 195 individuals.

Figure 25 lists the 32 reliability engagements completed to date since the team was formed.

Figure 25 – Reliability Engagements Completed to Date

Five-Year Reliability Improvement Investment Plan

NS Power has implemented an extensive five-year investment plan and focused its operational structure on improving reliability for Nova Scotians. The Reliability team has worked closely with the operations and asset management teams and has engaged directly with customers to build a five-year plan that will positively impact reliability within the constraints of affordability and resource availability.

As noted in **Figure 26**, the average capital investment for 2023-2025 is $245 million, which represents an approximate $30 million increase over the 2018-2022 investment period. These investments are focused on the areas of vegetation management, storm hardening, and grid enhancements which will positively impact the reliability experience for customers.

These investments are necessary for continued improvement of outage duration and frequency going forward.

Figure 26 – Reliability Investment Plan

Investment Type	2018-2022 Average Energy Delivery Investment ($M)	2022 Energy Delivery Investment ($M)	2023 Energy Delivery Investment ($M)	2024 Energy Delivery Investment ($M)	2025 Energy Delivery Investment ($M)
Transmission System Investment	51.9	47.9	67.5	66.7	94.2
Distribution System Investment	140.5	199.5*	131.7	106.3	132.0
General Plant System Investment	8.0	11.0	10.5	17.1	17.7
Vegetation Management Investment**	15.2	15.6	22.0	35.0	34.9
Total	215.6	274.0*	232.0	225.0	279.0

*2022 Distribution investment number includes the Hurricane Fiona Investment
**Vegetation Management Capital + OM&G investment totals $32 million in 2023 & $45 million in 2024.

Escalating Climate Change Impacts & Adverse Weather

Nova Scotia experienced many intense adverse weather events in 2023:

- February 3-5: Record-Breaking Cold

  Record-breaking cold temperatures (-27ºC) and winds above 80 km/h were felt across the province and Atlantic Region.

- May and June: significant wildfires in the Halifax and Shelburne areas

- July: Record-breaking lightning & extensive flooding

Nova Scotia experienced a record-setting 23,008 lightning strikes in a two-day period, which is triple the historical July average. Over 250 mm of rain was recorded in parts of the province.

- September 16-21: Post-Tropical Storm Lee

  Post-Tropical Storm Lee made landfall on September 16 with wind gusts ranging from 90-110 km/h. The region experienced 17 consecutive hours of wind gusts over 75km/h which significantly contributed to power system damage.

- December 11-24: three back-to-back winter storms with significant winds.

Figure 27 shows that despite the worsening weather experienced in the province, NS Power realized a 14 percent improvement in SAIDI and a 15 percent improvement in SAIFI in 2022 as compared to 2019. Further gains were realized in the frequency of outages in 2023 over 2022, despite the extraordinary weather events of 2023.

NS Power remains committed to building resiliency within the power system and meeting the SAIDI and SAIFI performance standard targets, and recognizes that more reliability investment will be required while continuing to balance affordability for customers.

Figure 27 – SAIDI/SAIFI Results Percent Improvement

	Year End 2019 Results	Year End 2021 Results	Year End 2022 Results	Year End 2023 (Performance Standards Result)	Percent Improvement 2022 over 2019	Percent Change 2023 over 2022	Performance Standards Targets
SAIDI	5.99	5.23	5.16	5.21	+14.0	-0.97	4.29
SAIFI	2.58	2.27	2.19	2.18	+15.0	+0.50	2.05

Figure 28 and **Figure 29** below provide graphical representations of the SAIDI and SAIFI results over the course of 2023.

Figure 28 – 2023 SAIDI Result

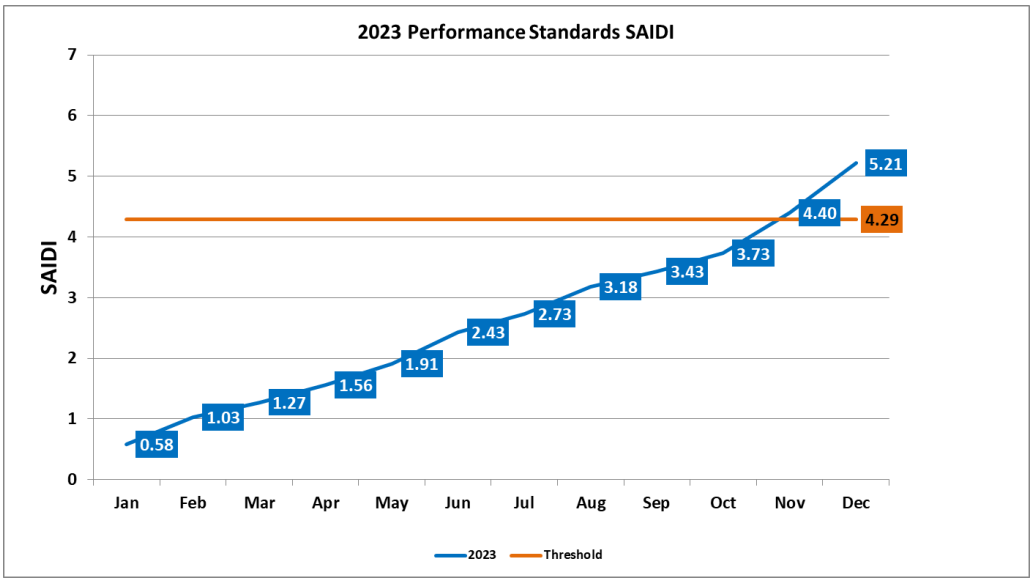


Figure 29 – 2023 SAIFI Result

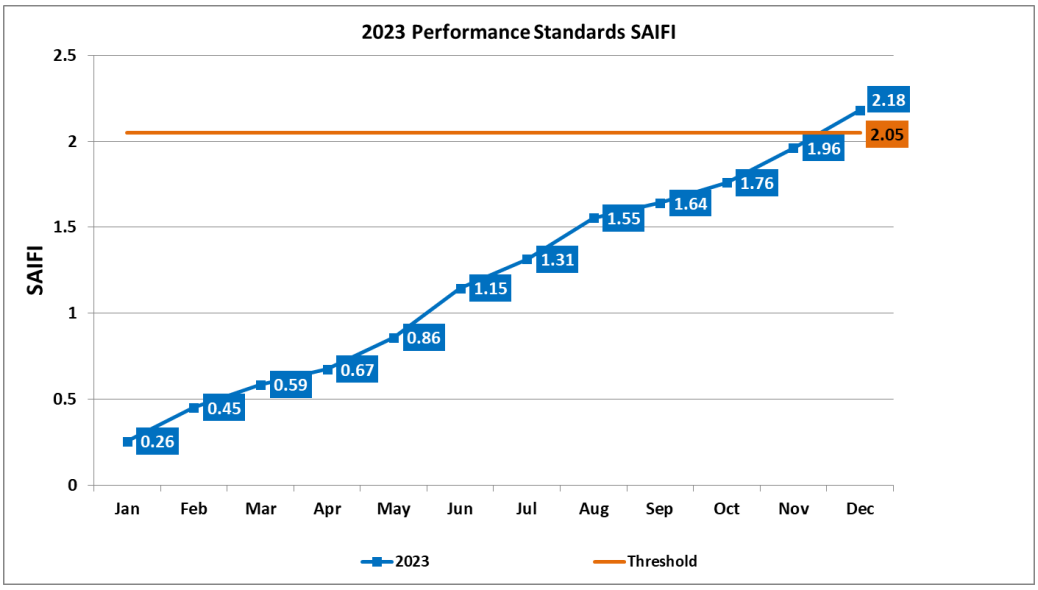


Figure 30 and **Figure 31** present the SAIDI and SAIFI figures for 2023 with the contributions to SAIDI and SAIFI from days meeting significant event day status highlighted. These graphs also highlight the contribution to SAIDI and SAIFI from outages caused by "foreign interference" such as motor vehicle accidents, structural fires, and human-felled trees. These graphs showcase the impacts of smaller event days (such as localized weather events) that do not reach the threshold of a MED or EED on the SAIDI and SAIFI results in 2023. As shown in **Figure 32** and **Figure 33**, without the impact of foreign interference, SAIDI and SAIFI results improve, with SAIFI meeting the target in 2023.

Figure 34 and **Figure 35** show that without the impact of five significant weather days, NS Power would have met the SAIDI and SAIFI targets in 2023.

Figure 30 – 2023 SAIDI with SED and Foreign Interference Impacts Highlighted

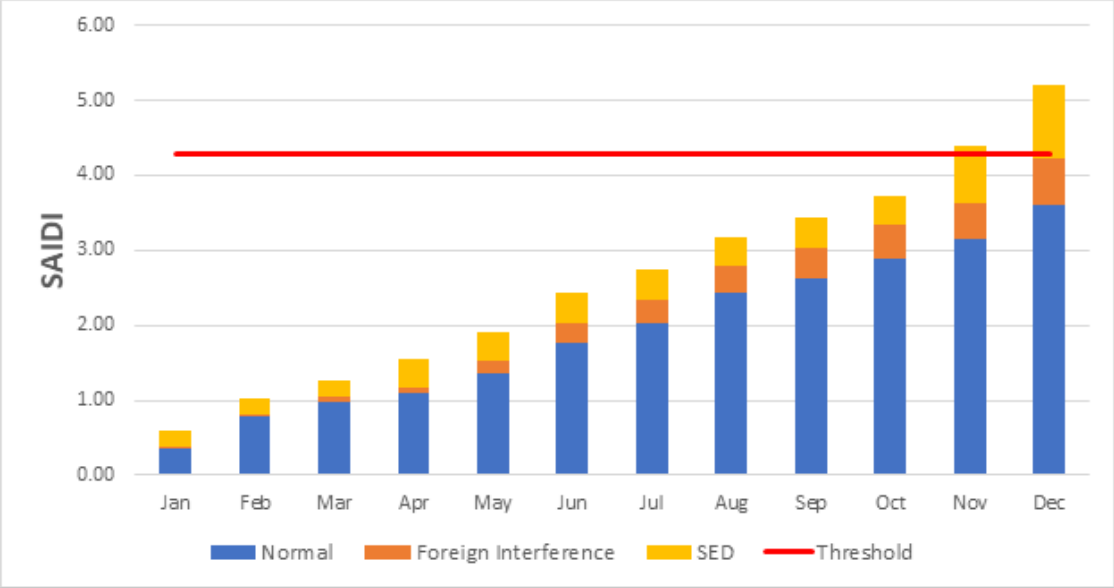


Figure 31 – 2023 SAIFI with SED and Foreign Interference Impacts Highlighted

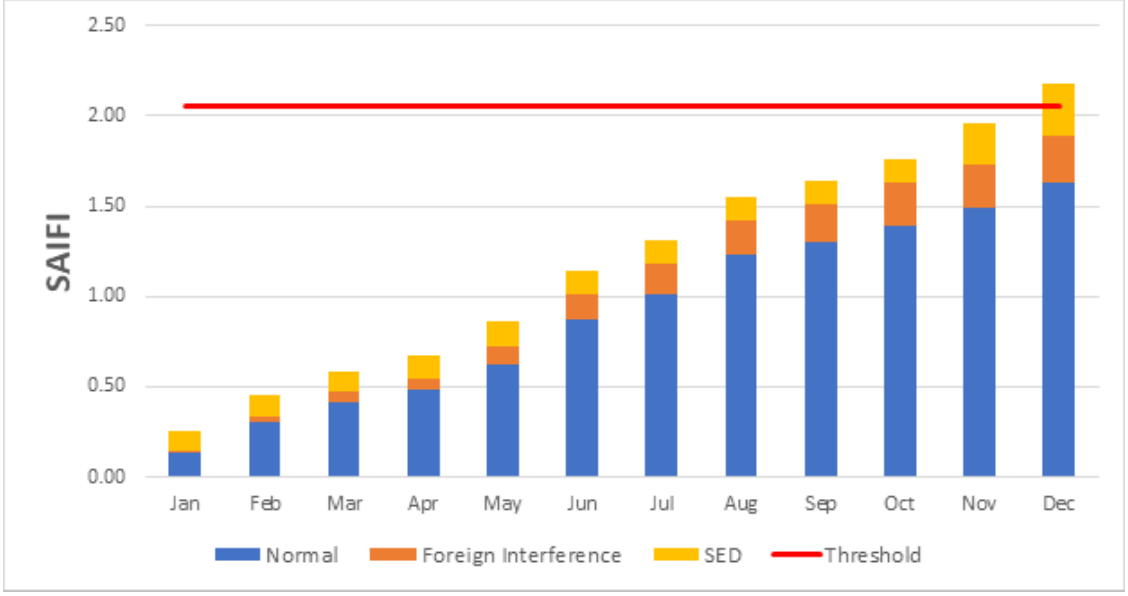


Figure 32 – 2023 Performance Standards SAIDI with CEA Cause Foreign Interference Excluded

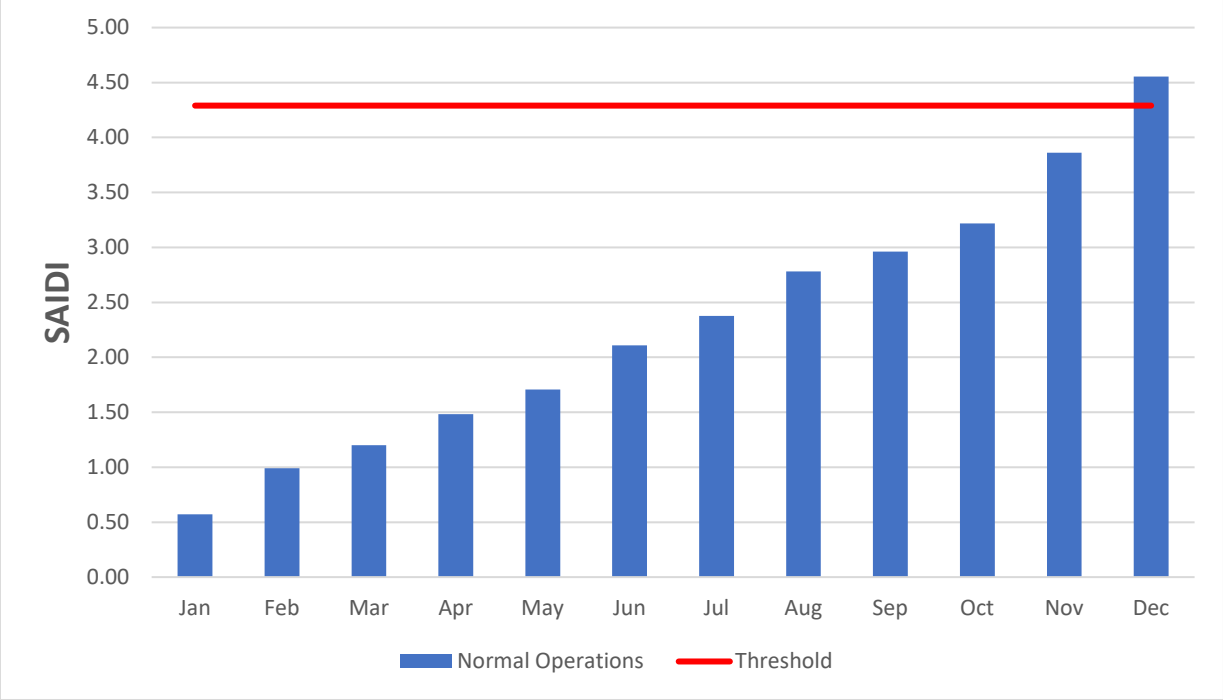


Figure 33 – 2023 Performance Standards SAIFI with CEA Cause Foreign Interference Excluded

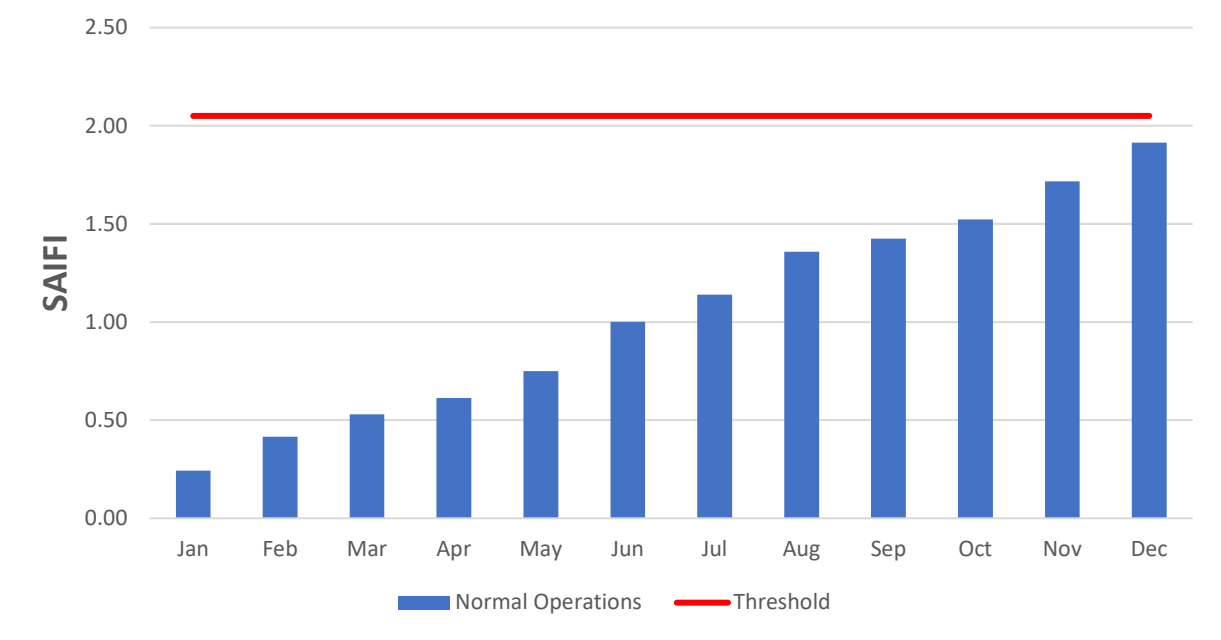


Figure 34 – 2023 SAIDI with SED Excluded

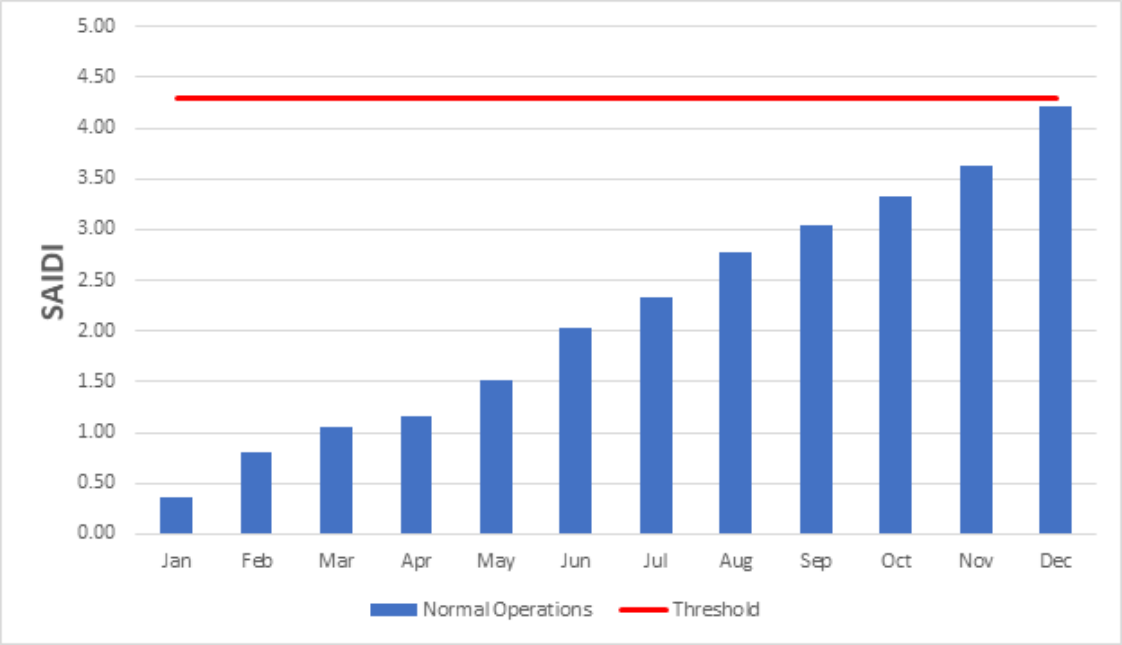
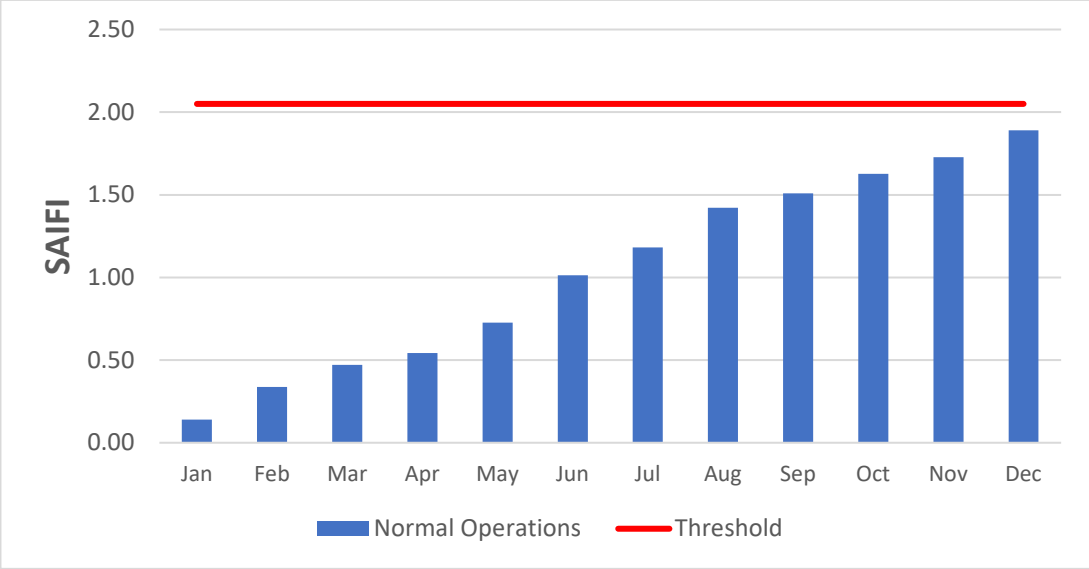


Figure 35 – 2023 SAIFI with SED Excluded



NS Power experienced 15 event days in 2023: 5 SEDs, 9 MEDs and 1 EED, as noted in **Figure 36**. The number of event days is increasing and the damage created during these storm events

is amplifying. Similar to many parts of the province, NS Power is still recovering from the significant impact of Hurricane Fiona which caused historic levels of catastrophic damage to the province, including uprooting significant numbers of trees, leading to damage on NS Power's system infrastructure.

In response to major storms hitting the province, NS Power has opened its Emergency Operations Centre (EOC) for 99 days over the past five years. This is more than double the number of days the EOC was open over the five-year period from 2013-2017. As the storms hitting the province have become more frequent and intense, NS Power has been proactively preparing and responding to the significantly higher demands than it experienced five to ten years ago.

Figure 36 – Historical Year End Event Days (2003-2023)

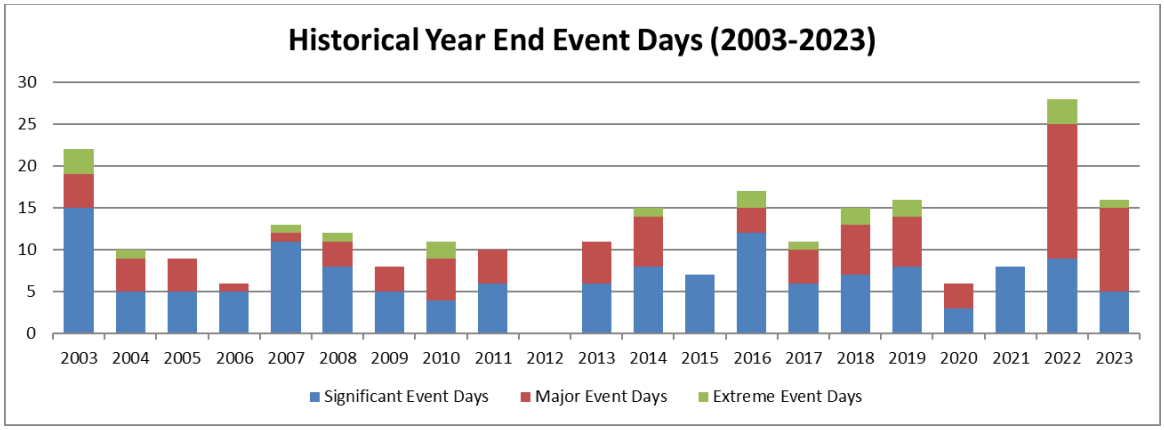
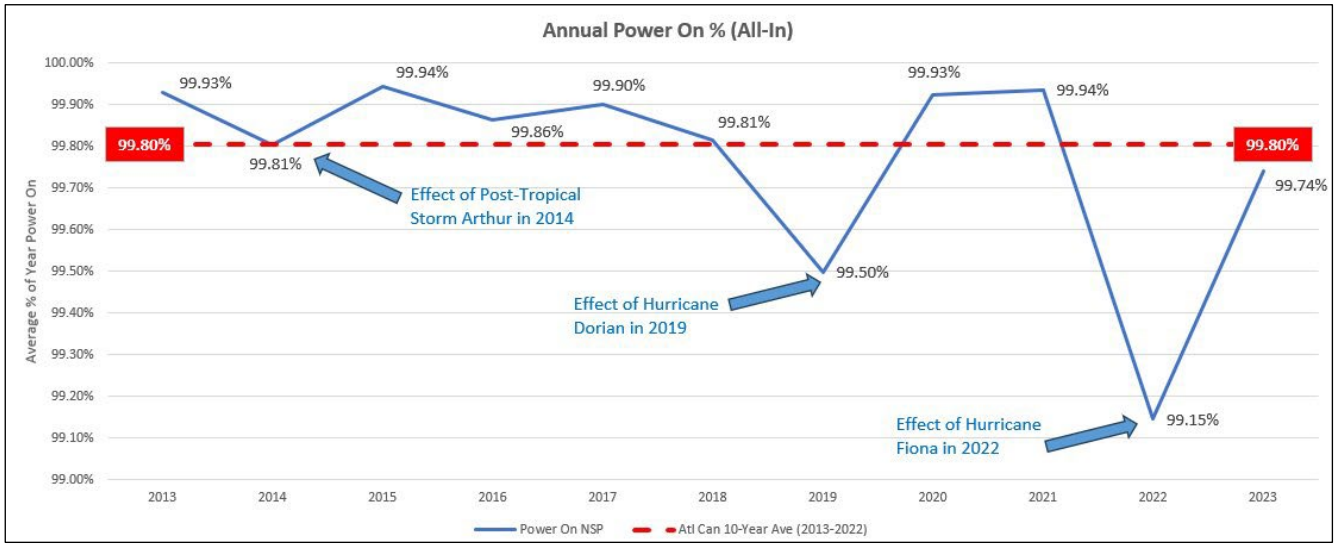


Figure 37 – Number of Days EOC Open by Year

Year	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Days EOC Open	2	5	8	16	15	16	19	12	3	42	16

Figure 38 shows the average percent power-on data for 2013 to 2023 for Atlantic Canada. Despite the intensity of the weather events impacting Nova Scotia, NS Power has out-performed the Atlantic Canadian Utility Average in eight of the last 11 years. The three years in which NS Power did not out-perform the long-term average performance for the region were 2019, 2022 and 2023 – years in which Nova Scotia was impacted by Hurricanes Dorian, Fiona and Post-Tropical Storm Lee respectively. NS Power strives to improve reliability for customers, maintain or improve its position as one of the most reliable utilities in the region, and meet all the performance standards.

Figure 38 – Power-on Comparison (NS Power & Atlantic Canada)



Pole Strength Standards Upgrades

Updates to the overhead distribution pole standards are projected to be completed by Q3 2024. These revisions will meet the requirements of the CSA standards which have been updated to address the impacts of climate change across Canada. These updates include moving to a non-linear pole loading analysis. A non-linear analysis is an analysis where a non-linear relationship holds between applied forces and displacements. With a non-linear analysis, as the pole deforms from a force, it is weaker to respond to the force applied and the deformation effect is compounded. As such, non-linear analysis, which is now enabled through design software

improvements, yields a more accurate approximation of how a pole will respond to a force/load. The intent of moving to a non-linear analysis is that it allows NS Power to be better able to model how wind loads and forces from trees on powerlines will impact poles while taking into consideration the distinctions in pole structure surface area provided by communication cables, transformers, protective devices, etc.

The updates to the overhead pole standards will include:

- Updated relationships between pole classes and strength
- Updated pole classes for standard span lengths
- Updates on equipment pole strengths
- Updated joint use impacts

NS Power has already begun to use higher strength poles and storm-hardened design criteria throughout the system. This work will continue with implementation in the third quarter of 2024 with updated standards for all distribution line work outlining the application and installation of stronger pole classes.

Enhanced Vegetation Management and AI tools

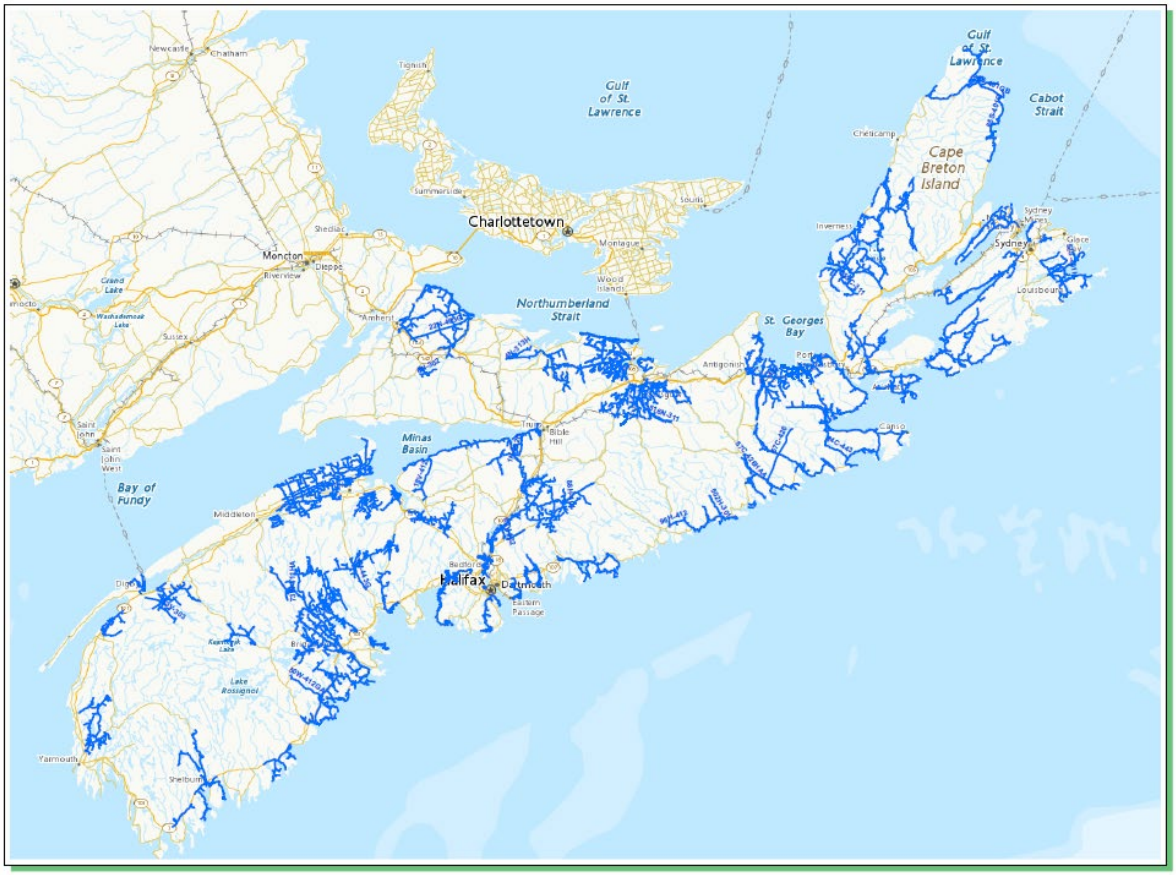
NS Power's investment in Vegetation Management increased to $32 million in 2023 (from approximately $25 million in prior years) with plans established to further increase to $45 million (Capital & OM&G) in 2024 and stay at that level for the next four years. This plan will realize vegetation management improvements on over 44 unique feeders, as shown in blue in **Figure 39**, and targets over 1,500 km of distribution and transmission line.

Tree impacts during adverse weather are the number one cause of outages in Nova Scotia. A key element of the reliability team plan is to engage with customers and communities to talk about the impact of trees on the power system so that NS Power and customers are aligned on the value of this work. NS Power requires the permission of individual landowners to cut any tree that is outside of an established right-of-way. By working together with landowners, the outcome of the Vegetation Management program will be stronger for customers.

The NS Power Vegetation Management team is working to strengthen the vegetation inventory management system with artificial intelligence tools which will use advanced imaging to create an enhanced view of the vegetation condition throughout the power system. With this information, vegetation management investments can be further targeted and optimized for reliability benefits and impact.

In addition, this plan balances focus on the worst performing feeders with proactive investment on other feeders as directed by the Company's asset and risk management strategies. NS Power has engaged an additional tree contractor in a longer-term contract to allow for the scaling up of vegetation management resources to ensure a clear plan to execute on the increased vegetation management investment is in place.

Figure 39 – 2024 Provincial Vegetation Management Plan



Reliability Focus and Next Steps in 2024

The focus on reliability in 2023 has established clear next steps for 2024 and beyond.

Identification: Executing feeder and primary equipment inspections, assessing vegetation conditions around distribution and transmission lines, and developing reliability plans for problem feeders.

Planning: Advancing work orders to address feeder inspection deficiencies and formulating detailed action plans for necessary maintenance or replacement of primary equipment.

Execution: Tracking advancements in feeder inspection work, equipment replacements, planning studies for high-priority items, completion of primary equipment work, and clearing and widening vegetation along the transmission and distribution systems.

Engagement: Conducting proactive engagement sessions with customers and stakeholders regarding reliability.

Investment: Increasing investments to improve the performance of transmission and distribution systems and vegetation management.

Results: Tracking lagging indicators influenced by various leading indicators including SAIDI, SAIFI, CKAIDI, and CKAIFI. These are achieved through the completion of reliability-focused initiatives.

The combination of unprecedented weather events, unprecedented customer growth, and affordability concerns for customers have strained the impact of reliability investments, the availability of skilled resources and the pace at which investments can be made. In addition, the points identified below must be considered when evaluating the Company's performance with respect to SAIFI and SAIDI.

- The reliability work completed in the previous five-year period and its outcome of holding SAIDI and SAIFI performance steady despite increased frequency and intensity of weather conditions and storms when evaluating the Company's reliability performance.

- The reliability plan for 2023-2027, as outlined, and its ability to improve reliability while balancing affordability and skilled resource constraints.

- The fact that the Company has a responsibility to manage affordability while implementing reliability improvements.

Supporting documentation for the SAIDI and SAIFI results, including "all-inclusive" results,[26] is set out in **Appendix H**.

3.3.2 CKAIDI and CKAIFI Standards

CKAIDI refers to the average duration of all power interruptions for customers connected to a particular circuit (feeder) during a one-year reporting period. CKAIFI refers to the average frequency of power interruptions for customers connected to a particular circuit (feeder) during a one-year reporting period. CKAIDI and CKAIFI results are location-specific, whereas SAIDI and SAIFI results are province-wide.

The following description of the CKAIDI and CKAIFI standards and the applicable targets are set out in Appendix A of the NSUARB's Order:

Metrics:

- *CKAIFI* is related to the *frequency* of interruptions experienced, which may be tied to a given circuit. CKAIFI is estimated using the following formula:

$$\text{CKAIFI} = \frac{\text{Total Number of Customer Interruptions by Circuit}}{\text{Total Number of Customers Served by Circuit}}$$

[26] M08574, NS Power 2017 Annual Performance Standards, NSUARB Decision Letter, May 1, 2018, page 5.

- *CKAIDI* is related to the *duration* of interruptions experienced, which may be tied to a given circuit. CKAIDI is estimated using the following formula:

$$\text{CKAIDI} = \frac{\text{Sum of All Customer Durations of Interruption by Circuit}}{\text{Total Number of Customers Served by Circuit}}$$

Benchmarks:

The benchmarking methodology for CKAIDI and CKAIFI is as follows:

Any circuit or feeder that is among the worst 5% of all NSPI's circuits or feeders for two consecutive years shall be labeled as a problem circuit. Any problem circuit that is among the worst 5% of all NSPI's circuits or feeders for the third consecutive reporting year shall be labeled a chronic circuit. If the CKAIDI or CKAIFI values of the chronic circuits in a given year is greater than the average CKAIDI or CKAIFI values plus two standard deviations across all NSPI circuits in the same year, NSPI would have not met the benchmark, and shall be subject to a penalty. [27]

Figure 40 details the 2023 results for CKAIDI and **Figure 41** details the 2023 results for CKAIFI. The target feeders for CKAIDI and CKAIFI are identified in the Board's Decision on the prior year's results. All feeders tracked under the CKAIDI and CKAIFI metrics in 2023 met the year end targets.

Figure 40 – 2023 CKAIDI Results

	Top 5% 2023	2023 Ranking* (Percentage)	2023 CKAIDI Result	2023 Target**
11S-411	Yes	95.78	16.87	16.98
22C-402	No	81.9	8.11	16.98

[27] M10279, NS Power Performance Standards, NSUARB Order, April 7, 2022, Appendix A, page 2.

Figure 41 – 2023 CKAIFI Results

	Top 5% 2023	2023 Ranking* (Percentage)	2023 CKAIFI Result	2023 Target**
62N-413	No	91.0	4.77	5.81
22C-402	No	77.7	2.97	5.81
11S-411	No	94.0	5.32	5.81

* Feeders with a rank of 95-100 percent are ranked in the top 5th percentile of worst-performing feeders in 2023.
** The 2023 target reflects the average of the CKAIDI/CKAIFI values for the year plus two standard deviations.

Supporting documentation for the CKAIDI and CKAIFI results is set out in **Appendix I**.

4.0 CUSTOMER-LEVEL RELIABILITY DATA

In its order on the 5-year review of Performance Standards on April 7, 2022. The Board stated the following:

> The Board orders as follows:
>
> …
>
> To report on the progress of the development of customer-level reliability data through the ADMS system in the 2022 Performance Standards Report, including any other available information from other [Electricity Canada] utilities on this topic.[28]

NS Power has outlined the following stages of the project to develop customer-level reliability metrics:

1. Concept
2. Data Validation
3. Database design
4. Data transfer
5. Beta testing of metric calculation
6. Produce first operational values of metric (*Present Stage)

The Company continues to produce the operational values for Customers Experiencing Long Interruption Duration (CELID-8), and Customers Experiencing Multiple Interruptions (CEMI-4 and CEMI-5). CELID-8 is defined as the percentage of customers who experience interruptions with cumulative duration longer than or equal to a given threshold (in this case, 8 cumulative hours). CEMI represents the percentage of customers experiencing a volume of sustained interruptions greater or equal to a threshold (in this case 4 and 5 interruptions for

[28] M10279, NS Power Performance Standards, NSUARB Order, April 7, 2022, page 2.

CEMI-4 and CEMI-5 respectively).[29] The preliminary values can be found in **Figure 42**, **Figure 43** and **Figure 44**.

NS Power reports a five-year average value for CEMI-5 of 10.4 percent, indicating that 10.4 percent of customers experienced five or more sustained outages on average from 2018-2022 (with MEDs, EEDs and planned outages removed). This is consistent with the 2017-2021 average of 10.2 percent. Similarly, the preliminary five-year average value for CEMI-4 (four or more interruptions) is 19.6 percent.

NS Power reports the preliminary five-year average value for CELID-8 as 29.3 percent (with MEDs, EEDs and planned outages removed). This indicates that over the same 2018-2022 period, 29.3 percent of customers experienced an average of eight cumulative hours of interruption annually. The preliminary values can be found in **Figure 45** and **Figure 46**.

As with any new complex reporting system, time is required to develop a baseline for comparison, ensure accuracy of reported data, and to gain perspective about how best to interpret and make sound investment decisions based on the resulting customer level reliability trends.

Figure 42 – Percentage of NS Power Customers Experiencing Multiple Interruptions - 4 and 5 (MED, EEDs and Planned excluded)

CEMI (PS) BINS	2017	2018	2019	2020	2021	2022	2023	5-YR AVG (2018-2022)
4	12.7	15.5	26.5	14.6	19.0	22.2	20.2	**19.6**
5	6.4	8.4	14.3	7.5	10.7	11.1	11.4	**10.4**

[29] IEEE Guide for Electric Power Distribution Reliability Indices, IEEE Std 1366-2022, page 17.

Figure 43 – CEMI-4 2018-2023

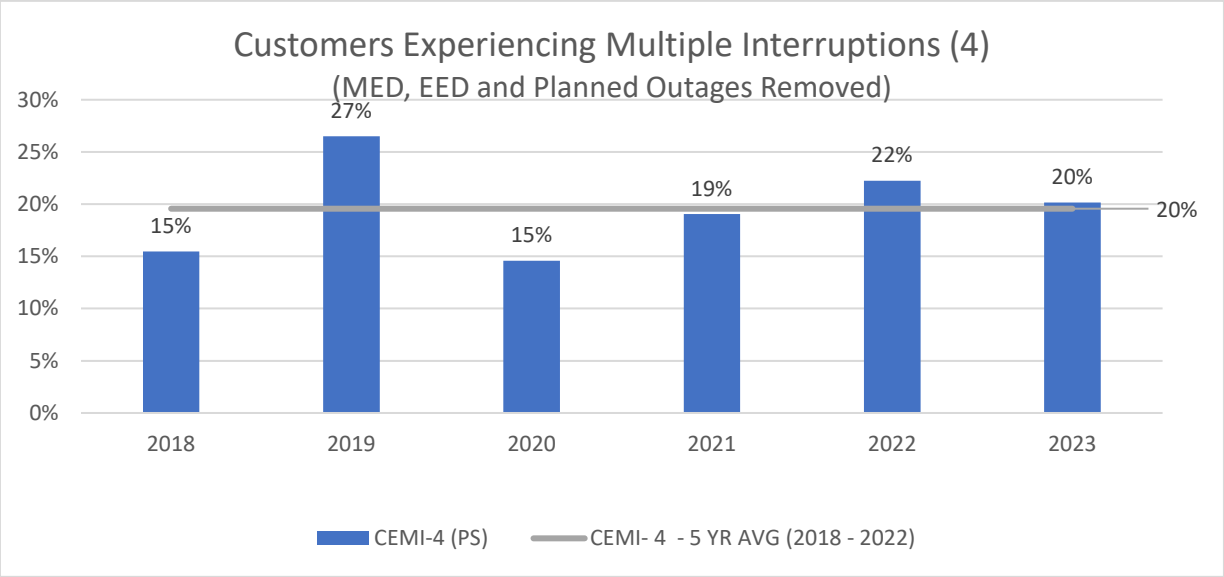


Figure 44 – CEMI-5 2018-2023

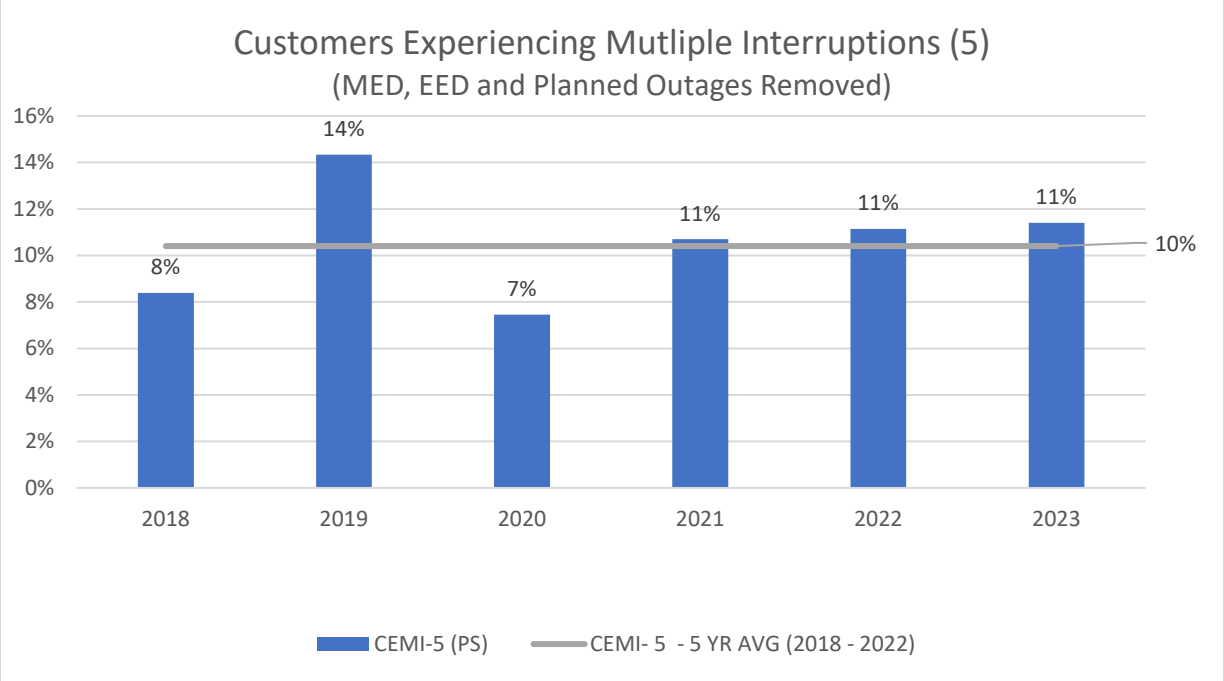
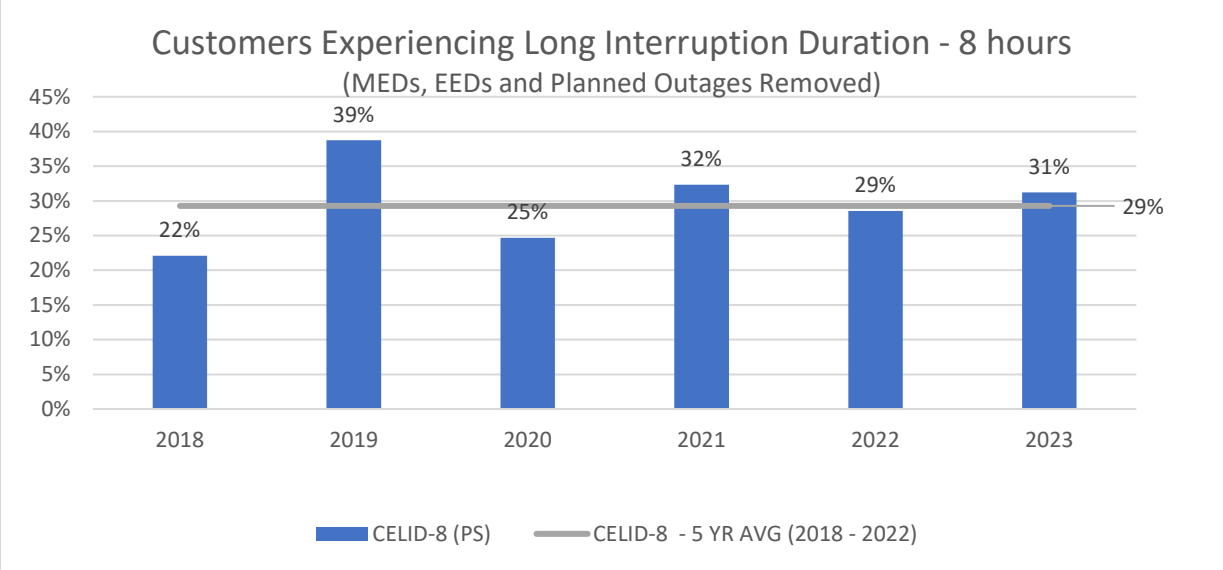


Figure 45 – Percentage of Customers Experiencing Long Interruption Duration - 8 hours Cumulative (MEDs, EEDs and Planned Outages Removed)

	2017	2018	2019	2020	2021	2022	2023	5-Year Average (2018-2022)
CELID-8	27.1	22.1	38.8	24.7	32.3	28.5	31.2	29.3

Figure 46 – Customers Experiencing Long Interruption Duration (CELID)-8 2018-2023



Per the Board's direction, NS Power has updated the analysis of other Electricity Canada utilities and explored to what extent they are utilizing these metrics. **Figure 47** shows the summarized results from Electricity Canada member utilities.

Figure 47 – Summary of Customer Level Reliability Metric Use by Electricity Canada Utilities

Utilities	CEMI	CELID	CEMM	OTHER
Ontario				
Alectra	No	No	No	No
Algonquin	No	No	No	No
Elexicon	No	No	No	No
FortisON	No	No	No	No
Hydro One	Yes	Yes	No	No
Hydro Ottawa	No	No	No	No
IESO	No	No	No	No
London Hydro	No	No	No	No
Oakville Hydro	No	No	No	No
OPG	No	No	No	No
Toronto Hydro	No	No	No	No
Utilities Kingston	No	No	No	No
British Columbia				
BC Hyrdo	Yes	No	No	No
Fortis BC	No	No	No	No
Saskatchewan				
Saskatoon Light & Power	No	No	No	No
SaskPower	No	No	No	No
Newfoundland and Labrador				

Utilities	CEMI	CELID	CEMM	OTHER
Newfoundland and Labrador Hydro	No	No	No	No
Newfoundland Power Inc.	No	No	No	No
New Brunswick				
New Brunswick Power	No	No	No	No
Saint John Energy	No	No	No	No
Alberta				
ENMAX	No	No	No	No
EPCOR	No	No	No	No
FortisAlberta	No	No	No	No
ATCO	No	No	No	No
Quebec				
Hydro Quebec	No	No	No	No
Manitoba				
Manitoba Hydro	No	No	No	No
Prince Edward Island				
Maritime Electric	No	No	No	No
Yukon				
Yukon Energy Corporation	No	No	No	No
ATCO Electric Yukon	No	No	No	No
Northwest Territories				
Northwest Territories Power Corporation	No	No	No	No

Utilities	CEMI	CELID	CEMM	OTHER
Northland Utilities (ATCO Electric)	No	No	No	No
Nunavut				
Qulliq Energy Corporation	No	No	No	No

This analysis included 32 Electricity Canada member utilities. Of the 32 utilities reviewed, only two currently measure customer-level reliability metrics: BC Hydro, which provides annual updates on CEMI-4 as part of its reliability reporting, and Hydro One which measures CEMI and CELID, but which tracks the information for internal purposes only. BC Hydro operates under significantly different conditions from NS Power, particularly with respect to exposure to severe weather events such as hurricanes. As such, NS Power does not consider BC Hydro's reported metrics for CEMI an appropriate comparator for benchmarking or target-setting. Manitoba Hydro previously tracked and reported CEMI-4 and CELID-8 as business unit performance measures between 2009 and 2012, but has since stopped tracking them.

With this information, and before considering imposition of standards in relation to this data, it will be important to understand how these metrics are being measured, used and reported in other jurisdictions. At present, there is limited data available to determine comparator values in other utilities or to establish benchmarks. NS Power will continue to monitor the use of customer-level reliability metrics and will continue to report on them annually.

5.0 MAJOR EVENT DAYS AND EXTREME EVENTS DAYS IN 2023

NS Power experienced 10 event days in 2023: 1 EED and 9 MEDs.

The IEEE 1366-2012 Standard methodology defines a Major Event Day as:

> A day in which the daily System Average Interruption Duration Index (SAIDI) exceeds a Major Event Day threshold value. For the purposes of calculating daily system SAIDI, any interruption that spans multiple calendar days is accrued to the day on which the interruption began. Statistically, days having a daily system SAIDI greater than T_{med} are days on which the energy delivery system experienced stresses beyond that normally expected (such as during severe weather). Activities that occur on Major Event Days should be separately analyzed and reported.[30]

SEDs, MEDs, and EEDs are defined by the same standard methodology as the IEEE 1366-2012 standard but with different beta values:

- Significant Events: 2.0 Beta
- Major Events: 2.5 Beta
- Extreme Events: 3.5 Beta[31]

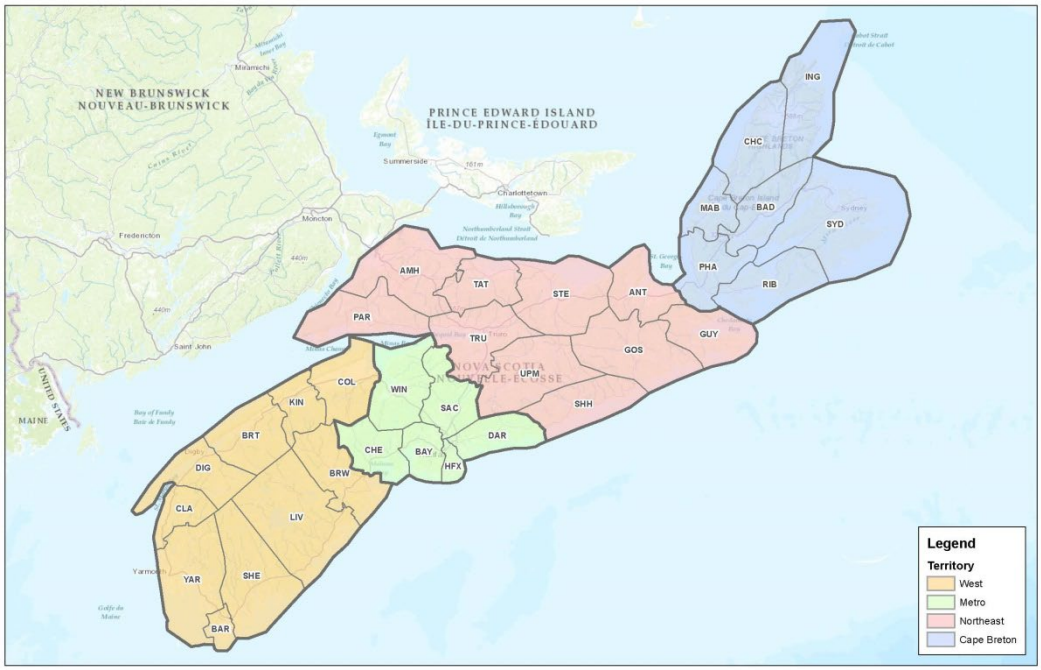
Using the IEEE methodology, in 2023 the customer hours of interruption (CHI) threshold for an SED is 90,997, a MED is 231,214 CHI, and an EED is 1,492,000 CHI. This means that the accumulated CHI during a 24-hour period must exceed these thresholds for the day to be subject to the corresponding adverse weather response standards.

In the sections below NS Power summarizes each of the Major and Extreme event days experienced in 2023 and outlines the specific information requested by the NSUARB. The Company's four territories described in the following sections are as indicated on the map in **Figure 48** below. Further, the geographical areas referenced in the wind speed level tables

[30] M07387, Exhibit N-23, LEI Response to Undertaking 1, September 23, 2016, page 16.
[31] M07387, Exhibit N-1, London Economics International LLC, Consultation Paper: Setting Performance Standards for Nova Scotia's electricity sector, May 15, 2016, page 55.

provided follow the weather reporting zones listed by RWDI (formerly Scotia Weather Service).[32]

Figure 48 – NS Power's Operational Territories



Comparative information about all ten event days in 2023 is provided in **Appendix N**.

5.1 Major Event Day – January 26, 2023

The event on January 26th brought high winds and significant rainfall to most parts of the province. Winds were above warning levels (80 km/h) in most areas of the provice and as much as 50mm of rain was recorded in several areas.

All Performance Standards Metrics were met for the January 26, 2023 event. **Figure 49** below sets out the storm target and corresponding result.

[32] M08574, NS Power 2017 Annual Performance Standards Report, page 6.

Figure 49 – January 26, 2023 MED Performance Metrics

Metric	Target	Result	Outcome
Percentage of Customers Restored within 48 hours	91.98	99.99	Achieved
Notification of EOC Opening	Within 4 hours	EOC was not activated	n/a
Percentage of Outage Calls Answered in 45 seconds	85	97.74	Achieved
Percentage of Polite Disconnects	10	0.53	Achieved
ETRs Updated	Without Delay	Achieved	Achieved

5.1.1 SAIDI and SAIFI

The SAIDI and SAIFI results for the January 26, 2023 MED are set out in Figure 50.

Figure 50 – SAIDI and SAIFI Values for January 26, 2023 MED

Date	CI	CHI	SAIFI	SAIDI
January 26	81,878	267,179	0.15	0.50

5.1.2 Restoration Profile and Restoration Challenges

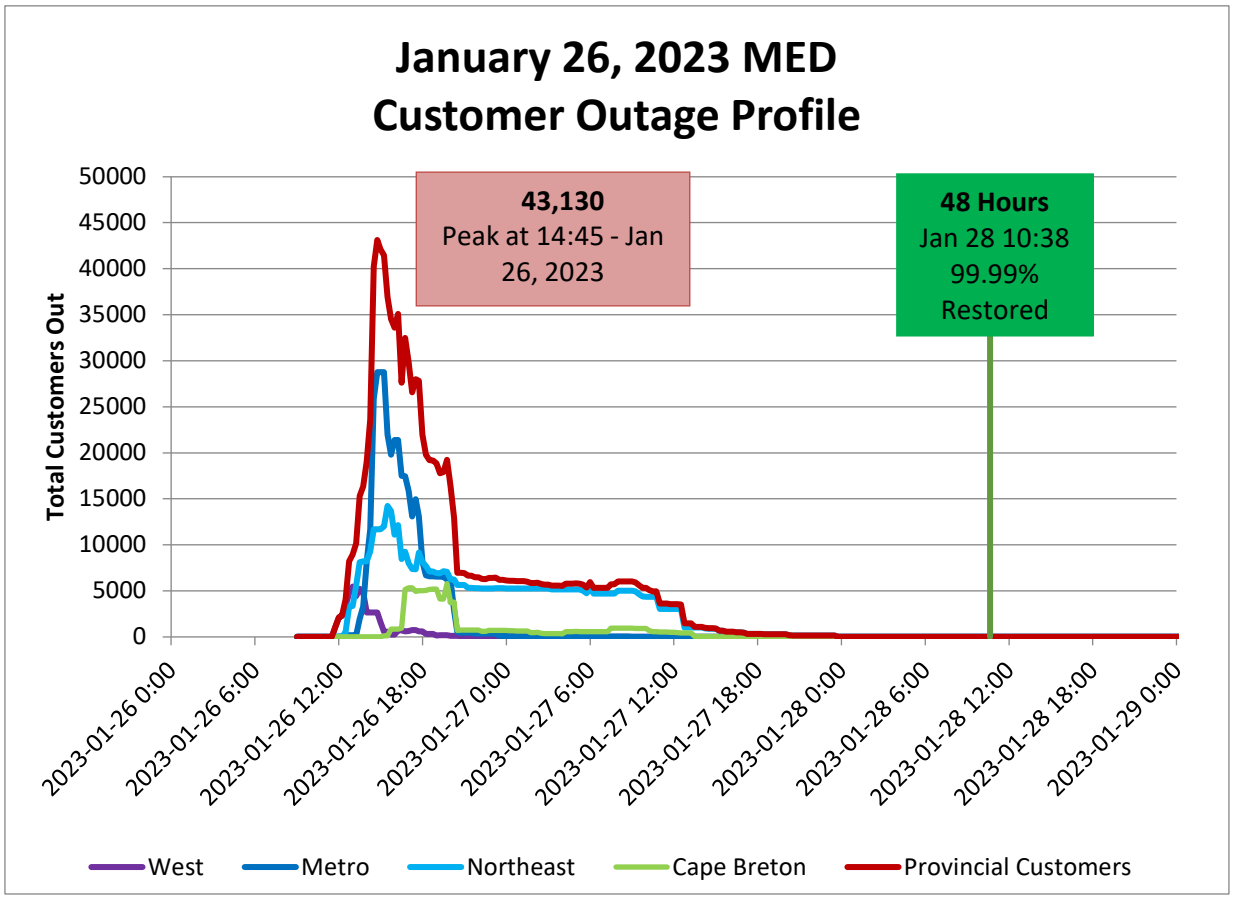
The January 26, 2023 MED resulted from a combination of high winds and heavy rainfall. Significant winds began late in the morning of January 26th, before subsiding in the early morning of the 27th. Heavy rainfall made travel difficult, resulting in prolonged outages for some customers. The leading cause of outages in most areas was trees contacting the power lines. Peak wind gusts for each region are detailed below in **Figure 51.**

Figure 51 – January 26, 2023 Peak Gusts by Region

Region	Peak Gust (km/h)
Valley	78
South Shore	89
Northern	78
Northeast	82
Metro	91
Eastern Shore	100
CB West	115
CB East	102

The customer outage profile shown in **Figure 52** shows that 99.99 percent of all customer interruptions from the January 26th MED were restored within the first 48 hours of the event.

Figure 52 – Customer Outage Profile for January 26, 2023 MED



5.1.3 Customer Service Results

NS Power's Customer Care Centre received 19,638 calls during the January 26, 2023 MED. 97.74 percent of calls were answered within the 45-second target. 80.58 percent of customers calling were satisfied with the information received through the HVCA system, while 3,588 customers elected to speak to a CSA. Customers calling the Outage Line can report an outage or receive their outage information directly without having to speak to a CSA. The HVCA system provides information about the outage, including the ETR, outage cause and current status. After receiving the details, customers can choose to continue to speak to a CSA. **Figure 53** details the Customer Service Storm Metrics for the January 26, 2023 MED.

Figure 53 – Customer Service Storm Metrics for January 26, 2023 MED

Metrics	Volume
Total Outage Calls Received	19,638
HVCA Satisfied (Self Service)	15,824
Agent Answered (Voice)	3,588
Percentage HVCA Satisfied	80.58
# of Polite Disconnects	19
Average Speed of Answer (in second)	18
Service Level (Percentage Answered in 45 Seconds or Less)	97.74

5.1.4 Crew Information

NS Power mobilized over 380 field personnel to restore power for the January 26, 2023 MED as detailed in **Figure 54**. Over 50 contractor crews joined NS Power's internal resources to restore power to customers.

Figure 54 – Crew Information for January 26, 2023 MED

Resource	Region	Resource Count
NS Power Powerline Technicians	Cape Breton	36
	Metro	50
	Northeast	28
	West	40
	Cape Breton	42

Resource	Region	Resource Count
External Powerline Technicians	Metro	20
	Northeast	36
	West	4
Forestry Workers	Cape Breton	21
	Metro	21
	Northeast	42
	West	24
Transmission Line PLTs & Operators	Cape Breton	6
	Metro	n/a
	Northeast	6
	West	6
	Total	382

5.2 Major Event Day – February 4, 2023

The event on February 4, 2023 brought a period of strong winds and extreme low temperatures to the entire province. Winds were above warning levels (80 km/h) in four of the eight weather regions in the province. Air temperatures as low as -27ºC were recorded with wind chill temperatures reaching -42ºC.

All Performance Standards Metrics were met for the February 4, 2023 event. **Figure 55** below sets out the storm target and corresponding result.

Figure 55 – February 4, 2023 MED Performance Metrics

Metric	Target	Result	Outcome
Percentage Restored within 48 hours	91.98	99.99	Achieved
Notification of EOC Opening	Within 4 hrs	Operations Coordination Team was activated	
Percentage of Outage Calls Answered in 45 seconds	85	96.76	Achieved
Percentage of Polite Disconnects	10	0.23	Achieved
ETRs Updated	Without Delay	Achieved	Achieved

5.2.1 SAIDI and SAIFI

The SAIDI and SAIFI results for the February 4, 2023 MED are set out in **Figure 56**.

Figure 56 – SAIDI and SAIFI Values for February 4, 2023 MED

Date	CI	CHI	SAIFI	SAIDI
February 4	100,028	260,162	0.19	0.49

5.2.2 Restoration Profile and Restoration Challenges

The February 4, 2023 MED resulted from a combination of high winds and extremely low temperatures. Beginning late on February 3, temperatures began to drop and in the morning of

February 4 the entire province was experiencing extreme cold temperatures. As the NS Power system experienced an all-time peak load of 2455 MW, some transmission and distribution equipment reached their design limits. Some customers experienced proactive rotating outages, while other customers experienced outages due to protective devices experiencing overload conditions. Challenges in restoration occurred in some situations where cold load pickup caused further protective devices to operate due to the spike in load immediately after restoration. Once temperatures began to rise, the demand on the system returned below limits of the protective devices and customers stopped experiencing further outages. Crews were available for restoration efforts throughout the weather event to respond to outages.

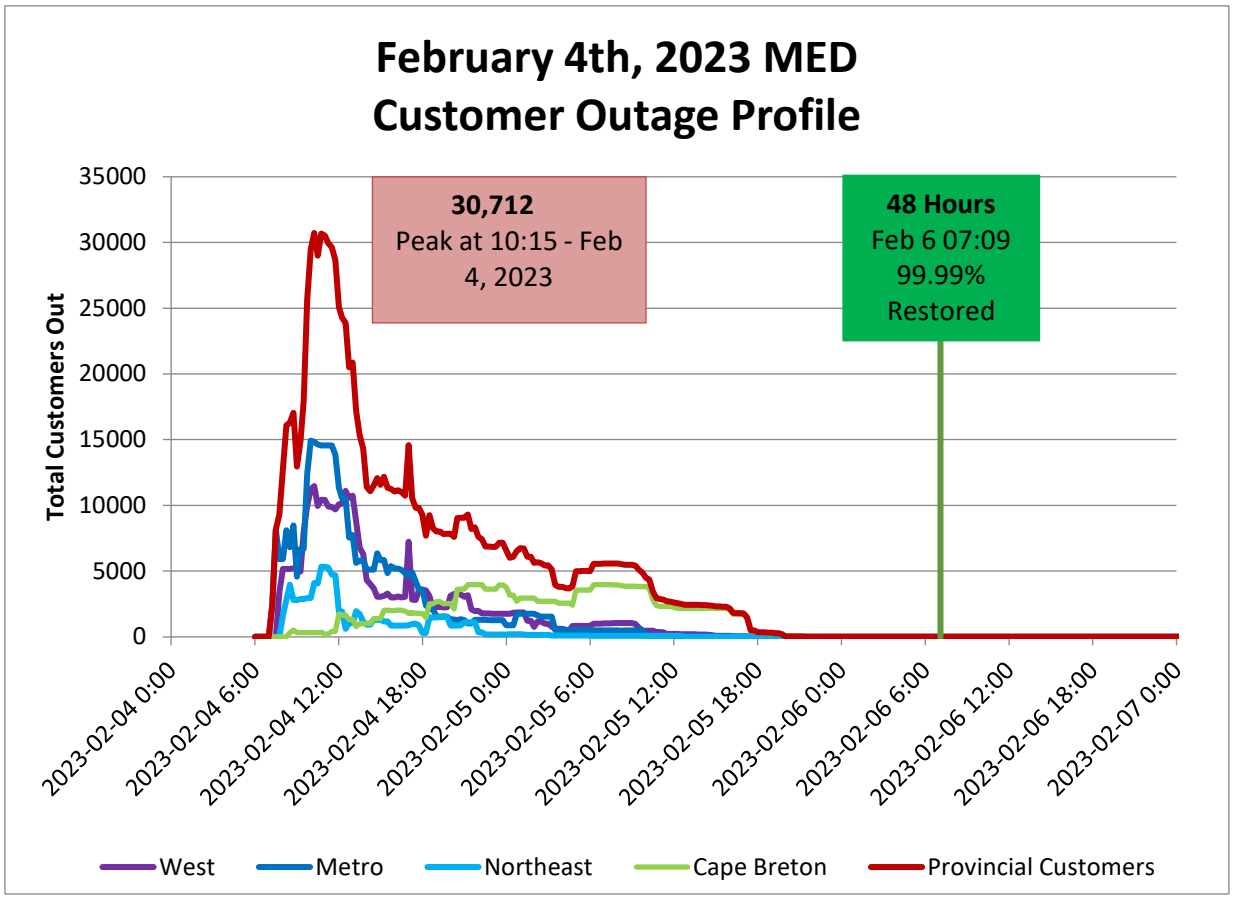
Peak wind gusts for each region are detailed below in **Figure 57**.

Figure 57 – February 4, 2023 Peak Gusts by Region

Region	Peak Gust (km/h)
Valley	76
South Shore	87
Northern	59
Northeast	85
Metro	76
Eastern Shore	85
CB West	95
CB East	78

The customer outage profile shown in **Figure 58** shows that 99.99 percent of all customer interruptions from the February 4 MED were restored within the first 48 hours of the event.

Figure 58 – Customer Outage Profile for February 4, 2023 MED



5.2.3 Customer Service Results

NS Power's Customer Care Centre received 37,353 calls during the February 4, 2023 MED. 96.76 percent of calls were answered within the 45 second metric. 81.06 percent of customers calling were satisfied with the information received through the HVCA system, while 6,541 customers elected to speak to a CSA. Customers calling the Outage Line can report an outage or receive their outage information directly without having to speak to a CSA. The HVCA system provides information about the outage, including the ETR, outage cause and current status. After receiving the details, customers can choose to continue to speak to a CSA. **Figure 59** details the Customer Service Storm Metrics for the February 4, 2023 MED.

Figure 59 – Customer Service Storm Metrics for February 4, 2023 MED

Metrics	Volume
Total Outage Calls Received	37,353
HVCA Satisfied (Self Service)	30,277
Agent Answered (Voice)	6,541
Percentage HVCA Satisfied	81.06
Number of Polite Disconnects	15
Average Speed of Answer (in seconds)	29
Service Level (Percentage Answered in 45 Seconds or Less)	96.76

5.2.4 Crew Information

NS Power mobilized over 250 field personnel to restore power for the February 4, 2023 MED as detailed in **Figure 60**. Over 40 contractor crews joined NS Power's internal resources to restore power to customers.

Figure 60 – Crew Information for February 4, 2023 MED

Resource	Region	Resource Count
NS Power Powerline Technicians	Cape Breton	34
	Metro	18
	Northeast	30
	West	40
	Cape Breton	30

Resource	Region	Resource Count
External Powerline Technicians	Metro	10
	Northeast	28
	West	16
Forestry Workers	Cape Breton	6
	Metro	NA
	Northeast	8
	West	12
Transmission Line PLTs & Operators	Cape Breton	6
	Metro	NA
	Northeast	6
	West	6
Transmission Damage Assessors	Cape Breton	2
	Metro	NA
	Northeast	2
	West	2
	Total Field Resources (individuals)	256

1

5.3 Major Event Day – July 21-22, 2023

The event on July 21 and 22, 2023 brought a period of extreme rainfall and significant lightning to the province. Tropical moisture funneled into Nova Scotia from the south bringing as much as 280 mm of rain. Due to some unique circumstances, the weather system moved over the same regions multiple times, causing flash flooding and significant thunderstorms. There were 23,008 lightning strikes in the two-day period, triple the historical average for July.

All Performance Standards Metrics were met for the July 21-22, 2023 event. **Figure 61** below sets out the storm target and corresponding result.

Figure 61 – July 21-22, 2023 MED Performance Metrics

Metric	Target	Result	Outcome
Percentage of Customers Restored within 48 hours	91.98	July 21: 99.49 July 22: 99.42	Achieved
Notification of EOC Opening	Within 4 hours	EOC was activated	Achieved
Percentage of Outage Calls Answered in 45 seconds	85	96.20	Achieved
Percentage of Polite Disconnects	10	0.06	Achieved
ETRs Updated	Without Delay	Achieved	Achieved

5.3.1 SAIDI and SAIFI

The SAIDI and SAIFI results for the July 21-22, 2023 MEDs are set out in **Figure 62**.

Figure 62 – SAIDI and SAIFI Values for July 21-22, 2023 MED

Date	CI	CHI	SAIFI	SAIDI
July 21	30,803	268,438	0.057	0.499
July 22	96,262	470,492	0.173	0.875

5.3.2 Restoration Profile and Restoration Challenges

The July 21-22, 2023 MED resulted from a stalled or repeating weather system over parts of Nova scotia on July 21. Record numbers of lightning strikes often damaged equipment while extreme rainfall amounts made accessing outages difficult. In some cases where flooding existed, electrical equipment was inaccessible until flood waters receded. Winds were not a major contributing factor to the outage events.

Peak wind gusts for each region are detailed below in **Figure 63.**

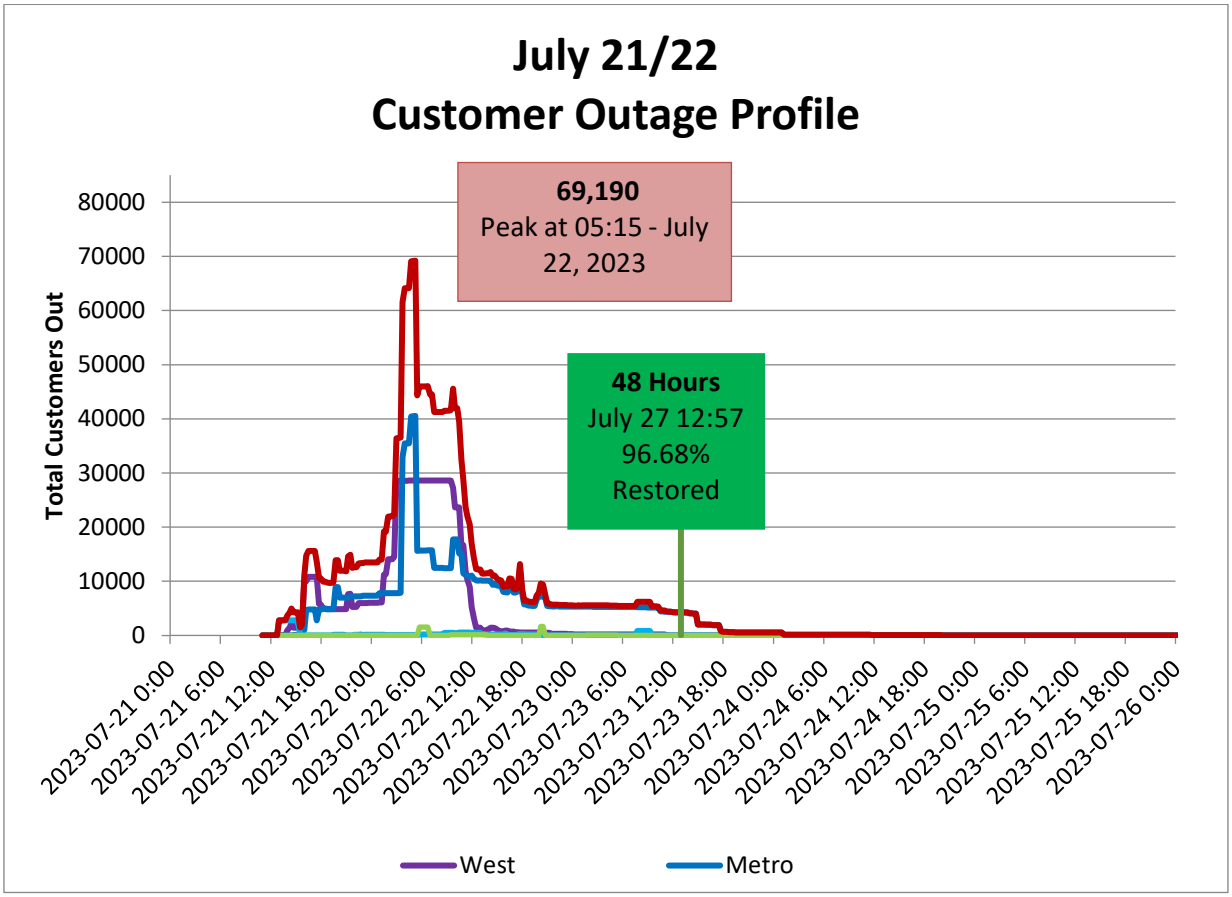
Figure 63 – July 21-22, 2023 Peak Gusts by Region

Region	Peak Gust (km/h)
Valley	35
South Shore	35
Northern	46
Northeast	35
Metro	31
Eastern Shore	39

Region	Peak Gust (km/h)
CB West	48
CB East	43

The customer outage profile shown in **Figure 64** shows that 96.68 percent of all customer interruptions were restored within 48 hours of the first outage attributed to the weather event.

Figure 64 – Customer Outage Profile for July 21-22, 2023 MED



5.3.3 Customer Service Results

NS Power's Customer Care Centre received 25,369 calls during the July 21-22, 2023 MEDs. 96.20 percent of calls were answered within the 45-second target. 83.11 percent of customers

calling were satisfied with the information received through the HVCA system, while 3,555 customers elected to speak to a CSA. **Figure 65** details the Customer Service Storm Metrics for the July 21-22, 2023 MED.

Figure 65 – Customer Service Storm Metrics for July 21-22, 2023 MEDs

Metrics	Volume
Total Outage Calls Received	25,369
HVCA Satisfied (Self Service)	21,085
Agent Answered (Voice)	3,555
Percentage HVCA Satisfied	83.11
Number of Polite Disconnects	2
Average Speed of Answer (in seconds)	55
Service Level (Percentage Answered in 45 Seconds or Less)	96.20

5.3.4 Crew Information

NS Power mobilized almost 300 field personnel to restore power for the July 21-22, 2023 MEDs as detailed in **Figure 66**. Over 80 contractor crews joined NS Power's internal resources to restore power to customers.

Figure 66 – Crew Information for July 21-22, 2023 MED

Resource	Region	Resource Count
NS Power Powerline Technicians	Cape Breton	24
	Metro	34
	Northeast	20
	West	46
External Powerline Technicians	Cape Breton	2
	Metro	114
	Northeast	28
	West	16
Forestry Workers	Cape Breton	n/a
	Metro	n/a
	Northeast	n/a
	West	n/a
Transmission Line PLTs & Operators	Cape Breton	n/a
	Metro	n/a
	Northeast	n/a
	West	12
	Total Field Resources (individuals)	296

5.3.5 Media Releases

In addition to issuing a media release, the Company communicated the EOC activation notice, along with regular storm updates, via NS Power's social media and website. Storm communication to stakeholders, including media, employees, and government, is provided throughout each EOC event. NS Power staffs appropriately for the increasing amount of social media activity during storms.

Please refer to **Appendix E** for copies of the notifications of EOC opening and media releases issues by NS Power with respect to this event.

5.4 Post-Tropical Storm Lee – September 16-17, 2023

On September 16, 2023 Post-Tropical Storm Lee made landfall over Long Island in Digby County with a central pressure estimated at 970 millibars. Post-Tropical Storm Lee slowly moved across Nova Scotia, bringing high winds and heavy rain to much of the province. The Metro region experienced 17 consecutive hours of wind gusts over 75 km/h and many other areas of the province also experienced many consecutive hours of significant winds. September 16 met the Extreme Event Day threshold with 4.05 million Customer Hours of Interruption while September 17 met the Major Event Day threshold with 352,000 Customer Hours of Interruption.

Figure 67 - Power Line Damage from Post Tropical Storm Lee

Figure 68 - Post Tropical Storm Lee Response

Figure 69 - Broken Distribution Poles during Post Tropical Storm Lee

All Performance Standards Metrics were met for Post Tropical Storm Lee. **Figure 70** below sets out the storm targets and corresponding results.

Figure 70 – September 16-17, 2023 EED & MED Performance Metrics

Metric	Target	Result	Outcome
Percentage of Customers Restored within 48 hours	EED: 78.38 MED:91.98	September 16 (EED): 96.40% September 17 (MED): 94.87%	Achieved
Notification of EOC Opening	Within 4 hrs	Achieved	Achieved
Percentage of Outage Calls Answered in 45 seconds	85	99.80	Achieved
Percentage of Polite Disconnects	10	0.31	Achieved
ETRs Updated	Without Delay	Achieved	Achieved

5.4.1 SAIDI and SAIFI

The SAIDI and SAIFI results for Post-Tropical Storm Lee are set out in **Figure 71**.

Figure 71 – SAIDI and SAIFI Values for September 16-17, 2023 EED & MED

Date	CI	CHI	SAIFI	SAIDI
September 16	437,287	4,053,376	0.81	7.54
September 17	48,107	352,762	0.09	0.66

5.4.2 Restoration Profile and Restoration Challenges

Post-Tropical Storm Lee resulted in an EED on September 16th and a MED on September 17th. The prolonged period of high winds limited crews' ability to work aloft in their buckets until winds subsided below 80 km/h. The high winds brought down poles and trees and left debris on roads, making accessing certain areas difficult.

Peak wind gusts for each region are detailed below in **Figure 72.**

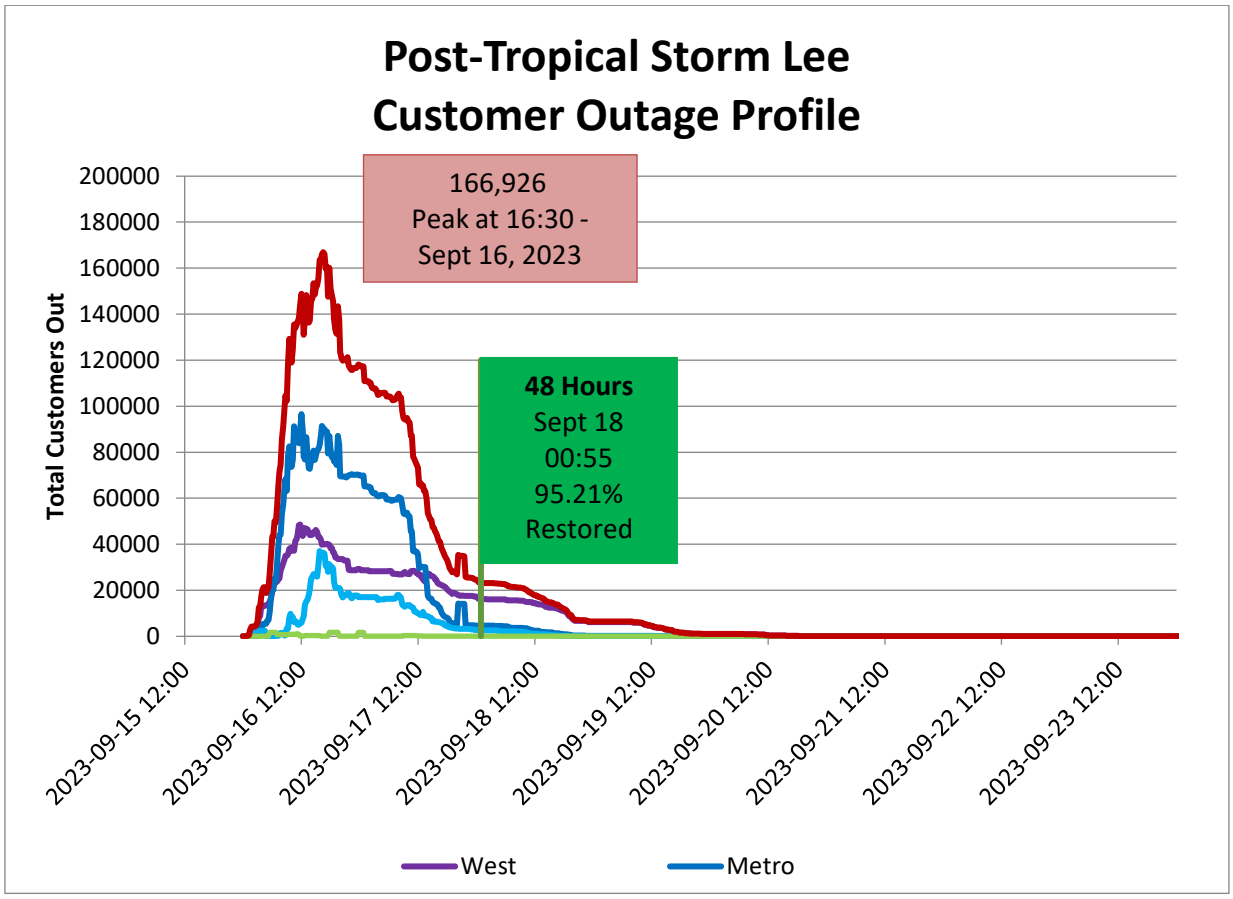
Figure 72 – Post-Tropical Storm Lee Peak Gusts by Region

Region	Peak Gust (km/h)
Valley	93
South Shore	80
Northern	61
Northeast	NA*
Metro	107
Eastern Shore	102
CB West	72
CB East	69

*The representative station for this area was not reporting consistently during this event.

The customer outage profile shown in **Figure 73** shows that 95.21 percent of all customer interruptions were restored within 48 hours of the first outage attributed to the weather event.

Figure 73 – Customer Outage Profile for Post-Tropical Storm Lee



5.4.3 Customer Service Results

NS Power's Customer Care Centre received 101,584 calls from September 16-21. 99.80 percent of calls were answered within the 45-second target. 82.32 percent of customers calling were satisfied with the information received through the HVCA system, while 17,624 customers elected to speak to a CSA.

Figure 74 details the Customer Service Storm Metrics for Post- Tropical Storm Lee.

Figure 74 – Customer Service Storm Metrics for Post-Tropical Storm Lee

Metrics	Volume
Total Outage Calls Received	101,584
HVCA Satisfied (Self Service)	83,619
Agent Answered (Voice)	17,624
Percentage HVCA Satisfied	82.32%
Number of Polite Disconnects	55
Average Speed of Answer (in seconds)	2
Service Level (Percentage Answered in 45 Seconds or Less)	99.80

5.4.4 Crew Information

NS Power mobilized over 800 field personnel to restore power for the Post-Tropical Storm Lee as detailed in **Figure 75**. Over 200 contractor crews joined NS Power's internal resources to restore power to customers.

Figure 75 – Resource Information for Post-Tropical Storm Lee

Resource	Region	Sep 17	Sep 18	Sep 19	Sep 20
NS Power Powerline Technicians	Cape Breton	30	30	36	36
	Metro	50	50	50	30
	Northeast	30	30	30	30
	West	44	44	50	50

Resource	Region	Sep 17	Sep 18	Sep 19	Sep 20
External Powerline Technicians	Cape Breton	6	0	0	0
	Metro	60	102	90	12
	Northeast	90	98	26	0
	West	152	222	246	208
Forestry Workers	Cape Breton	14	14	1	1
	Metro	28	40	42	43
	Northeast	61	61	39	24
	West	85	85	83	49
Transmission Line PLTs & Operators	Cape Breton	NA	NA	NA	NA
	Metro	6	6	6	6
	Northeast	6	6	6	6
	West	18	18	18	18
Distribution Damage Assessors	Cape Breton	0	0	0	0
	Metro	6	4	2	0
	Northeast	14	12	2	0
	West	22	22	5	0
Transmission Damage Assessors	Cape Breton	2	2	2	2
	Metro	2	2	2	2
	Northeast	4	4	4	4
	West	4	4	4	4
	Total Field Resources (individuals)	734	856	744	525

5.4.5 Media Releases

In addition to issuing a media release, the Company communicated the EOC activation notice, along with regular storm updates, via NS Power's social media and website. Storm communication to stakeholders, including media, employees, and government, is provided throughout each EOC event. NS Power staffs appropriately for the increasing amount of social media activity during storms.

Please refer to **Appendix E** for copies of the notifications of EOC opening and media releases issued by NS Power with respect to this event.

5.5 Major Event Day – December 11, 2023

The event on December 11, 2023 brought high winds and rainfall to most parts of the province. Winds were above warning levels (80 km/h) in every area of the province.

All Performance Standards Metrics were met for the December 11, 2023 event. **Figure 76** below sets out the storm target and corresponding result.

Figure 76 – December 11, 2023 MED Performance Metrics

Metric	Target	Result	Outcome
Percentage of Customers Restored within 48 hours	91.98	98.67	Achieved
Notification of EOC Opening	Within 4 hrs	Achieved	Achieved
Percentage of Outage Calls Answered in 45 seconds	85	99.75	Achieved

Metric	Target	Result	Outcome
Percentage of Polite Disconnects	10	24.33*	Achieved
ETRs Updated	Without Delay	Achieved	Achieved

* On December 11, 2023 NS Power experienced an issue with the HVCA system which resulted in an increase in polite disconnects. During this time, customers were able to report their outages and receive their expected restoration times through the automated service, but may have encountered a polite disconnect message if attempting to reach a live agent. The issue was intermittent and random, and required escalation to the system vendor for remediation. Upon escalation, the vendor was able to resolve the issue within six hours.

5.5.1 SAIDI and SAIFI

The SAIDI and SAIFI results for the December 11, 2023 MEDs are set out in **Figure 77**.

Figure 77 – SAIDI and SAIFI Values for December 11, 2023 MED

Date	CI	CHI	SAIFI	SAIDI
December 11	133,926	872,912	0.25	1.62

5.5.2 Restoration Profile and Restoration Challenges

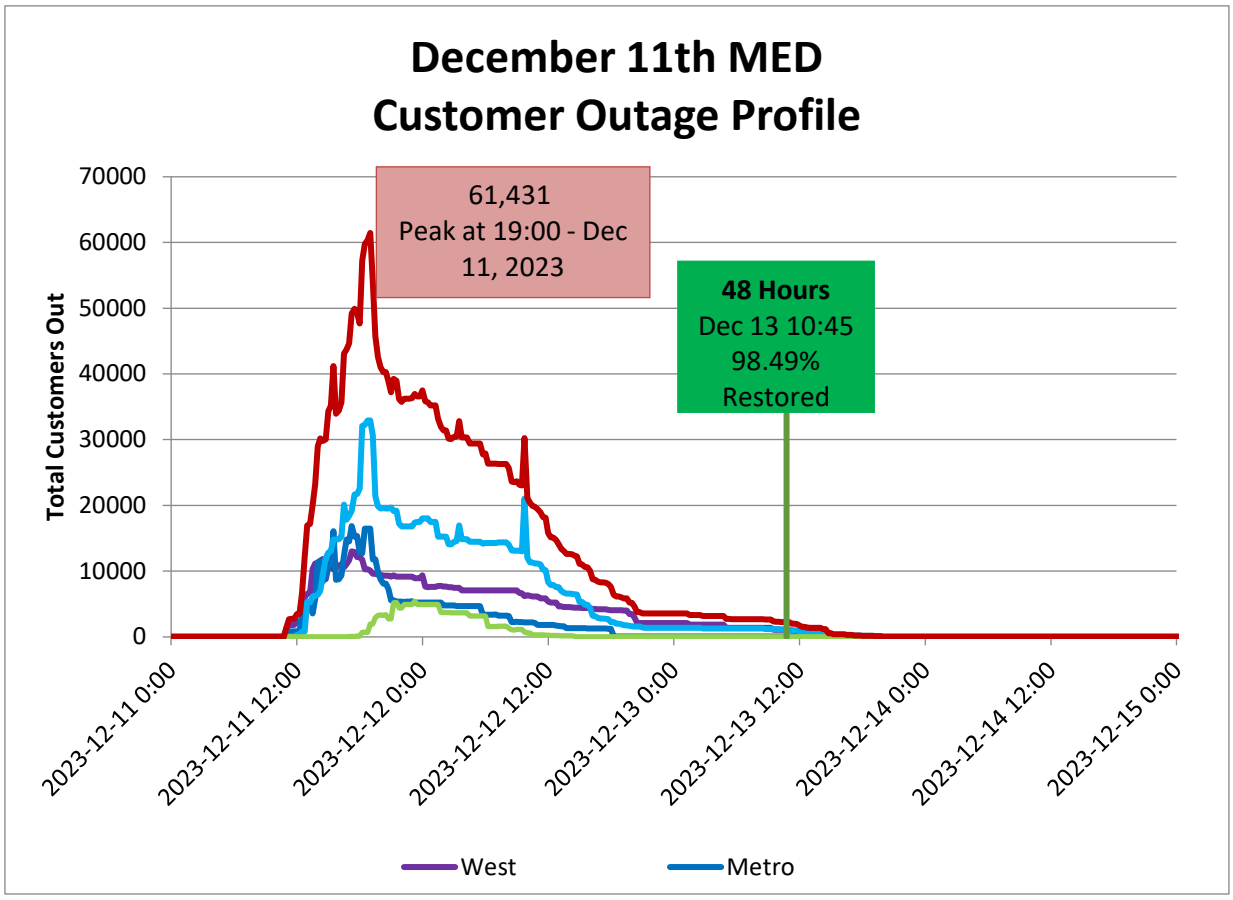
The December 11, 2023 MED resulted from a combination of high winds and rainfall. Significant winds began in the morning on December 11, moving from the western part of the province through the mainland before impacting Cape Breton. Significant winds persisted for much of the day on December 11, impacting travel in some regions. Peak wind gusts for each region are detailed below in **Figure 78.**

Figure 78 – December 11, 2023 Peak Gusts by Region

Region	Peak Gust (km/h)
Valley	89
South Shore	87
Northern	87
Northeast	91
Metro	91
Eastern Shore	81
CB West	93
CB East	91

The customer outage profile shown in **Figure 79** shows that 98.49 percent of all customer interruptions from the December 11 MED were restored within the first 48 hours of the event.

Figure 79 – Customer Outage Profile for December 11, 2023 MED



Customer Service Results

NS Power's Customer Care Centre received 40,868 calls during the December 11, 2023 MED. 99.75 percent of calls were answered within the 45-second target. 83.05 percent of customers calling were satisfied with the information received through the HVCA system, while 5,282 customers elected to speak to a CSA.

Figure 80 details the Customer Service Storm Metrics for the December 11, 2023 MED.

Figure 80 – Customer Service Storm Metrics for December 11, 2023 MED

Metrics	Volume
Total Outage Calls Received	40,868
HVCA Satisfied (Self Service)	33,940
Agent Answered (Voice)	5,282
Percentage HVCA Satisfied	83.05
Number of Polite Disconnects	1,698
Average Speed of Answer (in seconds)	4
Service Level (Percentage Answered in 45 Seconds or Less)	99.75

5.5.3 Crew Information

NS Power mobilized over 500 field personnel to restore power for the December 11, 2023 MED as detailed in **Figure 81**. Over 80 contractor crews joined NS Power's internal resources to restore power to customers.

Figure 81 – Crew Information for December 11, 2023 MED

Resource	Region	Resource Count
NS Power Powerline Technicians	Cape Breton	34
	Metro	44
	Northeast	34
	West	42

Resource	Region	Resource Count
External Powerline Technicians	Cape Breton	22
	Metro	8
	Northeast	80
	West	66
Forestry Workers	Cape Breton	46
	Metro	30
	Northeast	32
	West	32
Transmission Line PLTs & Operators	Cape Breton	NA
	Metro	NA
	Northeast	6
	West	6
Distribution Damage Assessors	Cape Breton	3
	Metro	7
	Northeast	5
	West	7
Transmission Damage Assessors	Cape Breton	2
	Metro	2
	Northeast	3
	West	4

Resource	Region	Resource Count
	Total Field Resources (individuals)	515

5.5.4 Media Releases

In addition to issuing a media release, the Company communicated the EOC activation notice, along with regular storm updates, via NS Power's social media and website. Storm communication to stakeholders, including media, employees, and government, is provided throughout each EOC event. NS Power staffs appropriately for the increasing amount of social media activity during storms.

Please refer to **Appendix E** for copies of the notifications of EOC opening and media releases issues by NS Power with respect to this event.

5.6 Major Event Day – December 18-19, 2023

The events on December 18 and 19, 2023 brought another series of high winds and heavy rainfall to most parts of the province. Winds were above warning levels (80 km/h) in every area of the province, with multiple regions experiencing wind gusts over 100 km/h. Temperatures were well above seasonal with weather stations in Debert and Grand Étang each recording an air temperature of 16ºC.

All Performance Standards Metrics were met for the December 18-19 event. **Figure 82** below sets out the storm target and corresponding result.

Figure 82 – December 18-19, 2023 MEDs Performance Metrics

Metric	Target	Result	Outcome
Percentage of Customers Restored within 48 hours	91.98	December 18: 97.26 December 19: 99.72	Achieved
Notification of EOC Opening	Within 4 hours	Achieved	Achieved
Percentage of Outage Calls Answered in 45 seconds	85	98.09	Achieved
Percentage of Polite Disconnects	10	0.06	Achieved
ETRs Updated	Without Delay	Achieved	Achieved

5.6.1 SAIDI and SAIFI

The SAIDI and SAIFI results for the December 18-19, 2023 MEDs are set out in **Figure 83**.

Figure 83 – SAIDI and SAIFI Values for December 18-19, 2023 MEDs

Date	CI	CHI	SAIFI	SAIDI
December 18	94,649	896,947	0.18	1.67
December 19	52,615	243,377	0.10	0.45

5.6.2 Restoration Profile and Restoration Challenges

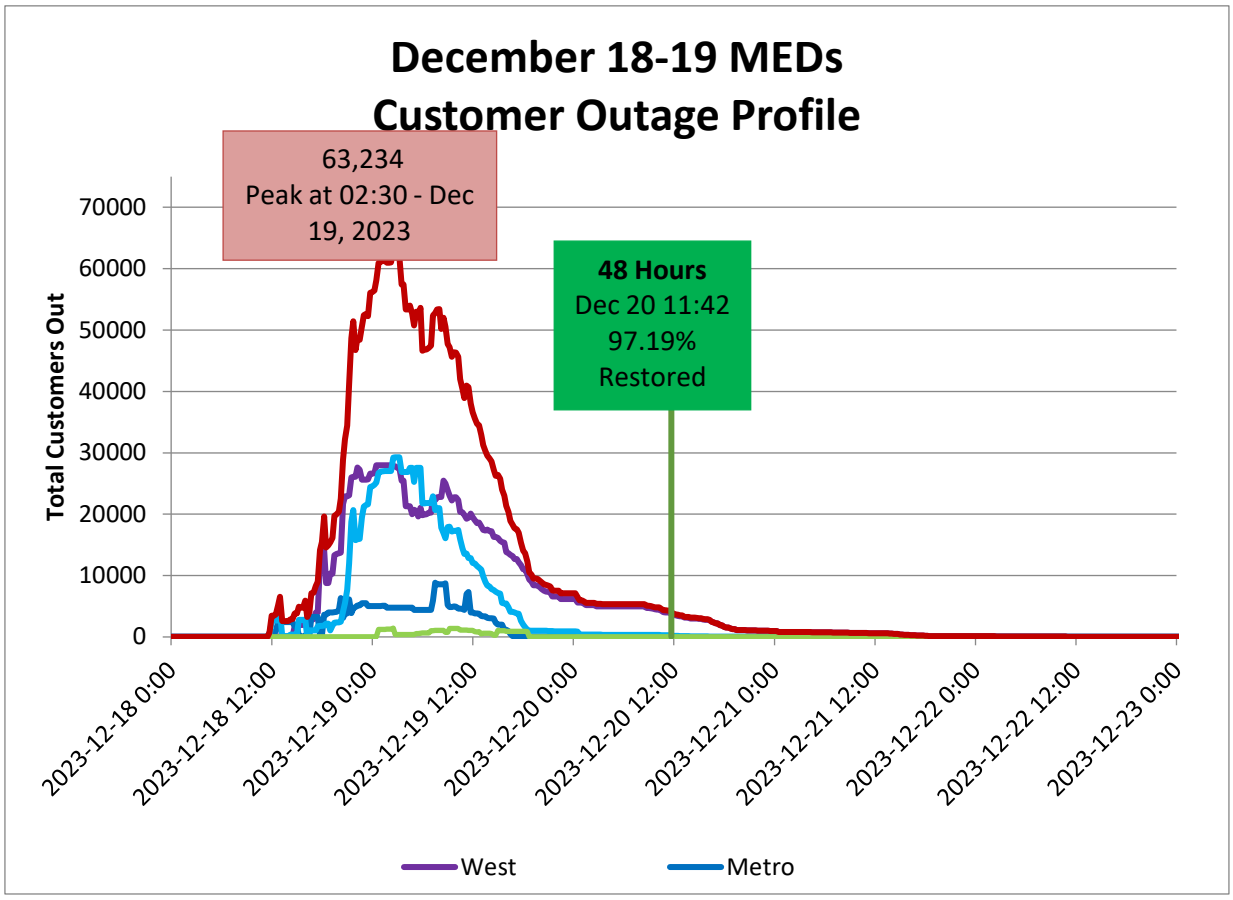
The December 18 and 19 MEDs resulted from an extended period of high winds and rainfall. Significant winds started in the Western part of the province in the evening of December 18 before moving through the Northern and Northeastern parts of the province overnight into December 19. With peak winds generally occurring overnight, restoration efforts began en masse on the morning of December 19. Peak wind gusts for each region are detailed below in **Figure 84.**

Figure 84 – December 18-19, 2023 Peak Gusts by Region

Region	Peak Gust (km/h)
Valley	107
South Shore	93
Northern	89
Northeast	96
Metro	94
Eastern Shore	93
CB West	111
CB East	91

The customer outage profile shown in **Figure 85** shows that 97.19 percent of all customer interruptions from the December 18-19 MEDs were restored within the first 48 hours of the event.

Figure 85 – Customer Outage Profile for December 18-19, 2023 MEDs



5.6.3 Customer Service Results

NS Power's Customer Care Centre received 44,763 calls during the December 18-19, 2023 MEDs. 98.09 percent of calls were answered within the 45-second target. 83.33 percent of customers calling were satisfied with the information received through the HVCA system, while 6,818 customers elected to speak to a CSA.

Figure 86 details the Customer Service Storm Metrics for the December 18-19, 2023 MEDs.

Figure 86 – Customer Service Storm Metrics for December 18-19, 2023 MEDs

Metrics	Volume
Total Outage Calls Received	44,763
HVCA Satisfied (Self Service)	37,302
Agent Answered (Voice)	6,818
Percentage HVCA Satisfied	83.33
Number of Polite Disconnects	4
Average Speed of Answer (in seconds)	25
Service Level (Percentage Answered in 45 Seconds or Less)	98.09

5.6.4 Crew Information

NS Power mobilized over 700 field personnel to restore power for the December 18-19, 2023 MEDs as detailed in **Figure 87**. Over 140 contractor crews joined NS Power's internal resources to restore power to customers.

Figure 87 – Crew Information for December 18-19, 2023 MEDs

Resource	Region	Resource Count
NS Power Powerline Technicians	Cape Breton	34
	Metro	26
	Northeast	34
	West	64

Resource	Region	Resource Count
External Powerline Technicians	Cape Breton	28
	Metro	0
	Northeast	126
	West	142
Forestry Workers	Cape Breton	27
	Metro	47
	Northeast	67
	West	65
Transmission Line PLTs & Operators	Cape Breton	12
	Metro	6
	Northeast	6
	West	6
Distribution Damage Assessors	Cape Breton	4
	Metro	7
	Northeast	10
	West	8
Transmission Damage Assessors	Cape Breton	2
	Metro	2
	Northeast	3
	West	4

Resource	Region	Resource Count
	Total Field Resources (individuals)	730

5.6.5 Media Releases

In addition to issuing a media release, the Company communicated the EOC activation notice, along with regular storm updates, via NS Power's social media and website. Storm communication to stakeholders, including media, employees, and government, is provided throughout each EOC event. NS Power staffs appropriately for the increasing amount of social media activity during storms.

Please refer to **Appendix E** for copies of the notifications of EOC opening and media releases issues by NS Power with respect to this event.

5.7 Major Event Day – December 21, 2023

The event on December 21, 2023 consisted of high winds, rain, freezing rain and snow in most parts of the province. Winds were above warning levels (80 km/h) in most areas of the province, with the Eastern Shore experiencing wind gusts over 100 km/h. This storm was the third major storm in ten days to impact the province.

All Performance Standards Metrics were met for the December 21, 2023 event. **Figure 88** below sets out the storm target and corresponding result.

Figure 88 – December 21, 2023 MED Performance Metrics

Metric	Target	Result	Outcome
Percentage of Customers Restored within 48 hours	91.98	99.81	Achieved
Notification of EOC Opening	Within 4 hours	EOC remained open from December 18 event	Achieved
Percentage of Outage Calls Answered in 45 seconds	85	99.30	Achieved
Percentage of Polite Disconnects	10	0.10	Achieved
ETRs Updated	Without Delay	Achieved	Achieved

5.7.1 SAIDI and SAIFI

The SAIDI and SAIFI results for the December 21, 2023 MED are set out in **Figure 89**.

Figure 89 – SAIDI and SAIFI Values for December 21, 2023 MED

Date	CI	CHI	SAIFI	SAIDI
December 21	99,213	371,998	0.18	0.69

5.7.2 Restoration Profile and Restoration Challenges

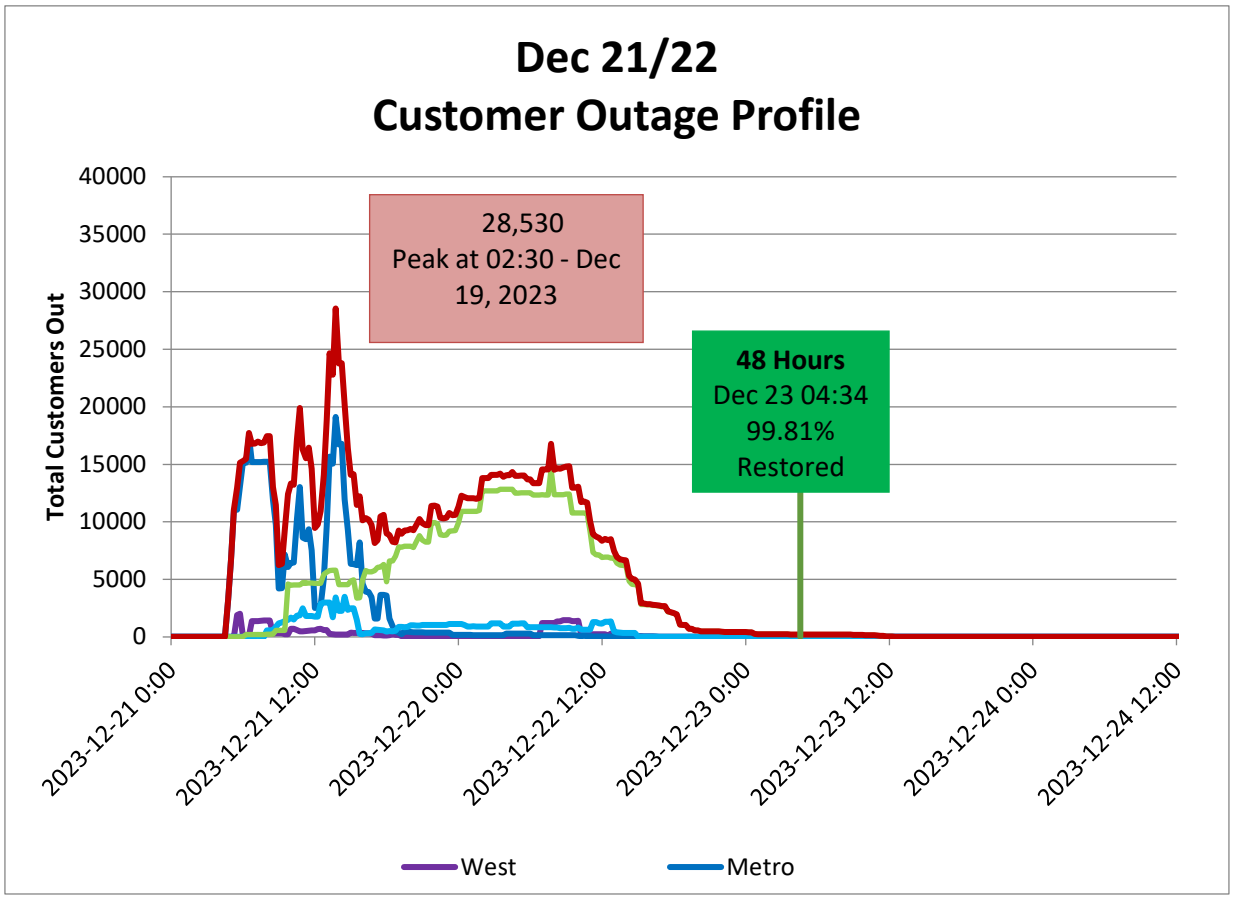
The December 21, 2023 MED resulted from an extended period of high winds and mixed precipitation, which followed the two MEDs on December 18 and 19 that had just occurred a few days before. Significant winds started on the morning of December 21 and continued until December 22. The strong winds remained for the majority of the day on December 21st, hampering restoration efforts. Grand Étang experienced wind gusts above warning levels for 24 consecutive hours. Peak wind gusts for each region are detailed below in **Figure 90.**

Figure 90 – December 21, 2023 Peak Gusts by Region

Region	Peak Gust (km/h)
Valley	65
South Shore	85
Northern	72
Northeast	83
Metro	89
Eastern Shore	102
CB West	94
CB East	96

The customer outage profile shown in **Figure 91** shows that 99.81 percent of all customer interruptions from the December 21 MED were restored within the first 48 hours of the event.

Figure 91 – Customer Outage Profile for December 21, 2023 MED



5.7.3 Customer Service Results

NS Power's Customer Care Centre received 24,123 calls during the December21, 2023 MED. 99.30 percent of calls were answered within the 45-second target. 79.61 percent of customers calling were satisfied with the information received through the HVCA system, while 4,781 customers elected to speak to a CSA.

Figure 92 details the Customer Service Storm Metrics for the December 21, 2023 MED.

Figure 92 – Customer Service Storm Metrics for December 21, 2023 MED

Metrics	Volume
Total Outage Calls Received	24,123
HVCA Satisfied (Self Service)	19204
Agent Answered (Voice)	4,781
Percentage HVCA Satisfied	79.61
Number of Polite Disconnects	5
Average Speed of Answer (in seconds)	7
Service Level (Percentage Answered in 45 Seconds or Less)	99.30

5.7.4 Crew Information

NS Power mobilized over 650 field personnel to restore power for the December 21, 2023 MED as detailed in **Figure 93**. Over 140 contractor crews joined NS Power's internal resources to restore power to customers.

Figure 93 – Crew Information for December 21, 2023 MED

Resource	Region	Resource Count
NS Power Powerline Technicians	Cape Breton	34
	Metro	36
	Northeast	46
	West	40

Resource	Region	Resource Count
External Powerline Technicians	Cape Breton	108
	Metro	12
	Northeast	26
	West	136
Forestry Workers	Cape Breton	27
	Metro	30
	Northeast	67
	West	76
Transmission Line PLTs & Operators	Cape Breton	12
	Metro	6
	Northeast	6
	West	6
Transmission Damage Assessors	Cape Breton	2
	Metro	2
	Northeast	3
	West	4
	Total Field Resources (individuals)	679

1

5.7.5 Media Releases

For the weather event on December 21, the EOC remained open from the previous weather event on December 18. Storm communication to stakeholders, including media, employees, and government, is provided throughout each EOC event. NS Power staffs appropriately for the increasing amount of social media activity during storms.

Please refer to **Appendix E** for copies of the notifications of EOC opening and media releases issues by NS Power with respect to this event.

6.0 PLANNED OUTAGES ON NS POWER'S SYSTEM

With respect to planned outages, the NSUARB directed the following in its 2017 Annual Performance Standards Report decision:

> The Board … directs NSPI to include a year-over-year comparative analysis of planned outages in its future annual reports. In addition, NSPI's reports are to include a summary of steps taken to reduce the number and duration of planned interruptions.[33]

Whenever practical and when it is safe to do so, NS Power completes planned reliability and upgrade work with the power line energized so that there is no outage impact to customers. In some circumstances, the line must be de-energized in order for the Powerline Technicians to complete the work safely. When a planned outage is required to complete reliability and upgrade work safely, NS Power follows an established Planned Outage Request process that incorporates outage mitigation considerations and planned outage approvals.

When it is necessary to schedule a planned outage, NS Power considers what can be done to minimize the number of customers affected by the outage and minimize the duration of the outage. This includes:

- Evaluating whether a portion of the load can be transferred to adjacent feeders, transmission lines or substations;
- Determining whether the customers can be sectionalized and back-fed from another feeder;
- Deciding whether multiple crews can be used to minimize the outage duration; and
- Determining whether load pick-up jumpers or circuit switchers can be installed.

The need for each planned outage is reviewed and approved by NS Power's operational personnel (Energy Delivery Supervisor, Regional Engineer, Operations Manager, or Director

[33] M08574, NS Power 2017 Annual Performance Standards Report, NSUARB Decision Letter, May 1, 2018, page 5.

Regional Operations). The level of approval required depends on the number of customers affected and the duration of the outage. These approvers validate the need for the planned outage to complete the reliability and capital line work safely and confirm that all outage mitigation considerations have been evaluated and will be in place to minimize the duration of the outage and the number of customers affected.

NS Power aims to provide enough advance notice to customers so that they can be prepared for the planned outage and, if required, make alternate plans. The Company's preference is to schedule the start time and duration of planned events with the customers' involvement, and in some cases planned outages are rescheduled to a time that works best for the majority of affected customers.

Safe work practices are reviewed regularly at NS Power. These important reviews are a key element of achieving world class safety and ensuring all NS Power employees go home safely each day. In the fall of 2023, NS Power field operations and engineering teams determined that a review of the safe work practice specifying the work methods of live secondary voltage lines was appropriate. Per company practice, while the safe work practice which details the procedures for working on lines of 600 V or less under live line conditions was under review, field personnel were instructed to proceed with all such work under de-energized conditions.

For the four-week period during which the work practice was under review, all secondary voltage work required a planned outage in order to proceed under de-energized conditions to ensure the safety of the field workers completing the planned work. The planned outages during November reflect this change.

The work practice was updated and reinstated as of November 27 and work was able to proceed from that time forward without the need for a planned outage. In the last few months of 2023, NS Power engaged a PLT contractor to obtain PCB samples from overhead distribution transformers per Environment and Climate Change Canda regulations. If a pole needed to be climbed, one of the methods for obtaining the sample required a brief outage of approximately

15 minutes. This work also contributed to the increased number of planned outages in the latter months of 2023.

The 2023 planned outage SAIDI and SAIFI values of 0.62 and 0.56 respectively are shown in **Figure 94**. There was an increase in planned outages, and therefore SAIFI, in 2023 due to the safe work practice review. The overall duration of planned outages decreased in 2023 relative to 2022.

On average, approximately 56 percent of NS Power customers experienced a planned outage event in 2023; the overall duration of these outages was approximately 1.97 hours, and on average they impacted 147 customers as shown in **Figure 95**. Both the average duration of a planned outage and the number of customers impacted by each planned outage decreased in 2023 over 2022.

Figure 96 provides the planned outage SAIDI value per month and **Figure 97** shows the planned SAIFI values by month for 2022 and 2023.

Figure 94 – 2022 and 2023 Planned Outage SAIDI and SAIFI

Year	Count of Planned Outages	Planned Outage SAIDI	Planned Outage SAIFI
2022	467	0.63	0.39
2023	1938	0.62	0.56

Figure 95 – Planned Outages 2023 vs 2022

Year	Average Duration of Planned Outage (hours)	Average Number of Customers Impacted by Outage
2022	2.98	440
2023	1.97	147

Figure 96 – 2022 and 2023 Planned Outage SAIDI by Month

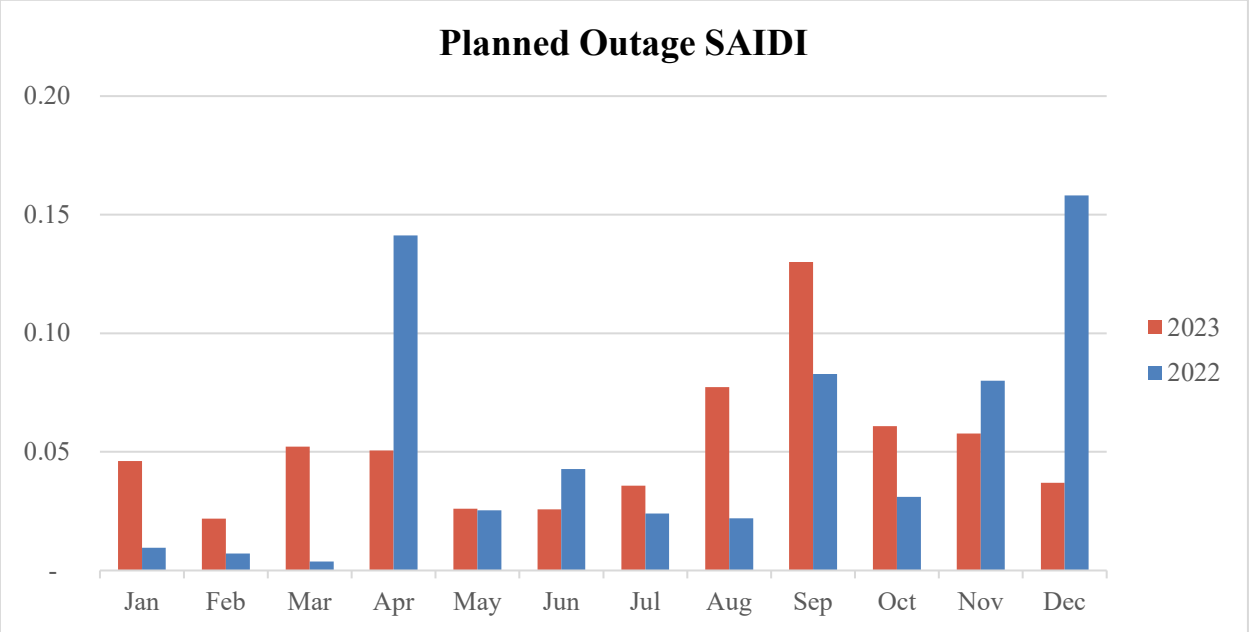
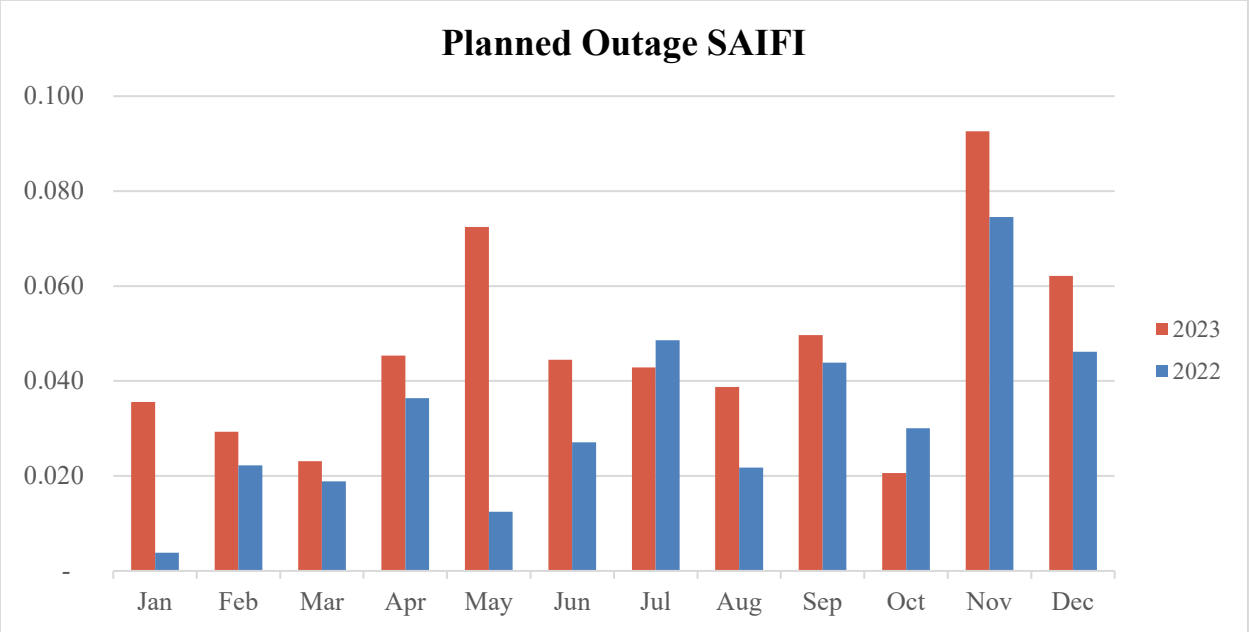


Figure 97 – 2022 and 2023 Planned Outage SAIFI by Month



During regular business operations, crews directly reach out to customers with a knock on their door to coordinate a brief outage to facilitate safely completing reliability and upgrade work in real time. These outages are not coded as planned outages.

Overall, there were more planned outages in 2023 than in 2022, as shown in **Figure 94** due to the review of secondary voltage work practices and methods. **Figure 98** further breaks down this planned outage data by month and **Figure 99** by outage type by month. Safely completing reliability and capital upgrade work accounted for most planned outages in 2023. 129 of the 1938 planned outages impacted a single customer and 996 impacted between 2 and 10 customers.

Figure 100 breaks down outage duration by outage type. Nova Scotia Power's commitment to investing in reliability and improving the resiliency in the power system is evident as planned outages associated with safely completing reliability and capital upgrades accounted for 52 and 38 percent respectively of total events.

Figure 98 – Planned Outages by Month

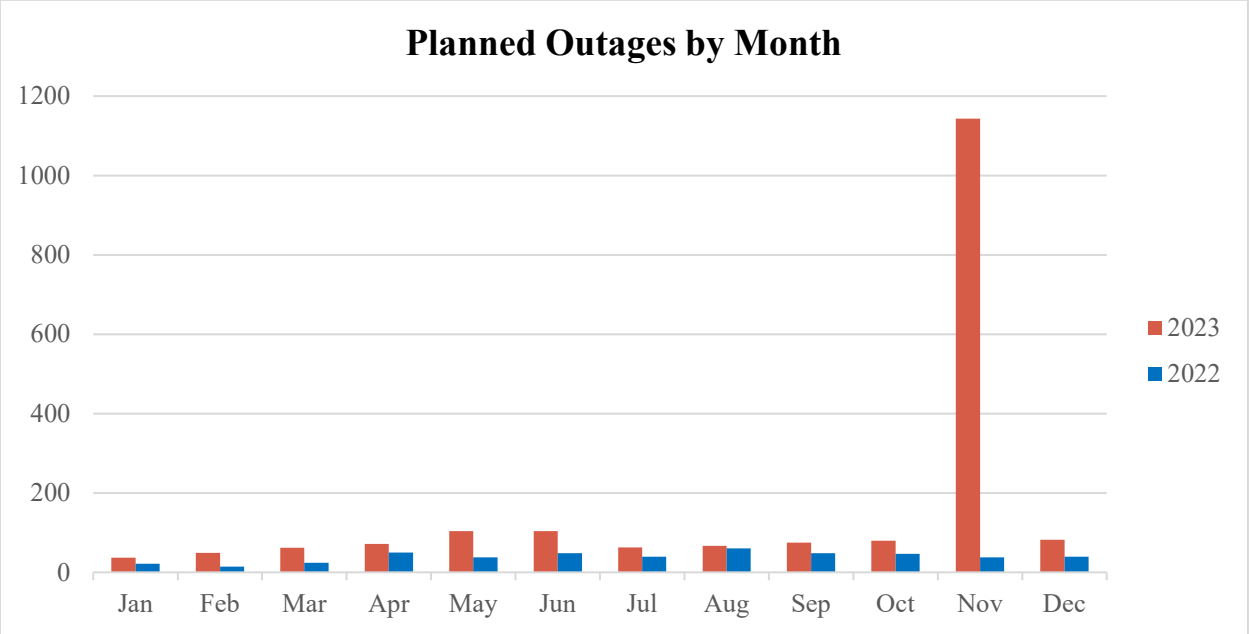


Figure 99 – Planned Outages by Type by Month

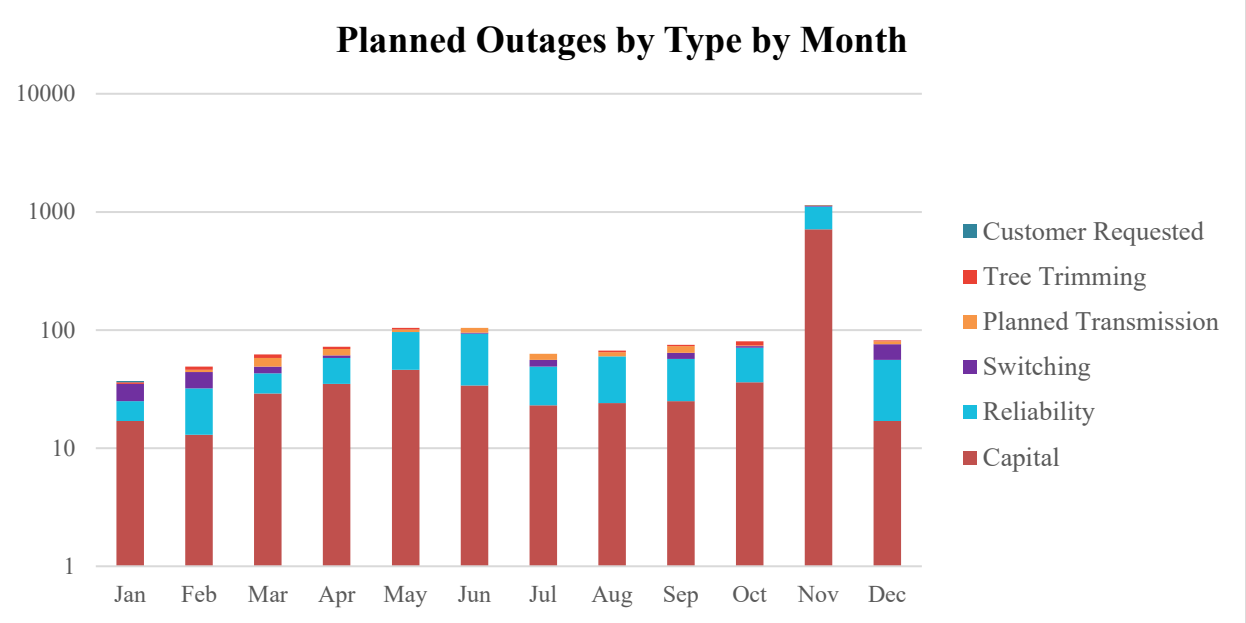
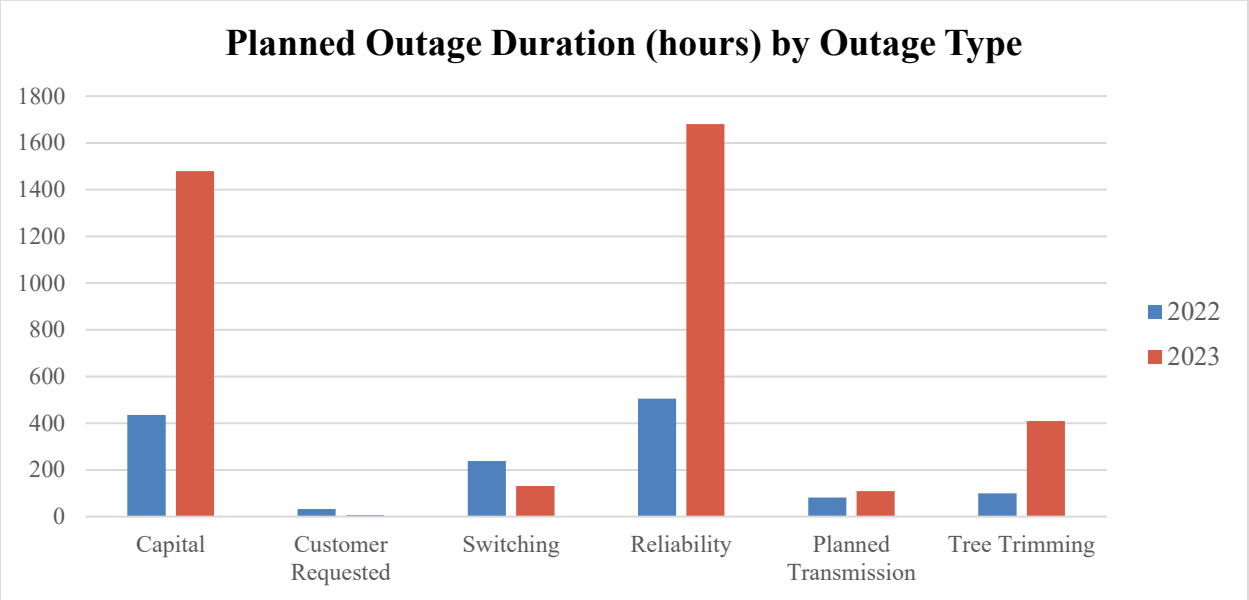


Figure 100 – Planned Outage Duration by Outage Type



Appendix K provides a detailed list of each of the 1938 planned outages in 2023.

NS Power seeks opportunities to perform work under live line techniques and avoid planned outages, but in some cases planned outages are required to complete work safely by employees and to ensure customer safety. In 2023, an important review of the secondary safe work practice and methods increased the total number of planned outages, but the average duration and number of customers impacted by planned outages decreased year over year.

7.0 2024 PERFORMANCE STANDARDS

The proposed 2024 Performance Targets are summarized in **Figure 101** and are submitted for the NSUARB's review and approval. The complete standards and the applicable derivations or calculations are fully set out in **Appendix O**.

Figure 101 – 2024 Performance Standards Targets

Standard	2024 Performance Targets
SAIDI	≤ 4.29
SAIFI	≤ 2.05
CKAIDI	91W-411*, 57S-401*, 11S-411, 4N-313*, 1W-411*
CKAIFI	57S-401*, 85S-401
Notification of EOC Opening	NS Power to notify customers of the decision to open the EOC within 4 hours of the decision to open.
Outage Call Answer Rate	A minimum of 85% of calls answered within 45 seconds at Customer Care Centre during severe outage events.
Polite Disconnects	10% or less annually
ETR Updates without delay	ETR updates provided without delay
Percent Customers restored in 48 hours	Significant Event Days – 95.05% customers restored within 48 hours
	Major Event Days - 91.98% customers restored within 48 hours
	Extreme Event Days 78.38% customers restored within 48 hours

Standard	2024 Performance Targets
Outage Report	Outage Report required for events impacting greater than 30,000 customers.
Regular Business Call Answer Rate	A minimum of 70% of calls shall be answered within 30 seconds at NS Power Customer Care Centre
Percent Estimated Bills	No more than 2% of customer bills shall be estimated annually
Customer Notification of Outages	Notify all customers of an outage as soon as NS Power has knowledge of an outage event.
New Service Connection Times	Service Installation No Pole: ≤3.0 days
	Service Installation Pole or Transformer: ≤4.9 days
	Service Installation Temporary to Permanent: ≤3.2 days
	Service Installation Line Extension <10 Poles: ≤6.2 days
	Service Installation Line Extension ≥10 Poles: ≤18.1 days

*New in 2023

8.0 CONCLUSION

Performance Standards establish clear objectives in the areas of reliability, customer service and adverse weather. The targets allow for transparency and provide NS Power customers and stakeholders with the opportunity to measure the utility's performance. NS Power continues to welcome and support these standards and appreciates the opportunity to demonstrate that these important targets are met and provide context and data if they are not.

NS Power met all 2023 Performance Standards approved by the Board except SAIDI, SAIFI and four out of five of the New Service Connection Targets. The Company remains committed to meet the established targets, despite formidable challenges posed by resource constraints, the escalating impact of climate change and the persistent growth in work volume.

NS Power is committed to increasing the complement of PLTs and is engaged in a North American recruitment drive for these resources. As outlined in the report, the Company has already begun the implementation of a five-year reliability plan and created a new Director of Reliability and four regional Reliability Advisor roles to ensure the increased investment plan is executed and aligned with customers' needs.

The Reliability Team was established in June of 2023 and a full supporting team of almost 60 employees is in place and operating. This team engaged with customers at 28 outreach sessions in 2023 to talk about the reliability investments happening in their communities and to listen to the challenges they experience. NS Power is moving forward with community reliability plans which are understood and aligned with customer needs.

Work volumes for customer-based work have increased by over 50 percent since 2020, which is reflected in the New Service Connection Time results. NS Power has responded to this growth by adding additional resources and has offset over 40 percent of the impact of this increase on new service connection times with careful management of this customer work. To bring the metric into alignment, even more resources are needed. The demand for skilled PLT resources has increased as utilities face similar challenges across North America. NS Power is

recruiting across North America and will continue to explore all opportunities to fill these roles including the partnership that is in place with NSCC to hire 8-10 new PLT graduates each year for the next five years.

Upgrades and investments in the power system, like the increase in vegetation management spend in 2023, are improving the experience for customers with respect to outage duration and frequency but these improvements are offset by the escalating impacts of climate change. In the last five years events such as record-breaking cold, flooding, wildfires, ice, hurricanes and accelerating wind have become commonplace. During this time, SAIDI and SAIFI results have held steady because of the positive impact of targeted investments in reliability over the last five years. Further, all problem feeders tracked under the CKAIDI and CKAIFI metrics met their targets in 2023.

In its decision issued on August 16, 2023 regarding the 2022 Performance Standards Annual Report, the NSUARB made the following statement:

> It is incumbent upon NS Power to appropriately address the challenges of climate change and adverse weather effects.

NS Power is aligned with the Board with respect to the imperative need to address climate change impacts. As such, this report has outlined ongoing standard updates to the class and strength of utility poles, highlighted an almost doubled investment in vegetation management and overall investment in the transmission and distribution system increasing to over $230 million in 2024. This reliability plan is outlined over a five-year period and these proven investments will positively impact the reliability experience while balancing affordability for customers.

NS Power is committed to meeting the Performance Standards as established by the Board. NS Power takes its responsibility to provide a safe, reliable power system as paramount and understands the importance of balancing investments while ensuring the lowest cost for customers.

Section 52E(1) of the PUA provides as follows with regard to the potential for the Board to issue an administrative penalty related to the Performance Standards:

> The amount of any administrative penalty to be paid by Nova Scotia Power Incorporated is the amount determined by the Board or prescribed by the regulations to be appropriate in order to promote future compliance with the performance standards and not for a punitive purpose or effect or for redressing a wrong done to society at large.

NS Power has demonstrated improvement in its Performance Standards results, having only narrowly missed three standards in 2023, and as outlined in this Report, it has developed robust plans to continue to address remaining issues, while at the same time striving for continuous improvement in the face of increasingly challenging circumstances. NS Power has also developed and committed to these plans while facing legislatively-imposed financial limitations.

As has been previously noted and discussed throughout this Report, NS Power is committed to meeting the Performance Standards. An administrative penalty is not required to incent or otherwise promote NS Power's future compliance with the Performance Standards. To the contrary, an administrative penalty would only serve to adversely impact NS Power's already challenging financial position and serve to hinder future investment.

As such, and given the foregoing, NS Power respectfully requests that the NSUARB accept the 2023 Annual Performance Standards Report without issuing an administrative penalty, and approve the Performance Standards for 2024 as set out in Section 7 above.

Appendix A

Regular Business Call Answer Response

Supporting Documentation

NS Power 2023 Results for Regular Business Calls Answered within 30 Seconds

		Total Interactions	Service Level MTD Percentage	Service Level YTD Percentage
Customer Care: 70 % Percentage of calls answered within 30 seconds	January	103,449	73.15	73.15
	February	78,666	69.83	71.72
	March	69,851	75.43	72.75
	April	64,271	74.24	73.05
	May	84,018	71.91	72.81
	June	86,506	74.75	73.16
	July	71,974	76.79	73.63
	August	81,438	77.42	74.11
	September	74,319	78.38	74.55
	October	73,708	66.74	73.82
	November	75,274	77.43	74.14
	December	118,869	92.73	76.36
	YTD	982,343		76.36

Appendix B

Customer Bills Estimated

Supporting Documentation

NS Power 2023 Results for Customer Bills Estimated

Month	Bills Produced	Bills Estimated	Percentage Estimated
January	343,138	1,801	0.5%
February	319,235	1,734	0.5%
March	333,710	1,752	0.5%
April	315,081	1,519	0.5%
May	341,289	1,878	0.6%
June	335,833	1,958	0.6%
July	332,663	2,207	0.7%
August	330,585	2,230	0.7%
September	334,261	3,876	1.2%
October	328,420	2,165	0.7%
November	333,529	1,455	0.4%
December	324,856	3,284	1.0%
YTD	**3,972,600**	**25,859**	**0.7%**

Appendix C

ETRS Communicated Without Delay & Outage Communication

Supporting Documentation

The following tables provide detail of the availability of the operational systems which process outage calls and manage outage map functionality. **Figure 1** shows data delivery details for ADMS (processes outage calls) and the Kubra Storm Centre (outage map). Data delivery refers to instances when the system was unavailable. **Figure 2** shows uptime information for the outage operational systems for 2023.

Figure 1: ADMS and Kubra Storm Centre data delivery details

System	Data delivery issue	Notes
ADMS-OMS	11	Primarily data synchronization or enterprise service bus issues.
Kubra Storm Centre	4	Kubra experienced server issues.

Figure 2: Outage Operational System Uptime and Comments

Application	2023 Uptime	Comments
ADMS	99.9%	612 mins total down-time over the year The down time consisted of a number of instances of shorter duration down- time which were quickly identified and addressed. The Contingency Process was activated in these instances.
NSP Outage Map (primary map)	99.8 %	The Kubra outage map system had four interruptions for 950 minutes of interruption in 2023.
BCP Outage Site (contingency site)	99.8 %	The Back up Contingency Site was available at all times during 2022 with the exception of two routine maintenance outages.

Application	2023 Uptime	Comments
HVCA	99.9%	The HVCA system experienced a service interruption on December 11th for 6 hours.
Social Media	100 %	Social Media Channels (ex., Twitter, Facebook, Instagram, etc.) were available with NS Power outage updates throughout 2022.

The data for the Outage Communication metric is provided by the NSPI Outage Management System and uptime reporting from the NSPI Outage Map website. The metric is derived to reconcile the time when new outages or changed ETRs are updated in the NSPI Outage Management System and the time that ETRs are sent to the NSPI Outage Map website. Any time that the NSPI Outage Map website is not available is factored into the final metric.

Appendix D

New Service Connection Times 2023 Supporting Data

Month	Average Number of Business Days (by Service Installation Type)				
	No Pole	Pole or Transformer	Temporary to Permanent	Line Extension <10 Poles	Line Extension ≥10 Poles
January	2.91	5.56	4.85	5.40	6.33
February	3.05	3.62	3.02	6.34	9.50
March	3.79	6.49	5.31	7.18	19.00
April	3.25	4.61	4.72	10.70	9.00
May	4.13	4.57	3.62	7.22	19.00
June	3.73	5.82	4.45	7.66	1.50
July	3.89	6.83	4.20	6.97	15.00
August	4.63	6.63	5.65	8.65	9.00
September	2.58	6.09	3.06	7.56	15.67
October	2.13	5.14	2.72	6.50	5.33
November	3.12	5.53	2.37	6.73	3.33
December	3.34	7.29	2.86	16.64	43.00
2023 YTD	**3.39**	**5.67**	**3.86**	**7.68**	**14.12**
2023 Target	3.0	4.9	3.2	6.2	18.1

The data for the New Service Connection Times metric is extracted from Maximo using NC-SD, NC-PTX, TP, NC-LE1, and NC-LE2 order types for all completed work for the month or timeframe desired.

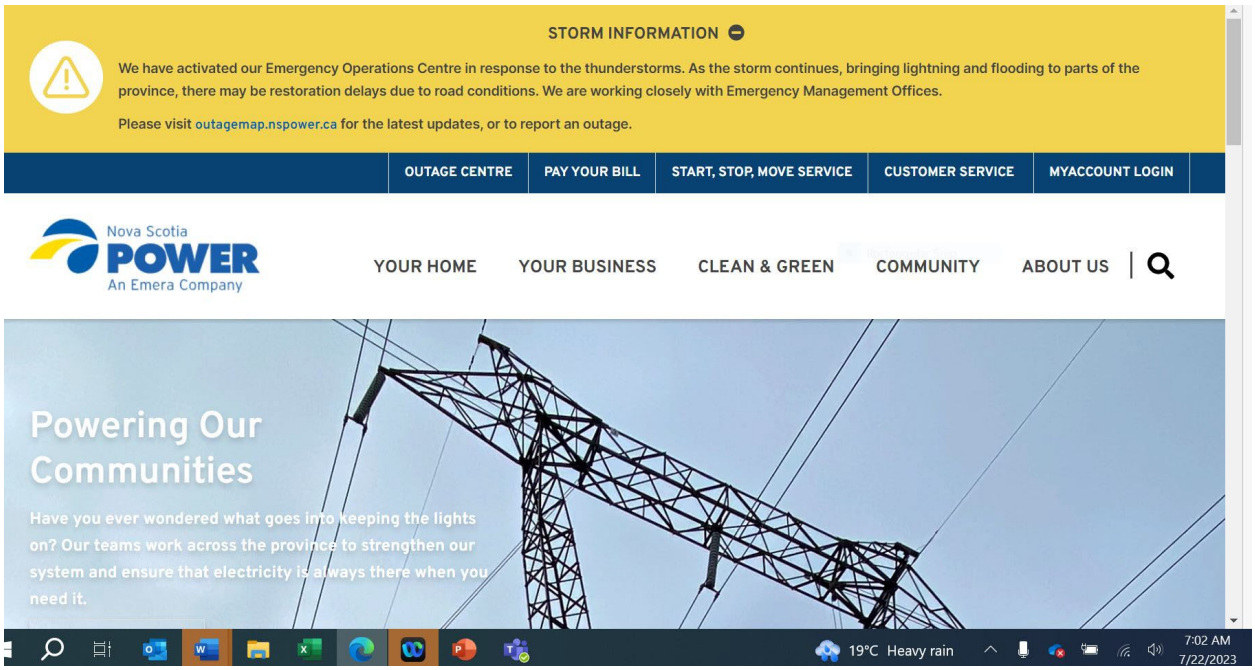
Appendix E

2023 Storm Day Media Communications Documentation

Storm Date	Communication Types	Date of Emergency Operations Centre Opening	Time of Emergency Operations Centre Opening
July 22, 2023	1. NS Power Website 2. Social Media	July 22, 2023	05:00
September 15, 2023	3. NS Power Website 4. Social Media	September 15, 2023	12:00
October 7, 2023	5. NS Power Website 6. Social Media	October 7, 2023	21:00
December 11, 2023	7. NS Power Website 8. Social Media	December 11, 2023	09:00
December 18, 2023	9. NS Power Website 10. Social Media	December 18, 2023	09:00

Supporting documentation for each storm date is provided below and numbered in accordance with the table above.

1. NS Power Website – July 22, 2023



2. Social Media - July 22, 2023

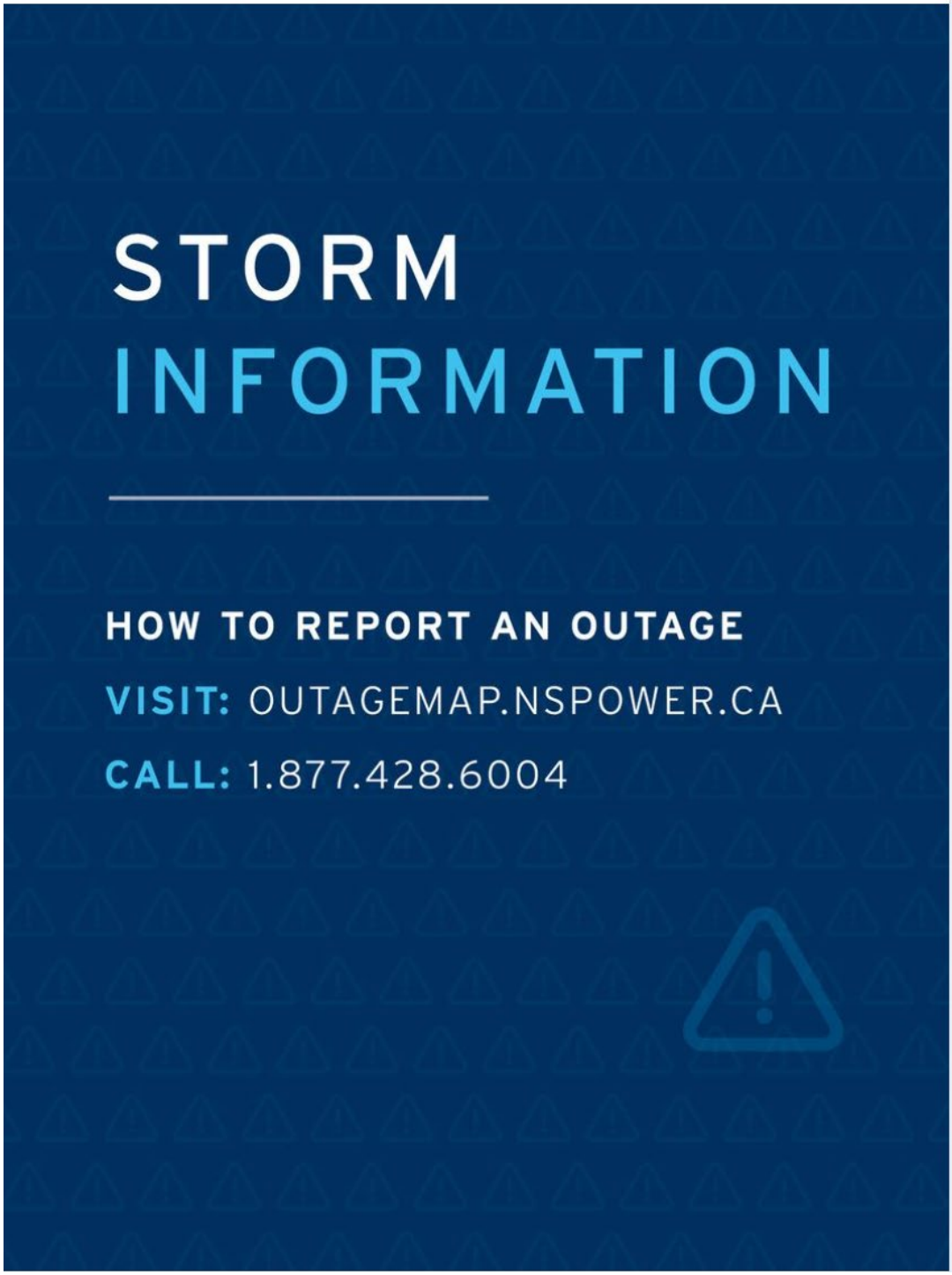
Twitter

Facebook

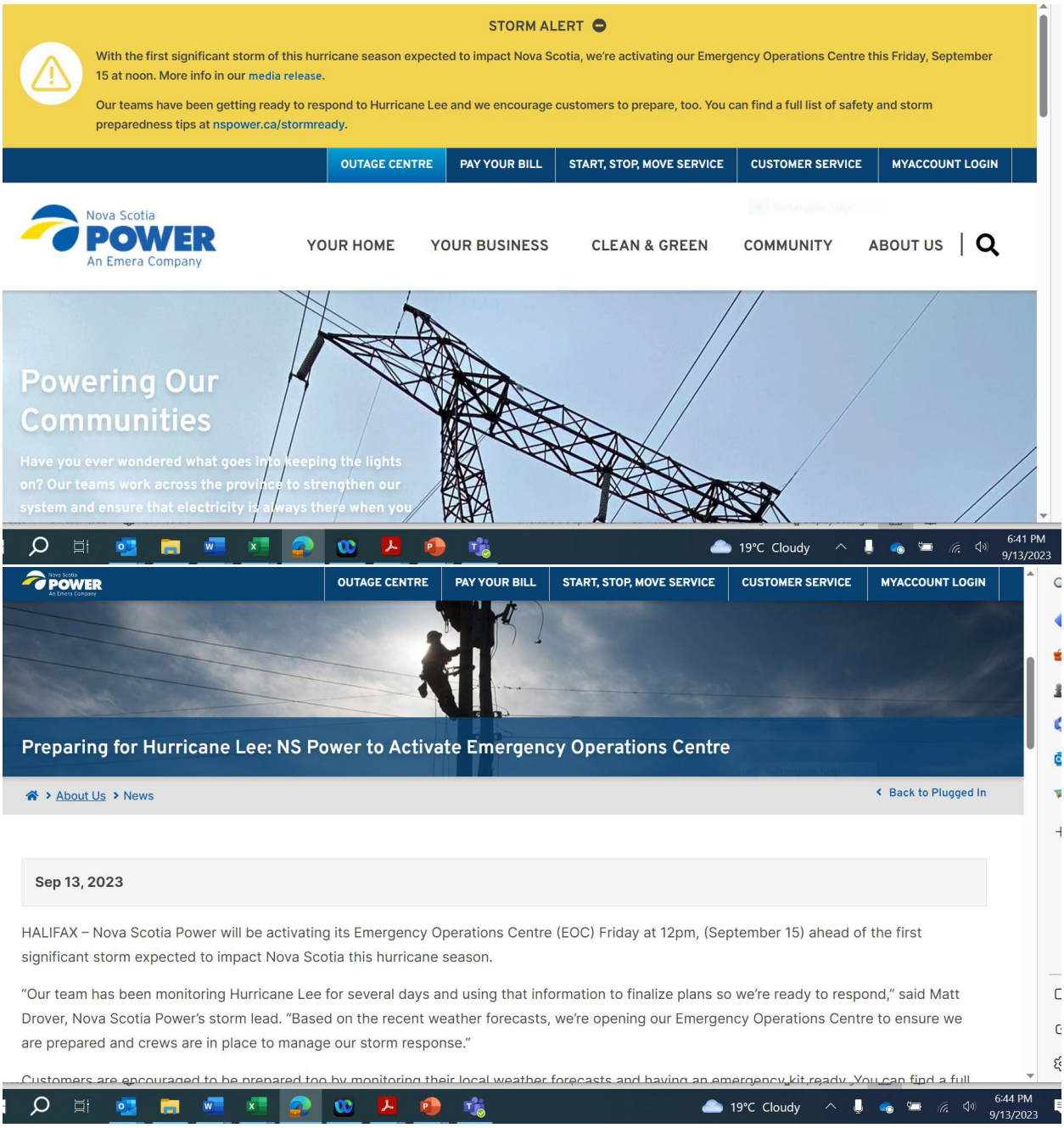
Nova Scotia Power
July 22, 2023 ·

We have activated our Emergency Operations Centre in response to the thunderstorms. As the storm continues, bringing lightning and flooding to parts of the province, there may be restoration delays due to road conditions. We are working closely with Emergency Management Offices.

Please visit http://outagemap.nspower.ca for the latest updates, or to report an outage.

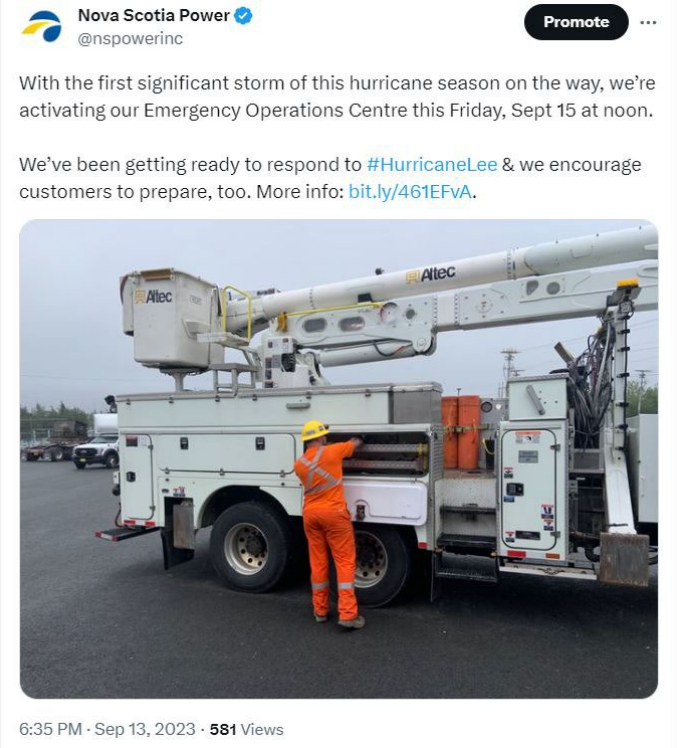


3. NS Power Website – September 15, 2023

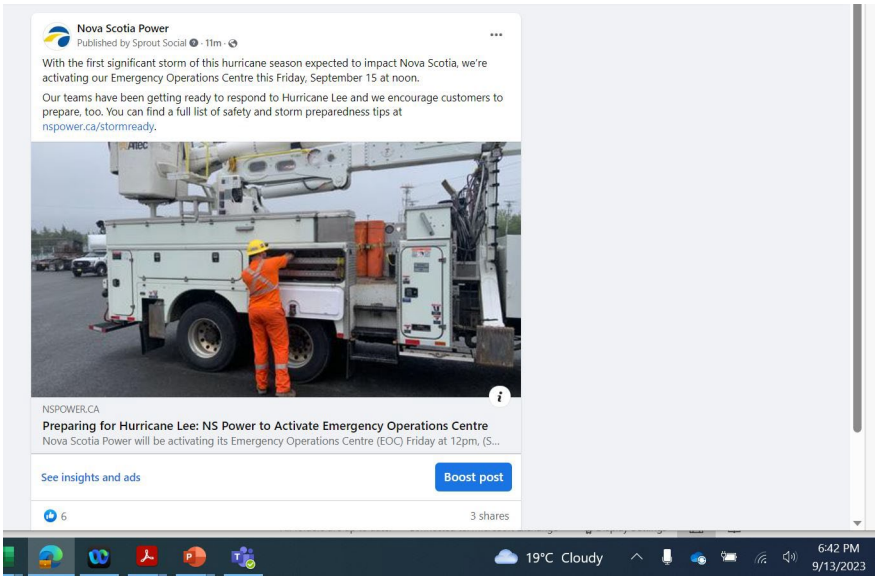


2. Social Media – September 15, 2023

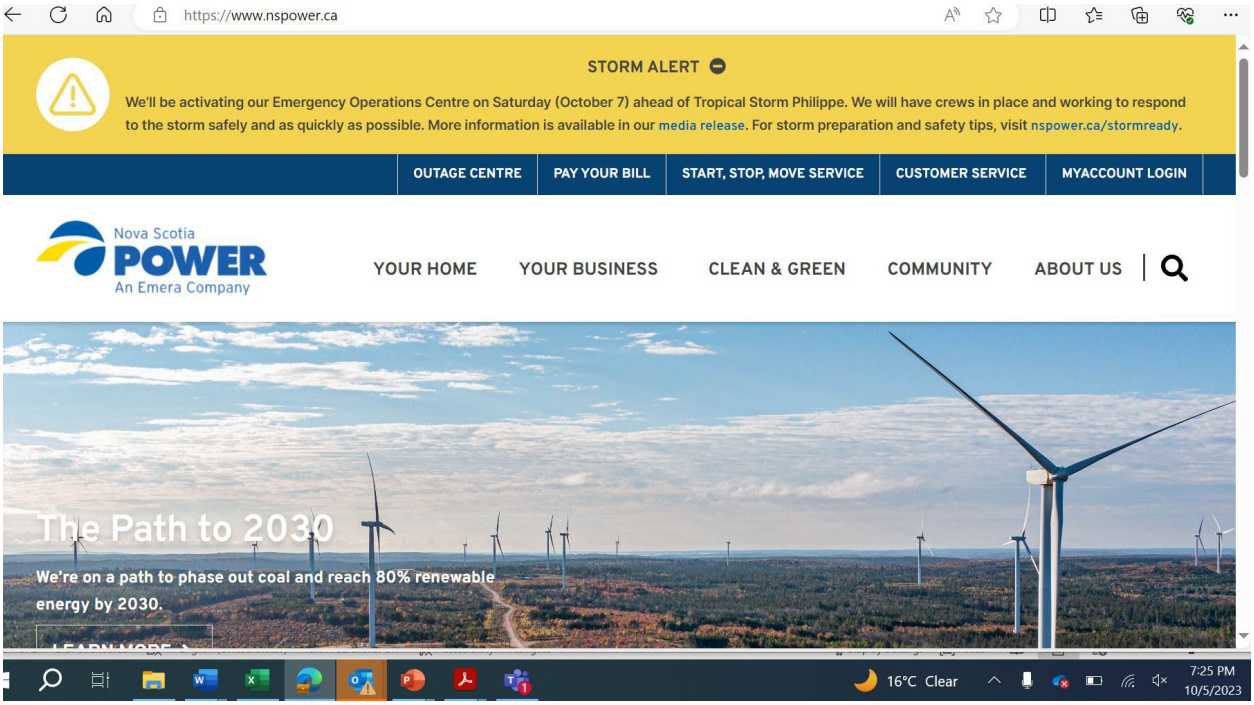
Twitter

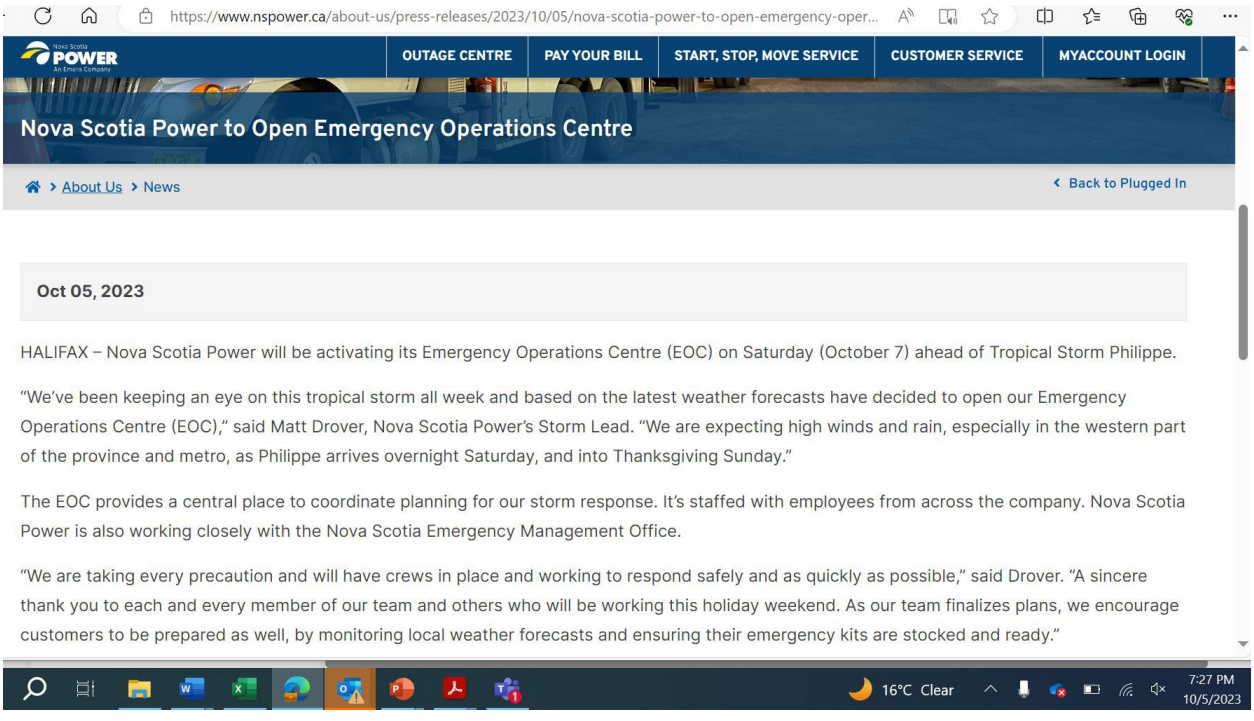


Facebook



3. NS Power Website – October 7, 2023





4. Social Media – October 7, 2023

Twitter

Pinned

Nova Scotia Power
@nspowerinc

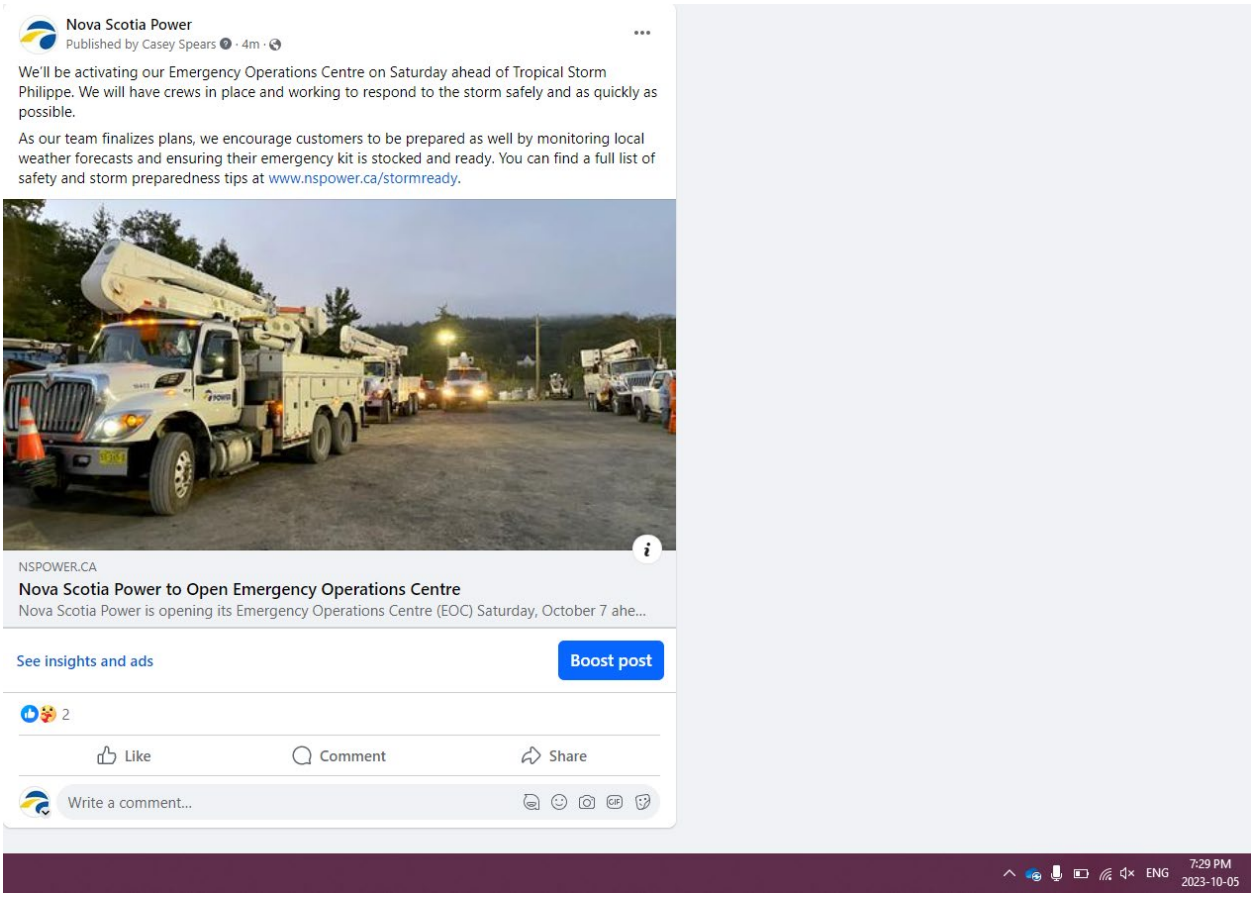
Promote ...

We'll be activating our Emergency Operations Centre on Saturday ahead of Tropical Storm Philippe. We will have crews in place and working to respond to the storm safely and as quickly as possible.

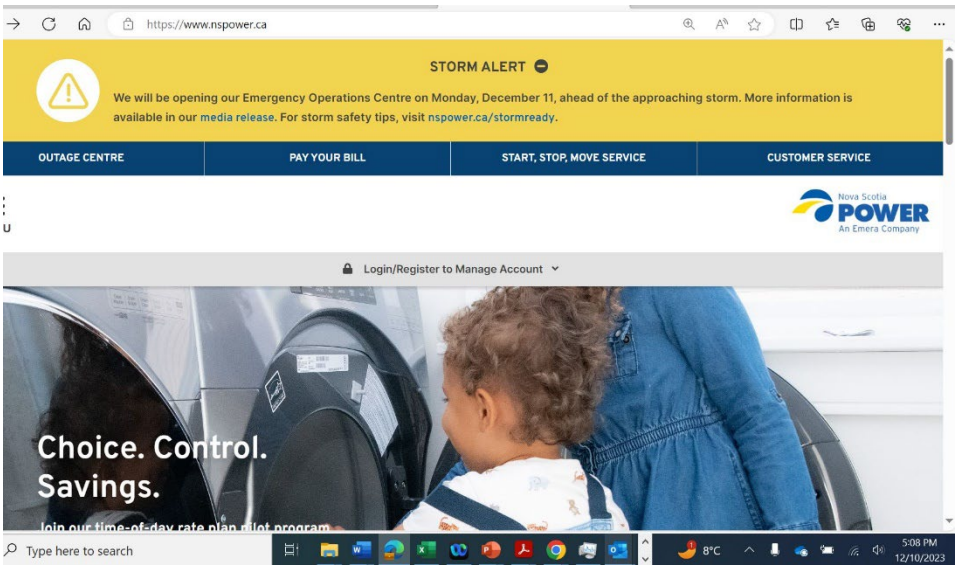
As our team finalizes plans, we encourage customers to be prepared as well by monitoring local weather forecasts and ensuring their emergency kit is stocked and ready. More information: bit.ly/46ClmJt

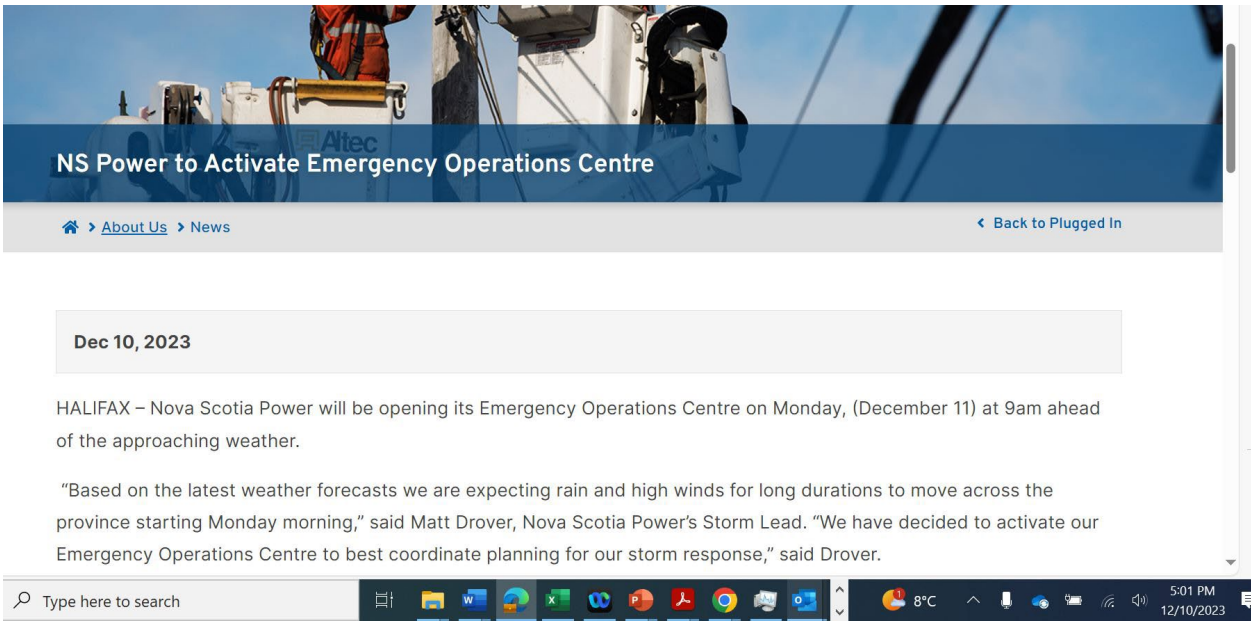
Last edited 7:23 PM · Oct 5, 2023 · **148** Views

Facebook


Nova Scotia Power
Published by Casey Spears · 4m ·
We'll be activating our Emergency Operations Centre on Saturday ahead of Tropical Storm Philippe. We will have crews in place and working to respond to the storm safely and as quickly as possible.
As our team finalizes plans, we encourage customers to be prepared as well by monitoring local weather forecasts and ensuring their emergency kit is stocked and ready. You can find a full list of safety and storm preparedness tips at www.nspower.ca/stormready.
NSPOWER.CA
Nova Scotia Power to Open Emergency Operations Centre
Nova Scotia Power is opening its Emergency Operations Centre (EOC) Saturday, October 7 ahe...
See insights and ads
Boost post
2
Like
Comment
Share
Write a comment...
ENG
7:29 PM
2023-10-05

5. NS Power Website – December 11, 2023

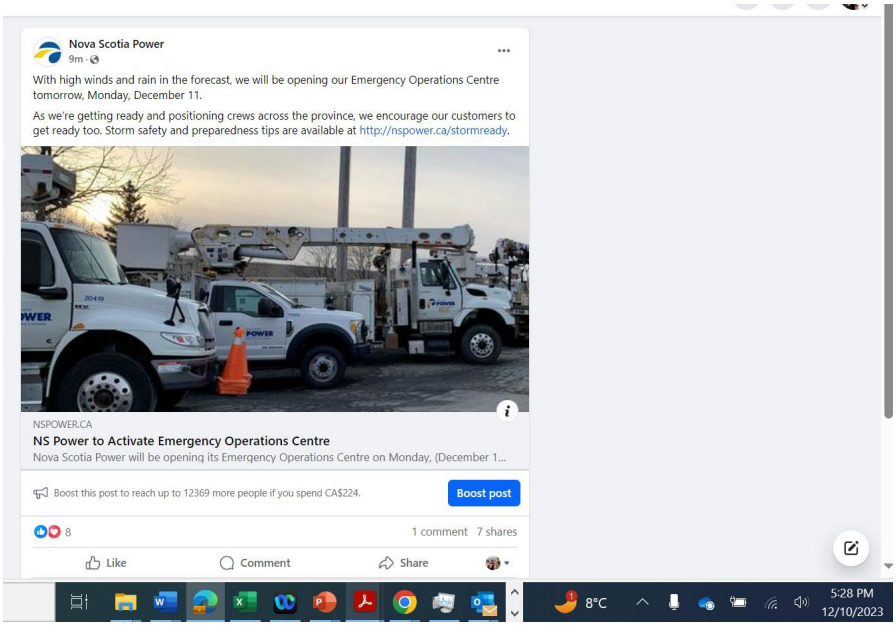




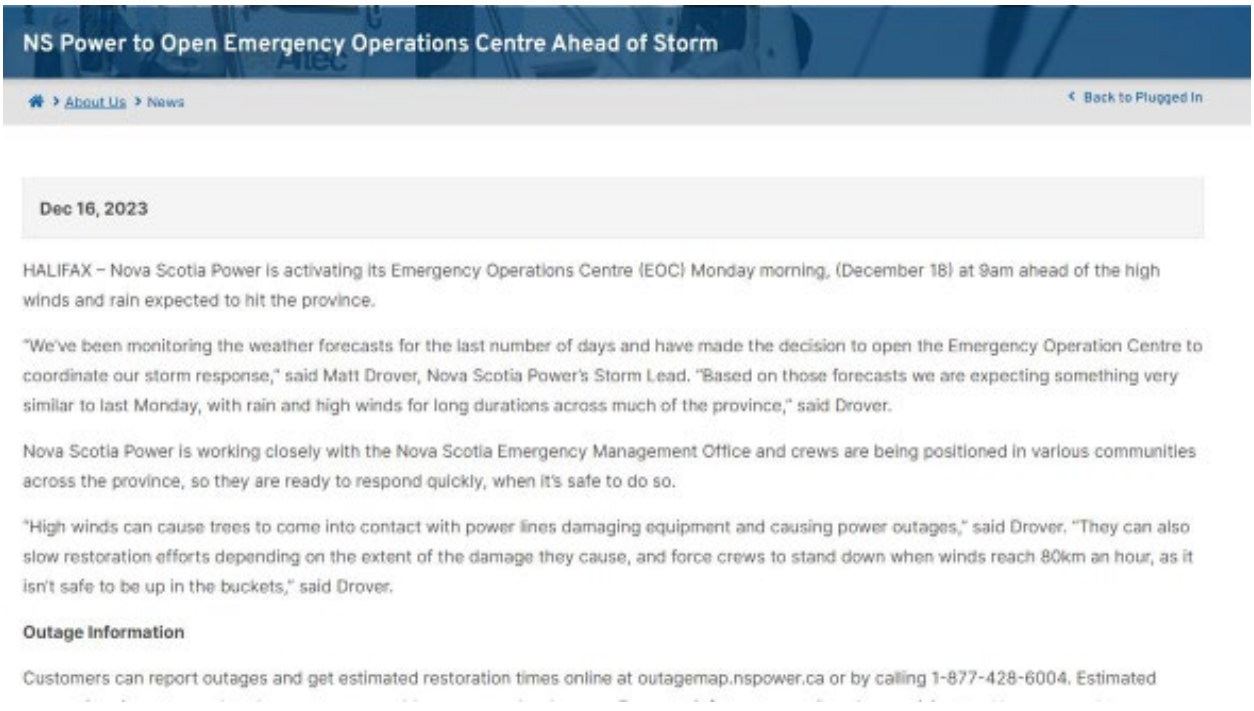
6. Social Media – December 11, 2023

Twitter

Facebook



7. NS Power Website – December 18, 2023



NS Power to Open Emergency Operations Centre Ahead of Storm

Dec 16, 2023

HALIFAX – Nova Scotia Power is activating its Emergency Operations Centre (EOC) Monday morning, (December 18) at 9am ahead of the high winds and rain expected to hit the province.

"We've been monitoring the weather forecasts for the last number of days and have made the decision to open the Emergency Operation Centre to coordinate our storm response," said Matt Drover, Nova Scotia Power's Storm Lead. "Based on those forecasts we are expecting something very similar to last Monday, with rain and high winds for long durations across much of the province," said Drover.

Nova Scotia Power is working closely with the Nova Scotia Emergency Management Office and crews are being positioned in various communities across the province, so they are ready to respond quickly, when it's safe to do so.

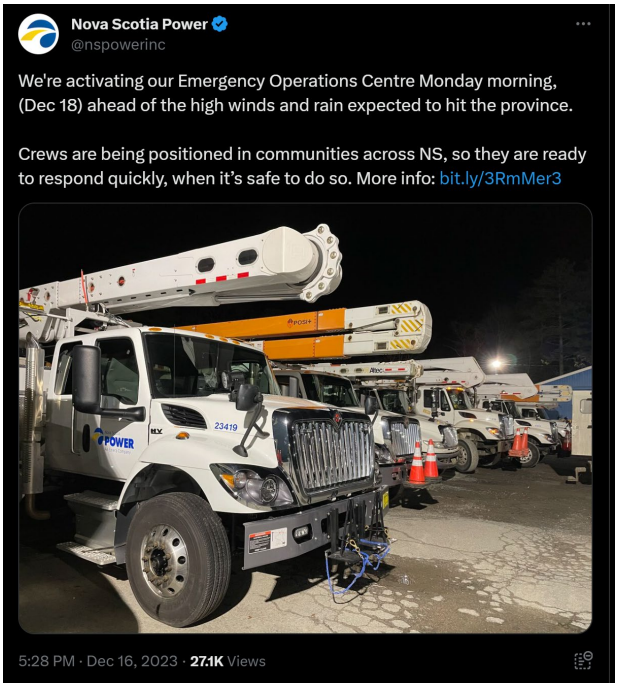
"High winds can cause trees to come into contact with power lines damaging equipment and causing power outages," said Drover. "They can also slow restoration efforts depending on the extent of the damage they cause, and force crews to stand down when winds reach 80km an hour, as it isn't safe to be up in the buckets," said Drover.

Outage Information

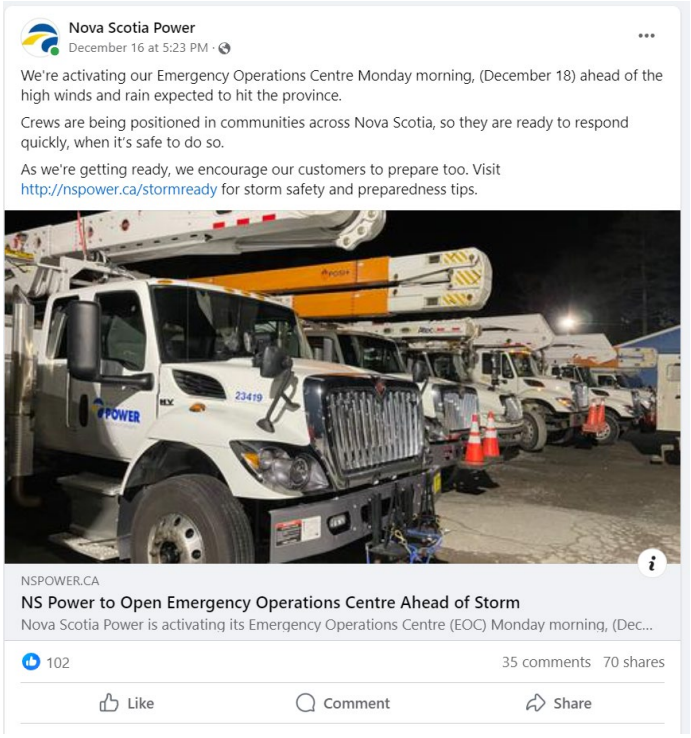
Customers can report outages and get estimated restoration times online at outagemap.nspower.ca or by calling 1-877-428-6004. Estimated

8. Social Media – February 4, 2022

Twitter



Facebook



Appendix F

Outage Calls Answered Within 45 Seconds

Supporting Documentation

	Event	Total Interactions	Service Level MTD Percentage	Service Level YTD Percentage
Storm Response: 85% of calls answered within 45 seconds	Jan 26 – 28	19,638	97.74	97.74
	Feb 4 – 7	37,353	96.76	97.10
	July 21-25	25,369	96.20	96.77
	Sept 16 – 21	101,584	99.80	98.47
	Nov 27 – 28	8,156	98.33	98.46
	Dec 11 – 14	40,868	99.75	98.69
	Dec 18 – 21	44,763	98.09	98.59
	Dec 21 - 23	24,123	99.30	98.65
	YTD	301,854	98.64	98.64

The data for the Outage Calls Answered in 45 seconds metric is extracted from CISCO Unified Intelligence Center (CUIC) and High-Volume Call Answer (HVCA) systems, using the following parameters:

- The reported data is for MED and above events and does not include regular business.
- Customers who abandon/hang up within 45 seconds are not included in the service level calculation

Appendix G

Polite Disconnection Rate

Supporting Documentation

NS Power 2023 Results for Polite Disconnection Rate

		Total Polite Disconnects	MTD Percentage	YTD Percentage
Storm Response: 10 % annual polite disconnect rate	January	43	0.36	0.36
	February	19	0.15	0.25
	March	4	0.06	0.22
	April	1	0.02	0.18
	May	34	0.45	0.23
	June	42	0.54	0.28
	July	7	0.07	0.24
	August	8	0.10	0.22
	September	55	0.23	0.23
	October	43	0.60	0.25
	November	6	0.08	0.24
	December	1,840	8.23	1.61
	YTD	2,102		1.61

The data for polite disconnects metric is extracted from the Interactive Voice Response (IVR) production database.

Appendix H

SAIDI / SAIFI Documentation

SAIDI / SAIFI Results 2015-2023

Year	SAIFI	SAIDI
2015	2.23	4.67
2016	2.46	5.06
2017	1.73	3.40
2018	2.00	4.43
2019	2.58	5.99
2020	2.05	3.98
2021	2.27	5.23
2022	2.19	5.16
2023	2.18	5.21

Customer Interruption, Customer Hours of Interruption and Customer Count 2023

Month	CI	CH	Customer Count
Jan	136,857	312,441	534,513
Feb	105,049	237,015	535,479
Mar	71,462	132,670	535,717
Apr	47,955	154,146	536,540
May	99,271	188,552	536,441
Jun	153,767	276,442	537,061
Jul	90,623	164,412	537,748
Aug	128,708	238,174	537,917
Sep	47,333	137,821	538,333
Oct	63,468	160,029	538,421
Nov	109,189	360,432	539,391
Dec	118,691	439,714	539,731
Average	**97,698**	**233,487**	**537,274**
Total	**1,172,373**	**2,801,848**	

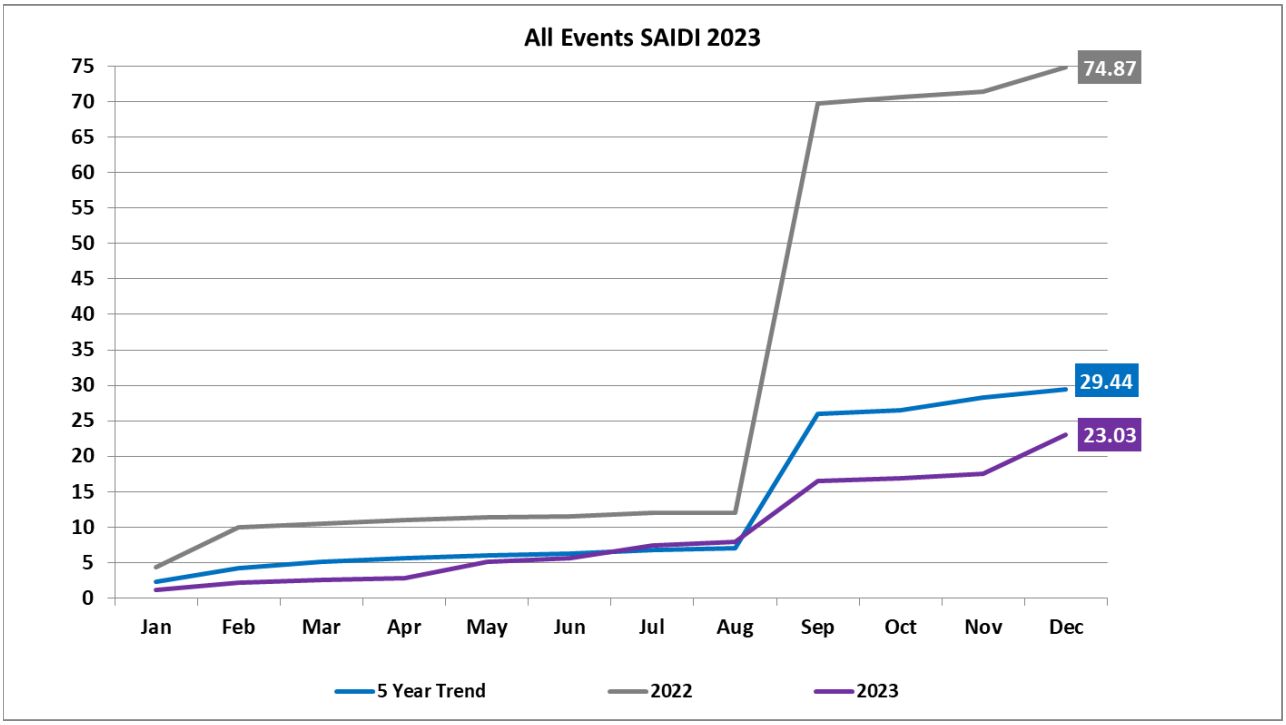
Monthly SAIDI 2021-2023

SAIDI (cumulative by month)			
Month	2021	2022	2023
Jan	0.77	0.69	0.58
Feb	1.25	1.34	1.03
Mar	1.69	1.82	1.27
Apr	2.25	2.24	1.56
May	2.58	2.56	1.91
Jun	2.99	2.72	2.43
Jul	3.69	3.11	2.73
Aug	3.89	3.21	3.18
Sep	4.06	3.29	3.43
Oct	4.25	4.21	3.73
Nov	4.72	4.94	4.40
Dec	5.23	5.16	5.21
Total	**5.23**	**5.16**	**5.21**

Monthly SAIFI 2021-2023

SAIFI (cumulative by month)			
Month	2021	2022	2023
Jan	0.21	0.31	0.26
Feb	0.45	0.56	0.45
Mar	0.67	0.77	0.59
Apr	0.82	0.98	0.67
May	1.02	1.19	0.86
Jun	1.23	1.31	1.15
Jul	1.48	1.47	1.31
Aug	1.61	1.52	1.55
Sep	1.72	1.60	1.64
Oct	1.84	1.79	1.76
Nov	2.07	2.11	1.96
Dec	2.27	2.19	2.18
Total	**2.27**	**2.19**	**2.18**

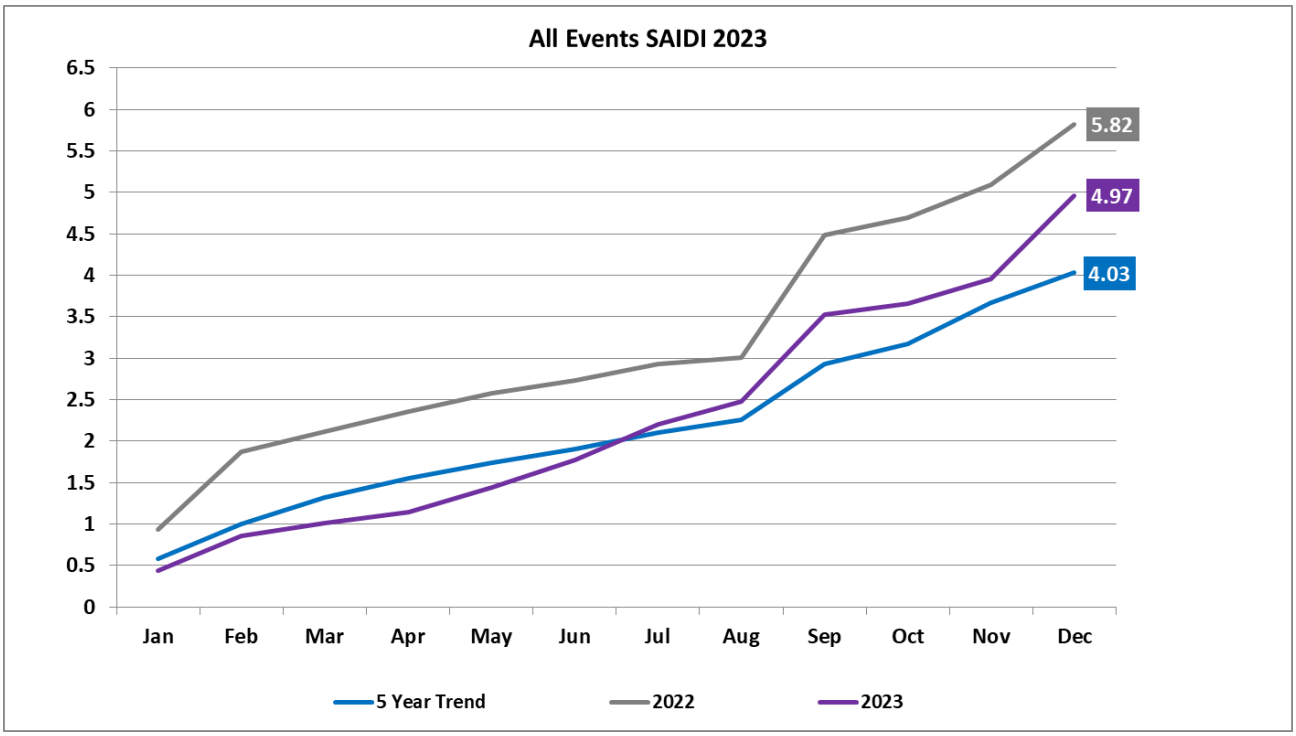
SAIDI "All Events" Results for 2023



2023 All Events SAIDI Results

Month	2022	2023	5 Year Average (2018 – 2022)
Jan	4.38	1.14	2.31
Feb	9.96	2.17	4.16
Mar	10.44	2.46	5.09
Apr	10.99	2.80	5.63
May	11.34	5.12	6.01
Jun	11.54	5.66	6.29
Jul	11.95	7.38	6.75
Aug	12.06	7.90	7.01
Sep	69.76	16.49	25.98
Oct	70.67	16.85	26.50
Nov	71.45	17.57	28.26
Dec	74.87	23.03	29.44

SAIFI "All Events" Results for 2023



2023 All Events SAIFI Results

Month	2022	2023	5 Year Average (2018 – 2022)
Jan	0.94	0.44	0.58
Feb	1.87	0.86	1.00
Mar	2.11	1.01	1.32
Apr	2.35	1.15	1.55
May	2.58	1.44	1.74
Jun	2.73	1.77	1.90
Jul	2.93	2.21	2.11
Aug	3.00	2.48	2.26
Sep	4.49	3.53	2.94
Oct	4.70	3.66	3.17
Nov	5.09	3.96	3.66
Dec	5.82	4.97	4.03

EXCLUSIONS
MED/EXT
Planned

	2017 CKAIFI	2018 CKAIFI	2019 CKAIFI	2020 CKAIFI	2021 CKAIFI	2022 CKAIFI	2023 CKAIFI	2017 CKAIDI	2018 CKAIDI	2019 CKAIDI	2020 CKAIDI	2021 CKAIDI	2022 CKAIDI	2023 CKAIDI
Avg + 2 St. Dev	4.65	5.44	6.16	4.88	5.90	5.47	5.81	12.15	20.47	20.51	13.22	17.81	17.81	16.98
St. Dev	1.55	1.84	1.97	1.52	1.92	1.76	1.91	4.44	8.03	7.37	4.67	6.47	7.32	6.09
Average	1.54	1.76	2.22	1.85	2.06	1.95	1.99	3.26	4.41	5.77	3.88	4.87	5.19	4.80

Source Feeder	2017 CKAIFI	2018 CKAIFI	2019 CKAIFI	2020 CKAIFI	2021 CKAIFI	2022 CKAIFI	2023 CKAIFI	2017 CKAIDI	2018 CKAIDI	2019 CKAIDI	2020 CKAIDI	2021 CKAIDI	2022 CKAIDI	2023 CKAIDI
100C-421	2.38	3.28	8.17	4.13	7.02	1.60	2.23	2.07	2.50	18.91	15.69	35.69	10.16	7.18
100C-422	2.27	2.20	3.40	3.37	3.15	2.40	2.43	2.11	3.24	20.16	7.82	21.38	7.81	3.75
100C-423	1.07	1.27	2.09	2.27	3.00	3.42	1.50	0.48	1.29	0.38	6.27	5.26	34.44	2.15
101H-411	0.03	2.22	2.36	1.14	4.08	1.41	3.61	0.06	3.04	3.51	3.54	6.48	4.59	6.01
101H-412	0.04	0.01	1.32	3.02	4.20	2.00	0.18	0.08	0.02	1.21	2.48	5.31	3.21	0.31
101H-413	0.23	2.23	3.67	0.64	3.11	1.17	0.92	0.36	3.11	4.30	1.17	3.53	7.02	1.94
101H-421	0.06	1.11	6.06	2.04	3.47	4.57	3.51	0.11	0.94	9.01	3.04	6.41	3.31	4.03
101H-422	0.29	2.02	2.36	1.13	3.87	3.91	2.98	0.68	6.11	8.69	2.54	9.67	5.26	1.41
101H-423	0.03	3.02	3.21	1.11	2.14	2.08	1.29	0.05	4.79	7.09	1.35	2.45	1.93	1.13
102W-311	1.06	0.05	0.25	0.33	3.32	1.06	0.12	0.19	0.15	0.65	1.02	1.94	2.07	0.59
102W-312	1.19	2.13	1.01	1.74	3.06	0.24	0.24	0.39	3.54	2.02	6.74	1.54	0.52	0.40
103C-311	4.08	0.03	4.18	2.05	5.19	1.03	0.04	12.13	0.11	16.51	7.99	22.17	2.49	0.16
103C-313	1.78	1.01	5.02	1.03	2.06	1.06	0.08	7.04	0.55	17.83	3.11	7.77	2.52	0.31
103C-314	7.65	1.40	5.68	2.40	5.92	5.56	1.49	29.23	1.78	17.50	5.96	23.78	12.26	2.70
103H-431	1.00	3.17	2.10	1.05	0.17	1.34	1.07	2.19	3.72	7.40	0.18	0.60	0.91	0.24
103H-432	0.03	1.49	1.15	1.72	0.79	0.16	0.32	0.07	4.18	4.85	2.08	1.95	0.86	0.89
103H-433	0.62	2.01	3.08	2.08	1.93	0.98	0.02	1.31	4.28	10.05	1.62	3.68	1.96	0.06
103H-434	1.24	4.19	3.69	5.35	3.32	0.09	0.37	3.37	6.26	10.00	4.63	5.86	0.47	1.20
103W-311	0.15	0.28	2.41	0.27	2.08	1.87	1.31	0.67	1.29	3.90	0.60	1.97	6.15	4.45
103W-312	1.28	1.46	4.22	2.51	2.39	1.43	1.22	7.03	2.05	6.46	7.42	2.86	3.18	6.37
104H-411	1.05	3.40	3.97	2.14	2.72	1.20	3.59	1.26	1.43	10.05	8.96	4.18	0.45	4.54
104H-412	2.15	2.88	4.05	2.08	2.59	0.11	1.22	1.83	2.35	4.50	3.32	2.38	0.30	1.36
104H-413	1.89	2.27	3.28	3.95	1.39	3.06	0.63	2.82	0.45	2.68	7.51	4.51	4.36	1.02
104H-421	4.03	4.11	3.12	1.07	1.06	2.13	0.80	4.52	4.69	1.83	0.69	2.32	1.39	1.21
104H-422	1.93	1.34	1.25	2.06	0.47	1.09	0.00	1.33	1.82	1.51	0.85	0.99	0.11	0.01
104H-423	1.94	2.08	1.13	1.12	1.00	0.12	0.15	2.04	2.50	1.31	1.00	0.95	0.30	0.35
104H-431	0.46	1.68	1.10	2.08	2.35	3.97	0.06	0.58	2.35	1.35	0.23	5.30	3.17	0.17
104H-432	0.01	1.98	2.11	4.06	0.08	2.48	0.00	0.01	2.53	3.34	4.92	0.13	1.29	0.00
104H-433	1.00	1.04	1.88	1.07	0.07	1.39	1.03	1.20	2.36	1.47	0.66	0.15	0.73	1.09
104H-441	0.14	1.99	0.23	1.26	1.07	0.03	2.02	0.47	1.98	0.37	1.88	2.15	0.07	5.26
104H-442	2.03	2.00	2.02	1.03	2.98	1.05	1.02	4.24	1.76	1.99	0.21	4.19	1.13	1.46
104S-311	4.01	1.32	4.61	2.12	1.70	1.18	3.03	9.48	3.04	17.26	5.08	4.50	3.16	4.28
104S-312	3.01	1.56	3.29	0.97	0.03	1.22	0.46	5.08	7.07	12.00	6.66	0.09	3.68	1.17
104S-313	4.59	0.76	2.67	3.59	4.33	2.92	1.12	11.24	3.00	9.68	10.76	18.12	8.42	12.90
108H-411	3.03	0.09	1.06	1.02	0.01	0.01	0.26	5.84	0.20	0.47	3.11	0.01	0.03	0.74
108H-412	2.00	0.01	1.00	0.01	0.25	1.02	2.05	1.85	0.02	0.32	0.02	0.14	1.63	3.89
108H-413	2.33	1.05	2.03	1.02	0.16	1.11	2.04	2.15	1.90	1.83	3.06	0.78	1.61	8.27
111S-311				0.05	0.02	0.01	0.96				0.05	0.04	0.08	5.83
111S-312				0.07	0.02	0.47	0.08				0.08	0.05	1.64	0.39
111S-313				0.11	0.03	0.03	0.07				0.58	0.07	0.04	0.17
111S-314				0.00	0.00	0.00	1.07				0.00	0.00	0.00	0.48
113H-431	1.84	1.02	1.87	3.50	1.05	1.86	1.20	1.12	1.81	0.33	3.77	0.62	2.54	3.97
113H-432	0.05	2.06	0.03	3.06	2.27	2.21	3.16	0.09	1.94	0.09	2.13	4.48	1.53	4.28
113H-433	0.09	0.27	0.30	0.33	0.75	2.41	6.21	0.56	0.31	0.32	0.39	2.14	3.72	9.65
113H-434	1.30	4.03	1.15	1.13	2.09	0.40	1.84	0.70	3.86	3.28	2.16	3.97	0.54	1.50
113H-441	0.07	0.04	1.52	1.56	1.98	0.05	0.06	0.10	0.06	3.88	1.66	4.76	0.14	0.19
113H-442	0.03	1.12	1.07	0.98	4.46	0.06	2.69	0.07	7.26	1.80	0.77	9.31	0.10	4.14
113H-443	3.67	0.69	1.07	2.18	1.05	2.13	1.50	2.10	0.17	0.69	3.20	2.40	0.76	1.90
113H-444	1.82	1.04	0.04	1.01	1.01	1.05	2.09	2.18	1.59	0.08	2.28	5.24	1.10	3.16
11N-200				1.00	0.00	0.00	0.00				0.33	0.00	0.00	0.00
11S-301	2.15	5.38	3.13	3.66	2.81	2.06	3.62	2.32	8.76	5.95	11.83	22.54	10.13	15.09

EXCLUSIONS
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	2017 CKAIFI	2018 CKAIFI	2019 CKAIFI	2020 CKAIFI	2021 CKAIFI	2022 CKAIFI	2023 CKAIFI	2017 CKAIDI	2018 CKAIDI	2019 CKAIDI	2020 CKAIDI	2021 CKAIDI	2022 CKAIDI	2023 CKAIDI
Avg + 2 St. Dev	4.65	5.44	6.16	4.88	5.90	5.47	5.81	12.15	20.47	20.51	13.22	17.81	17.81	16.98
St. Dev	1.55	1.84	1.97	1.52	1.92	1.76	1.91	4.44	8.03	7.37	4.67	6.47	7.32	6.09
Average	1.54	1.76	2.22	1.85	2.06	1.95	1.99	3.26	4.41	5.77	3.88	4.87	5.19	4.80

Source Feeder	2017 CKAIFI	2018 CKAIFI	2019 CKAIFI	2020 CKAIFI	2021 CKAIFI	2022 CKAIFI	2023 CKAIFI	2017 CKAIDI	2018 CKAIDI	2019 CKAIDI	2020 CKAIDI	2021 CKAIDI	2022 CKAIDI	2023 CKAIDI
11S-302	1.12	3.06	4.18	2.14	2.57	2.37	2.07	2.36	5.12	12.60	1.05	4.02	3.94	3.08
11S-303	0.14	1.11	0.08	0.03	1.42	0.08	3.02	0.25	1.88	0.17	0.03	1.35	0.86	2.55
11S-304	1.11	0.12	0.11	0.16	0.20	1.10	2.08	3.32	0.38	0.30	0.29	1.11	3.77	3.32
11S-305	1.03	1.21	1.13	0.93	2.45	1.08	3.21	0.26	1.88	1.03	2.07	10.94	10.37	3.26
11S-306	1.05	0.17	1.06	0.04	1.13	0.07	3.05	3.14	0.33	2.77	0.07	2.67	0.99	2.58
11S-411	3.15	4.61	2.34	3.70	7.64	5.91	5.32	9.31	10.29	10.34	13.74	22.70	23.19	16.87
11S-412	0.52	0.08	0.06	0.17	3.10	1.31	2.09	1.21	0.15	0.07	0.48	15.73	1.75	2.24
11W-201														
11W-202														
11W-203														
124H-301	0.02	0.98	2.25	0.03	0.01	2.98	2.01	0.10	2.17	1.21	0.10	0.01	6.91	1.89
124H-302	0.29	0.00	1.05	0.03	0.06	2.00	1.00	0.70	0.00	0.32	0.09	0.18	4.19	0.16
126H-311	0.06	1.05	0.46	2.87	0.06	1.47	1.11	0.21	1.33	0.77	4.86	0.14	5.36	2.00
126H-312	0.57	8.98	2.27	3.01	3.41	2.42	2.69	0.17	12.75	3.46	2.55	3.95	5.21	7.27
126H-313	0.09	0.04	1.10	1.06	0.26	2.09	4.13	0.31	0.17	9.10	0.27	0.72	4.76	2.62
127H-411	1.63	1.74	4.22	3.07	4.61	1.34	4.58	1.56	2.13	6.31	5.91	4.62	0.48	5.01
127H-412	0.50	0.50	0.50	0.00	1.00	0.00	1.00	0.01	0.50	0.98	0.00	0.05	0.00	0.95
127H-413	0.21	0.93	1.00	0.06	1.02	3.09	1.02	0.20	1.97	0.63	0.16	0.09	14.61	1.02
129H-411	1.05	1.07	3.76	0.05	0.09	1.02	0.59	0.17	0.68	4.67	0.18	0.15	1.94	0.21
129H-412	3.03	0.12	2.04	1.08	2.01	1.17	0.92	1.09	0.13	6.13	1.33	6.24	0.73	0.57
129H-413	1.38	0.01	1.12	0.29	1.02	3.90	0.03	0.65	0.03	0.86	0.57	0.98	3.12	0.08
12V-302	1.92	3.36	2.33	1.07	0.08	3.24	1.26	3.94	6.46	3.44	9.63	0.25	6.49	2.42
12V-303	1.06	2.01	3.25	0.13	0.06	3.93	0.94	1.96	2.45	5.19	0.36	0.42	3.96	6.63
12V-304	2.25	1.35	1.46	2.52	1.72	4.03	2.16	2.76	3.29	3.56	6.47	1.86	9.33	2.93
131H-421	0.03	0.05	0.06	0.06	1.17	0.14	0.17	0.07	0.08	0.20	0.08	1.36	0.32	0.52
131H-422	1.50	1.31	1.95	1.11	2.28	2.40	1.93	1.72	1.10	2.64	2.82	3.30	2.82	5.13
131H-423	0.90	1.93	1.67	2.80	3.15	0.97	1.76	1.18	4.26	1.84	1.96	8.31	0.95	5.30
131H-424	0.34	3.14	7.40	1.22	1.67	0.66	0.04	0.48	3.07	10.79	0.59	2.97	0.15	0.05
137H-411	0.00	0.15	3.19	1.05	0.67	1.09	1.26	0.00	0.33	8.52	0.77	0.85	0.46	2.49
137H-412	0.01	0.12	1.12	0.04	0.52	8.11	1.95	0.02	0.31	0.77	0.10	1.28	6.57	10.93
137H-413	1.53	1.17	3.30	1.06	0.17	1.20	2.08	1.00	1.67	6.01	1.22	0.28	2.52	6.19
137H-414	0.54	0.18	3.15	0.12	0.91	1.12	1.10	1.26	0.58	8.05	0.16	3.23	0.55	2.96
139H-411	3.03	1.05	5.60	1.06	2.05	3.02	1.17	2.46	1.34	8.94	2.86	5.02	7.50	2.29
139H-412					0.06	4.03	2.03					0.14	1.89	2.94
139H-413	3.02	1.98	0.00	0.04	0.00	2.01	2.03	6.69	2.19	0.00	0.23	0.00	2.03	4.13
139H-414	2.26	3.04	2.12	1.22	0.16	3.27	3.18	2.96	7.51	3.65	2.37	0.15	3.48	4.39
13V-303	0.59	2.51	0.74	0.64	1.55	0.40	0.29	1.32	6.42	17.40	5.42	4.41	1.49	1.05
14V-303	1.00	1.18	2.08	4.00	1.92	2.29	6.08	0.05	5.77	2.91	8.18	2.37	7.64	6.58
15N-202	1.74	2.20	0.11	0.00	1.06			4.21	5.42	0.26	0.00	9.39		
15N-203	2.05	1.55	0.62	0.47	1.22			1.44	6.75	0.14	1.53	8.65		
15N-401	1.53	1.28	0.24	1.22	1.70	3.30	1.29	2.14	1.30	0.83	3.07	1.78	3.51	1.13
15N-402	1.00	0.08	0.00	1.36	0.90	2.79	1.01	1.08	0.12	0.00	0.54	2.02	3.27	2.01
15N-403	2.76	0.18	1.16	1.56	1.17	1.17	1.67	3.58	0.60	1.35	1.27	1.88	2.62	4.16
15N-404	1.13	3.43	0.14	1.10	0.07	4.20	1.39	1.40	9.13	0.21	3.08	0.14	3.11	2.87
15S-301	1.26	2.25	0.22	5.20	0.38	5.21	1.36	1.58	2.87	0.22	15.83	1.52	13.60	1.70
15S-302	0.02	0.06	2.14	2.07	1.04	1.13	2.11	0.08	0.19	3.21	6.57	1.04	5.34	1.83
15S-303	2.08	1.14	1.04	1.40	2.15	1.84	1.07	2.61	1.10	0.21	2.47	3.35	4.41	1.00
16N-301	0.05	0.44	2.17	2.05	0.24	2.14	0.05	0.09	2.42	4.08	2.12	1.09	8.66	0.18
16N-302	0.08	1.62	2.37	2.22	4.23	2.09	0.39	0.11	7.09	12.26	2.78	9.02	9.07	1.20
16V-314	1.25	2.16	1.34	2.45	0.29	1.88	3.07	4.02	4.13	12.35	8.34	2.35	12.11	7.25
16V-315	0.03	3.28	1.94	2.42	0.58	1.35	5.01	0.08	5.94	11.14	9.50	1.00	8.76	8.88

EXCLUSIONS
MED/EXT
Planned

	2017 CKAIFI	2018 CKAIFI	2019 CKAIFI	2020 CKAIFI	2021 CKAIFI	2022 CKAIFI	2023 CKAIFI	2017 CKAIDI	2018 CKAIDI	2019 CKAIDI	2020 CKAIDI	2021 CKAIDI	2022 CKAIDI	2023 CKAIDI
Avg + 2 St. Dev	4.65	5.44	6.16	4.88	5.90	5.47	5.81	12.15	20.47	20.51	13.22	17.81	17.81	16.98
St. Dev	1.55	1.84	1.97	1.52	1.92	1.76	1.91	4.44	8.03	7.37	4.67	6.47	7.32	6.09
Average	1.54	1.76	2.22	1.85	2.06	1.95	1.99	3.26	4.41	5.77	3.88	4.87	5.19	4.80

Source Feeder	2017 CKAIFI	2018 CKAIFI	2019 CKAIFI	2020 CKAIFI	2021 CKAIFI	2022 CKAIFI	2023 CKAIFI	2017 CKAIDI	2018 CKAIDI	2019 CKAIDI	2020 CKAIDI	2021 CKAIDI	2022 CKAIDI	2023 CKAIDI
16W-301	2.21	1.31	2.25	2.68	1.50	0.35	0.81	1.58	2.92	3.64	2.22	3.36	1.38	1.36
16W-302	0.61	0.09	4.51	3.52	3.08	1.61	0.47	1.18	0.45	6.11	5.18	6.37	2.64	1.13
17N-201	1.20	1.20	1.01	1.01	2.00	0.07	0.00	0.19	15.73	0.12	0.89	3.31	0.32	0.00
17N-202	0.09	0.03	1.10	0.00	0.00	0.08	0.06	1.12	0.03	0.28	0.00	0.00	0.34	0.07
17N-203	3.01	0.38	2.01	0.02	0.02	0.19	0.24	17.15	0.08	2.12	0.03	0.12	0.42	0.21
18V-411	3.10	5.09	1.04	2.07	1.05	1.47	0.50	7.35	7.75	1.34	10.19	5.61	3.23	0.85
18V-412	2.35	5.87	1.34	3.11	2.42	2.37	0.02	6.55	21.13	4.65	11.42	6.53	2.96	0.13
18V-413	5.98	6.90	1.92	2.34	3.22	1.87	0.09	11.73	17.97	2.77	9.09	8.71	1.88	0.71
19C-203	2.00	2.00	2.00	1.02	4.01	0.03	5.99	6.11	4.14	32.99	4.81	13.34	0.13	5.88
19C-204	2.50	4.33	3.67	2.13	4.94	1.02	5.08	5.81	9.29	6.89	7.54	15.88	0.32	5.93
19W-311	4.02	2.75	5.19	3.02	6.05	0.14	0.22	5.31	4.98	11.09	8.23	13.71	0.48	0.25
19W-312	4.00	1.06	3.15	2.09	6.76	1.16	0.05	5.11	2.09	4.25	3.08	6.89	2.01	0.16
1C-411	0.12	1.19	2.97	1.16	1.78	1.07	1.18	0.31	1.89	6.66	3.80	4.44	5.43	2.11
1C-412	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.59	0.00	0.00	3.35	0.00	4.45	16.29
1C-413				1.00	0.00	0.00	1.00				32.55	0.00	0.00	8.19
1H-403	1.03	2.00	1.00	2.01	0.09	0.76	2.72	3.04	0.75	1.39	15.24	0.07	5.27	1.27
1H-405	0.00	0.00	1.00	1.00	0.00	0.00	2.00	0.00	0.00	1.41	11.33	0.00	0.00	3.72
1H-415	1.68	0.04	1.58	0.00	2.03	1.12	2.01	7.80	0.06	1.91	0.00	3.83	0.52	3.27
1H-419	0.99	0.00	0.96	0.00	2.00	1.50	1.63	5.40	0.00	1.35	0.00	6.08	2.07	2.48
1H-424	0.00	0.00	1.35	0.00	0.00	2.03	2.02	0.00	0.00	1.46	0.00	0.00	2.88	2.97
1H-427	0.98	1.99	2.03	0.06	0.00	0.02	2.10	1.39	0.68	4.13	0.11	0.00	0.12	0.85
1H-429	0.00	0.00	0.67	0.00	0.00	0.67	0.00	0.00	0.00	0.93	0.00	0.00	0.46	0.00
1H-431	0.00	0.03	2.00	0.00	0.00	0.00	1.00	0.00	0.04	2.80	0.01	0.00	0.00	1.78
1H-454	0.00	2.81	5.05	1.98	0.04	0.03	2.07	0.00	6.89	3.84	2.80	0.12	0.05	0.72
1N-402	1.18	2.64	5.27	0.68	8.61	3.90	4.45	1.77	11.80	8.24	2.39	18.68	8.48	8.07
1N-403	1.09	3.06	0.03	2.04	1.10	5.82	2.12	2.23	8.94	0.07	2.68	0.83	6.65	2.56
1N-404	0.05	0.51	0.03	0.05	2.03	0.11	1.47	0.11	2.01	0.19	0.24	2.90	3.65	1.66
1N-405	1.05	1.09	2.34	3.19	2.84	1.74	4.47	1.07	2.47	4.78	3.60	4.39	5.94	4.64
1N-421	3.02	1.12	1.04	2.30	3.08	2.08	2.02	5.94	3.72	0.24	6.64	6.72	5.05	5.04
1V-442	1.00	0.00	1.00	0.00	0.00	0.00	2.00	2.61	0.00	0.05	0.00	0.00	0.00	3.78
1V-443	3.98	0.16	5.86	3.88	1.29	4.48	6.78	7.10	0.86	8.21	9.19	4.53	9.93	16.59
1W-411	0.50	1.00	1.86	2.14	3.86	4.00	4.86	1.72	0.17	3.63	15.61	3.18	41.52	25.95
20H-301	0.32	3.27	2.21	1.55	0.36	4.16	0.05	0.59	9.77	1.72	2.26	0.98	6.15	0.19
20H-302	0.03	3.04	1.00	2.18	0.00	1.16	1.07	0.09	5.08	0.90	17.49	0.00	2.72	4.36
20H-303	0.23	3.06	2.09	1.57	2.19	1.11	1.17	0.88	5.98	3.11	0.74	3.65	0.60	7.69
20H-304	0.77	2.28	4.03	0.03	1.08	1.19	1.02	0.15	8.13	4.64	0.06	0.38	0.39	4.31
20H-305	1.38	2.14	2.93	0.12	0.06	4.19	0.18	0.41	8.87	7.71	0.14	0.16	5.59	1.23
20H-306	1.07	2.09	1.06	4.21	1.02	4.03	1.04	1.76	7.69	1.11	1.39	1.52	2.26	5.14
20N-201	0.30	0.00	1.00	1.36	2.00	0.04	1.00	2.61	0.00	0.76	2.44	5.83	0.03	0.46
20N-203	0.02	0.38	1.06	0.07	0.00	0.01	0.00	0.03	0.66	0.70	0.06	0.00	0.15	0.00
20N-204	0.12	0.11	1.25	1.02	1.00	0.25	0.02	0.09	1.31	0.28	0.81	1.43	0.80	0.04
20V-311	1.07	3.57	2.85	1.35	4.35	5.31	0.04	0.21	7.65	7.46	1.92	14.08	3.85	0.15
20W-311	6.00	1.05	2.05	1.02	2.07	1.02	0.02	11.51	2.11	1.90	1.18	3.68	7.96	0.08
20W-312	4.03	1.04	2.05	2.07	3.02	1.02	1.06	6.93	2.10	1.99	3.89	7.41	3.91	0.61
21W-311	5.07	3.10	3.02	1.12	1.04	1.08	0.26	8.51	3.94	8.89	1.20	5.34	3.61	0.39
21W-312	5.01	1.15	3.14	2.06	1.01	0.01	0.03	17.19	2.75	10.29	2.66	5.28	0.05	0.06
22C-401	1.23	1.00	4.03	3.07	0.74	2.72	1.06	2.02	7.17	9.43	6.60	2.26	2.09	1.67
22C-402	1.65	2.49	6.71	2.73	6.90	6.07	2.97	2.76	10.83	21.46	9.12	34.06	20.18	8.11
22C-403	1.71	1.30	6.78	4.15	5.75	14.24	2.33	12.69	4.13	16.36	11.15	16.38	30.79	4.60
22C-404	4.36	1.91	10.82	4.78	6.05	4.11	4.56	7.64	5.89	33.15	11.86	16.88	9.19	15.71
22N-401	4.06	5.00	1.36	1.09	3.18	3.41	1.21	8.91	14.66	2.44	5.12	5.32	6.01	6.56

EXCLUSIONS
MED/EXT
Planned

	2017 CKAIFI	2018 CKAIFI	2019 CKAIFI	2020 CKAIFI	2021 CKAIFI	2022 CKAIFI	2023 CKAIFI	2017 CKAIDI	2018 CKAIDI	2019 CKAIDI	2020 CKAIDI	2021 CKAIDI	2022 CKAIDI	2023 CKAIDI
Avg + 2 St. Dev	4.65	5.44	6.16	4.88	5.90	5.47	5.81	12.15	20.47	20.51	13.22	17.81	17.81	16.98
St. Dev	1.55	1.84	1.97	1.52	1.92	1.76	1.91	4.44	8.03	7.37	4.67	6.47	7.32	6.09
Average	1.54	1.76	2.22	1.85	2.06	1.95	1.99	3.26	4.41	5.77	3.88	4.87	5.19	4.80

Source Feeder	2017 CKAIFI	2018 CKAIFI	2019 CKAIFI	2020 CKAIFI	2021 CKAIFI	2022 CKAIFI	2023 CKAIFI	2017 CKAIDI	2018 CKAIDI	2019 CKAIDI	2020 CKAIDI	2021 CKAIDI	2022 CKAIDI	2023 CKAIDI
22N-402	3.56	1.37	3.96	1.88	2.28	7.22	4.28	11.42	2.82	9.17	5.06	4.60	12.81	18.52
22N-403	1.63	0.41	0.05	2.56	0.68	1.95	3.86	8.29	0.99	0.30	5.48	1.21	5.04	11.99
22N-404	2.01	2.18	3.06	2.05	2.03	1.05	3.02	10.77	1.53	4.43	4.47	3.12	2.33	13.58
22V-312														
22V-313	3.18	2.00	0.27	2.06	0.17	4.08	2.08	3.69	11.30	0.37	1.57	0.32	10.07	3.25
22V-314	1.01	3.02	0.00	1.03	0.04	3.01	2.01	1.45	8.76	0.01	0.14	0.04	8.61	3.22
22V-321	1.05	0.03	0.13	1.04	2.10	4.06	3.09	1.51	0.17	0.14	0.22	2.87	11.07	3.64
22V-322	2.06	1.04	1.03	1.14	0.09	3.95	2.01	3.61	0.32	1.31	0.37	0.17	9.29	3.10
22V-323														
22W-311	4.21	3.18	1.41	2.12	1.64	2.72	0.07	6.82	1.34	3.24	2.79	2.55	5.80	0.12
22W-312	3.09	2.84	2.20	3.05	4.08	1.54	0.80	4.43	2.31	3.25	2.71	6.49	8.03	0.89
22W-313	4.33	2.16	1.61	1.32	2.36	0.21	0.07	4.79	0.69	2.42	1.96	2.92	0.23	0.14
23H-301	0.15	2.11	0.28	0.05	1.18	3.16	2.24	0.39	0.22	0.82	0.08	4.76	3.38	11.34
23H-302	1.01	2.09	1.09	1.08	1.07	3.12	2.03	0.38	0.34	1.12	3.30	7.61	4.04	11.58
23H-303	0.08	2.02	0.05	0.45	3.22	2.03	1.07	0.23	0.21	0.11	1.33	2.02	0.38	11.18
23H-304	4.06	3.15	3.26	3.33	2.59	5.27	1.68	5.08	3.43	6.69	4.17	4.40	3.77	12.08
23W-301	1.07	2.02	1.57	0.31	5.25	1.47	0.81	1.92	0.29	5.48	1.90	6.85	1.47	1.07
23W-302	0.67	4.09	3.10	3.22	9.03	1.98	1.10	6.43	12.29	12.72	7.94	13.66	5.17	2.67
24C-442	1.95	2.14	3.64	7.19	6.34	3.69	6.64	4.65	2.86	12.49	22.24	19.24	7.08	7.45
24C-443	1.29	1.13	4.06	0.58	0.45	1.43	1.66	2.17	0.49	4.84	1.88	3.85	3.82	3.81
25W-301	1.18	1.91	2.87	0.34	8.80	1.38	1.43	4.62	1.22	11.24	5.51	15.92	1.70	48.81
25W-302	0.01	2.81	1.21	4.14	7.02	0.48	1.48	0.06	6.07	4.60	11.17	11.44	1.17	3.31
25W-303	1.23	1.21	4.12	2.14	5.06	0.23	1.02	1.95	0.70	6.03	3.74	7.38	0.31	0.15
2C-401	0.13	0.39	2.31	2.19	0.08	3.79	1.30	0.35	1.15	10.91	5.73	0.29	10.73	2.54
2C-402	3.81	4.59	9.03	5.04	8.19	4.80	1.34	12.29	8.30	16.27	22.01	44.76	16.79	2.18
2H-411	2.04	2.02	2.02	2.03	2.40	0.83	0.84	3.63	1.58	2.87	2.82	3.38	1.30	4.63
2H-412	0.21	1.16	4.03	0.07	0.00	1.01	0.00	0.45	3.40	4.43	0.11	0.00	1.62	0.02
2H-413	2.28	1.90	4.02	3.06	2.06	2.05	0.15	6.68	3.27	7.60	4.42	0.48	2.36	0.39
2H-421				0.13	0.15	0.05	0.05				0.57	0.43	0.19	0.17
2H-422					1.64	0.07	1.15					4.78	0.09	1.24
2H-424				0.20	2.23	2.21	2.04				0.40	1.95	2.98	5.47
30N-411	0.88	3.19	1.00	1.31	1.21	2.12	2.39	4.95	26.89	1.81	2.62	1.12	4.86	10.55
30N-412	1.83	1.20	0.97	3.48	0.08	2.17	8.53	8.04	3.78	3.12	12.01	0.51	16.92	26.66
36V-301	1.33	1.06	2.18	2.74	1.26	2.27	1.46	2.25	5.11	3.04	4.90	1.78	5.58	5.84
36V-302	4.79	3.72	3.82	1.17	0.36	1.16	3.49	10.89	9.92	6.71	2.87	1.36	3.93	13.43
36V-303	1.65	1.05	1.53	1.34	0.98	1.73	2.52	3.37	7.07	5.19	3.33	2.06	3.80	7.44
36W-301	1.06	1.91	2.73	0.84	6.08	0.32	1.52	8.08	11.10	19.80	3.92	13.56	1.76	3.25
36W-304	0.26	4.60	0.79	2.29	8.18	0.23	1.04	0.30	12.98	3.60	11.57	12.14	0.41	0.16
37N-411	2.69	6.33	2.72	2.04	1.60	3.20	2.24	6.53	36.36	8.71	3.61	2.45	10.58	24.90
37N-412	4.35	3.89	6.87	1.14	0.95	5.80	1.22	11.81	13.19	19.11	2.62	2.34	21.90	6.40
37N-413	1.06	6.95	2.21	4.95	0.44	3.92	3.18	0.92	25.50	31.77	11.12	0.15	31.98	15.09
37N-414	2.03	0.07	0.13	3.44	0.83	1.22	1.48	6.52	0.10	1.27	6.31	1.73	7.52	2.26
37W-201	0.04	1.29	0.33	0.09	6.06	0.02	1.22	0.47	2.78	0.56	0.36	13.07	0.09	0.50
37W-202	3.22	1.01	0.06	0.21	5.69	0.24	1.11	7.78	1.25	0.33	0.63	14.32	1.63	0.96
37W-203	0.00	1.00	0.00	0.00	5.00	0.00	1.00	0.00	1.20	0.00	0.00	11.13	0.00	0.07
3N-411	3.20	4.20	1.06	2.00	0.10	1.21	2.05	4.62	1.72	2.87	0.89	0.12	4.49	2.72
3N-412				1.24	0.36	1.33	1.32				1.11	0.46	4.03	0.72
3S-301	1.29	0.04	1.46	1.26	1.13	3.07	0.07	2.75	0.17	2.80	2.79	0.64	1.76	0.36
3S-302	1.11	0.03	0.10	1.83	2.06	2.40	1.32	1.65	0.10	0.26	7.08	2.37	1.44	8.70
3S-303	3.23	0.03	1.10	1.06	7.16	2.13	1.30	6.05	0.14	9.68	0.59	17.16	0.85	3.45
3S-307	3.11	3.26	1.37	1.46	2.13	3.23	1.86	4.59	4.23	6.42	2.33	1.94	4.18	2.99

EXCLUSIONS
MED/EXT
Planned

	2017 CKAIFI	2018 CKAIFI	2019 CKAIFI	2020 CKAIFI	2021 CKAIFI	2022 CKAIFI	2023 CKAIFI	2017 CKAIDI	2018 CKAIDI	2019 CKAIDI	2020 CKAIDI	2021 CKAIDI	2022 CKAIDI	2023 CKAIDI
Avg + 2 St. Dev	4.65	5.44	6.16	4.88	5.90	5.47	5.81	12.15	20.47	20.51	13.22	17.81	17.81	16.98
St. Dev	1.55	1.84	1.97	1.52	1.92	1.76	1.91	4.44	8.03	7.37	4.67	6.47	7.32	6.09
Average	1.54	1.76	2.22	1.85	2.06	1.95	1.99	3.26	4.41	5.77	3.88	4.87	5.19	4.80

Source Feeder	2017 CKAIFI	2018 CKAIFI	2019 CKAIFI	2020 CKAIFI	2021 CKAIFI	2022 CKAIFI	2023 CKAIFI	2017 CKAIDI	2018 CKAIDI	2019 CKAIDI	2020 CKAIDI	2021 CKAIDI	2022 CKAIDI	2023 CKAIDI
3S-308	3.09	1.04	0.04	1.10	3.08	5.47	1.04	7.51	3.51	0.14	1.24	2.66	5.81	2.43
3S-309	3.37	2.02	0.27	2.10	2.08	2.08	1.27	6.71	6.07	1.10	3.11	6.44	1.03	2.56
3S-403	5.22	2.81	5.78	1.28	4.84	4.05	5.28	4.58	7.48	12.92	4.27	27.30	7.33	39.36
3S-405	1.00	0.04	0.00	0.08	0.92	2.03	1.03	1.36	0.17	0.00	0.31	4.62	0.31	2.16
3W-201	0.75	0.89	0.90	4.10	2.80	1.30	1.00	17.46	0.79	0.04	9.63	7.09	3.73	0.02
40H-302	1.03	2.06	2.04	2.57	0.11	0.20	1.24	0.96	2.15	0.41	3.72	0.13	0.34	4.20
40H-303	2.00	0.02	0.00	2.28	0.05	0.04	4.11	1.29	0.03	0.00	2.64	0.11	0.03	2.55
40H-304	1.05	0.08	1.32	3.31	1.06	1.05	0.01	0.09	0.12	0.53	6.96	1.76	0.48	0.01
40H-305	1.19	1.04	0.02	0.03	0.04	0.18	0.12	0.26	0.68	0.04	0.05	0.08	0.23	0.52
40H-401	1.06	1.03	1.02	0.03	0.04	0.01	0.07	1.07	0.09	2.52	0.10	0.07	0.02	0.17
424S														
46W-301	2.10	2.37	0.86	3.32	7.78	1.03	1.31	10.10	3.69	4.85	9.29	14.06	5.04	1.37
46W-303	1.88	1.05	2.36	2.43	5.40	1.83	2.06	11.71	1.42	5.31	5.48	7.25	3.95	4.57
47C-Dist	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
48H-301	0.02	1.06	1.12	3.44	2.08	0.10	0.04	0.05	1.14	2.31	5.69	6.91	1.65	0.17
48H-302	0.02	2.14	2.03	3.01	4.01	1.23	1.02	0.05	2.63	3.00	2.02	8.51	0.69	1.54
48H-303	2.25	1.59	1.01	3.14	2.01	1.02	1.41	10.34	1.48	0.07	3.49	6.51	0.19	2.56
48H-304	2.06	2.22	2.21	1.03	2.39	2.23	0.04	2.73	1.98	3.99	0.61	7.51	1.58	0.22
48W-201	0.09	1.05	0.99	0.10	0.06	0.11	0.24	1.33	1.48	0.96	0.08	0.20	0.50	2.49
48W-203	0.02	1.00	0.00	0.00	0.00	0.02	0.02	0.13	1.20	0.00	0.00	0.00	0.02	0.08
48W-204	0.23	1.00	0.02	0.01	1.06	0.04	0.03	0.62	1.29	0.07	0.02	0.48	0.20	0.17
49N-332	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4C-424	1.10	1.92	5.11	2.38	1.06	5.74	2.54	1.68	3.38	8.23	9.09	5.10	15.13	6.19
4C-430	1.30	4.10	4.12	1.32	1.71	2.59	0.74	2.81	7.08	14.05	2.33	4.68	12.63	1.78
4C-432	0.45	1.99	1.00	0.54	2.80	1.52	2.61	0.47	1.97	1.26	1.21	6.02	4.70	11.62
4C-441	0.59	3.60	4.21	3.07	4.60	4.45	3.69	1.50	4.13	6.90	7.23	22.24	15.14	14.48
4C-442	1.00	0.00	2.00	0.00	1.00			0.72	0.00	0.67	0.00	1.78		
4N-311	1.64	2.50	4.85	2.26	0.22	4.85	0.48	1.02	3.98	10.38	0.58	0.70	12.31	2.19
4N-312	0.23	0.61	0.57	2.83	0.46	4.31	2.29	0.64	1.82	2.03	1.89	1.19	20.13	6.73
4N-313	1.76	5.07	2.45	2.12	1.51	5.71	6.00	4.25	8.49	4.97	0.50	2.05	21.05	18.27
4S-321	0.03	0.28	1.10	0.53	0.59	0.62	2.51	0.10	0.29	2.29	1.27	1.30	3.23	5.63
4S-322	0.00	0.01	0.19	2.00	0.02	2.14	1.06	0.02	0.01	0.40	0.19	0.09	20.15	1.24
4S-323	1.04	0.16	0.63	1.11	2.93	3.31	0.97	1.30	0.02	3.69	0.30	8.95	5.68	0.59
4S-324	1.19	0.02	1.03	0.06	1.23	0.37	1.19	0.47	0.04	2.24	0.14	2.00	0.73	0.87
4S-331	0.60	1.08	2.08	2.04	2.11	3.47	1.22	1.23	2.07	5.13	4.07	7.34	3.87	2.32
4S-332	0.93	0.19	0.04	2.00	0.43	1.70	1.01	0.97	0.31	0.15	1.38	2.27	4.31	1.02
4S-333	1.11	0.03	1.38	0.12	0.04	0.66	0.13	3.53	0.05	1.41	0.21	0.67	3.24	0.48
4S-334	0.00	0.00	0.00	2.01	0.00	0.67	1.16	0.00	0.00	0.00	3.63	0.00	4.59	1.29
4W-211	0.00	0.00	3.00	4.00	1.40	2.25	1.00	0.00	0.00	9.18	6.69	7.97	1.59	0.02
50N-311	2.00	0.00	0.10	0.00	0.08	0.00	1.00	0.85	3.30	0.19	0.00	0.15	0.00	1.09
50N-410	0.41	2.83	3.04	5.69	3.17	2.56	2.95	1.45	6.39	8.43	8.51	9.23	10.08	10.21
50N-411	0.10	0.03	2.74	5.68	1.11	1.10	3.89	0.15	0.07	3.53	4.97	3.39	1.32	7.96
50N-412	0.19	0.66	1.87	2.31	1.57	0.70	1.19	0.24	1.71	3.65	3.98	3.90	2.46	1.55
50N-415	1.26	1.36	0.25	7.07	3.29	3.00	1.41	3.05	0.74	0.69	9.44	7.88	3.56	4.11
50V-401	0.21	0.22	0.47	0.50	1.11	1.06	0.26	0.28	0.52	1.20	1.01	1.62	2.08	0.23
50V-402	1.18	2.14	0.02	1.06	1.24	0.04	1.44	1.20	8.09	0.04	1.61	1.54	0.10	2.19
50W-411	4.72	0.04	3.88	0.08	1.20	1.43	1.07	22.72	0.29	6.54	0.41	2.47	2.82	2.60
50W-412	7.43	1.47	5.16	3.68	2.79	2.60	3.07	30.62	4.38	16.38	17.73	7.17	3.87	6.89
51V-301	1.30	0.13	0.15	1.77	0.38	1.02	2.22	3.65	0.14	0.17	1.61	0.85	3.49	4.45
52V-251	0.00	0.00	0.00					0.00	0.00	0.00				
53N-Dist	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00

EXCLUSIONS
MED/EXT
Planned

	2017 CKAIFI	2018 CKAIFI	2019 CKAIFI	2020 CKAIFI	2021 CKAIFI	2022 CKAIFI	2023 CKAIFI	2017 CKAIDI	2018 CKAIDI	2019 CKAIDI	2020 CKAIDI	2021 CKAIDI	2022 CKAIDI	2023 CKAIDI
Avg + 2 St. Dev	4.65	5.44	6.16	4.88	5.90	5.47	5.81	12.15	20.47	20.51	13.22	17.81	17.81	16.98
St. Dev	1.55	1.84	1.97	1.52	1.92	1.76	1.91	4.44	8.03	7.37	4.67	6.47	7.32	6.09
Average	1.54	1.76	2.22	1.85	2.06	1.95	1.99	3.26	4.41	5.77	3.88	4.87	5.19	4.80

Source Feeder	2017 CKAIFI	2018 CKAIFI	2019 CKAIFI	2020 CKAIFI	2021 CKAIFI	2022 CKAIFI	2023 CKAIFI	2017 CKAIDI	2018 CKAIDI	2019 CKAIDI	2020 CKAIDI	2021 CKAIDI	2022 CKAIDI	2023 CKAIDI
54H-301	0.09	5.01	2.09	1.85	5.05	0.08	2.15	0.18	8.13	2.32	1.03	8.82	0.31	0.48
54H-302	0.03	1.08	1.19	5.63	2.06	0.01	2.24	0.04	1.10	0.60	6.24	4.82	0.08	7.24
54H-303	0.05	2.05	1.99	1.00	4.58	0.03	1.07	0.16	4.32	2.13	0.95	10.74	0.03	0.50
54H-304	1.01	1.02	4.03	5.23	4.06	0.04	3.59	0.31	1.06	4.34	6.33	6.74	0.10	4.58
55N-201	0.03	0.00	1.01	1.00	0.21	0.08	1.01	0.09	0.01	0.94	0.04	0.54	0.89	0.93
55N-202	0.00	0.01	2.29	1.44	0.34	1.00	2.11	0.02	0.08	6.49	1.08	2.18	0.66	2.45
55N-203	0.06	0.17	1.07	1.04	0.15	0.15	1.02	0.16	0.19	2.17	0.08	0.28	0.27	1.07
55N-204	0.09	1.28	0.07	1.16	0.15	0.17	2.06	0.13	1.92	0.21	0.15	0.13	0.83	1.28
55V-313	1.27	1.74	0.78	2.34	1.64	2.24	1.67	3.41	5.13	1.89	14.70	2.88	8.85	1.24
55V-314	3.52	1.68	2.20	1.26	1.90	2.49	2.02	8.74	5.62	5.02	2.97	5.77	5.51	1.05
55V-322	1.05	0.42	0.94	1.60	1.37	0.35	1.06	1.00	1.70	1.94	3.68	2.02	0.32	0.34
55V-323	0.28	0.89	1.08	1.24	1.74	0.19	1.26	0.40	4.40	0.42	2.66	2.78	0.71	0.72
56N-401	3.32	2.83	1.69	3.49	2.68	2.94	2.67	5.59	3.18	2.81	5.29	4.47	5.50	7.15
56N-402	1.00	0.00	0.00	1.00	0.09	0.18	1.09	1.60	0.00	0.00	0.04	0.79	0.53	1.23
56N-414	3.22	4.15	1.87	3.24	2.10	2.89	4.82	6.22	5.42	7.31	2.44	4.02	17.09	16.86
57C-417	3.06	0.03	1.03	0.04	1.07	1.06	0.07	4.78	0.05	1.42	0.05	4.28	4.63	0.23
57C-422	4.05	3.10	2.14	2.96	2.65	3.56	1.72	5.93	17.73	4.76	4.44	5.99	6.30	3.76
57C-426	4.19	4.23	2.63	4.07	2.69	4.23	1.58	10.92	11.58	7.18	7.90	12.88	29.60	5.19
57S-401	2.60	2.41	4.36	4.19	2.40	6.58	8.37	7.12	6.72	8.42	10.25	9.73	24.72	29.76
57S-402	5.89	3.79	4.85	3.66	2.71	5.54	2.91	11.01	11.80	10.22	8.05	14.45	19.02	13.90
57W-401	2.44	3.93	2.86	5.58	2.62	4.87	10.42	5.13	18.67	11.01	10.40	3.34	19.64	13.41
57W-402	1.09	0.19	4.05	5.84	2.29	2.06	8.23	0.26	0.63	18.78	8.87	3.23	6.03	6.49
58C-403	5.11	6.67	7.21	2.11	5.10	4.17	0.28	14.53	9.03	28.40	6.96	48.89	6.08	1.01
58C-405	4.70	2.95	9.16	3.75	7.18	1.79	2.14	12.92	7.49	32.60	8.53	20.13	4.20	5.57
58H-421	0.03	0.10	1.02	1.04	4.04	3.03	5.03	0.05	0.43	2.04	0.95	6.81	8.56	12.88
58H-431	0.08	1.20	2.02	0.06	4.87	4.47	3.28	0.23	1.98	3.25	0.16	9.07	10.92	2.59
58H-Dist				0.00	0.00	0.00	0.00				0.00	0.00	0.00	0.00
59C-401	0.18	0.10	4.42	4.06	4.02	4.94	1.37	0.25	0.25	17.91	14.69	14.48	12.41	0.66
59C-402	2.73	2.10	8.37	5.04	6.35	2.59	2.03	8.65	6.16	29.81	12.14	29.07	10.72	9.06
59C-403	1.09	1.00	7.40	2.30	1.29	0.07	0.02	3.34	5.51	20.16	2.26	5.24	0.43	0.14
62H-301	0.00	0.00	0.00	0.00	0.00	1.97	2.00	0.01	0.00	0.00	0.00	0.00	2.26	8.63
62H-302	0.14	2.05	0.01	0.15	1.06	2.76	2.24	0.48	2.28	0.00	1.06	1.13	2.08	5.82
62H-303	0.00	0.00	1.00	1.02	0.00	0.00	4.04	0.00	0.00	0.25	3.03	0.00	0.00	5.09
62H-304	0.17	0.08	0.10	0.11	1.00	0.21	4.02	0.17	0.14	0.64	0.30	1.26	0.30	5.03
62N-411	0.06	3.13	2.14	2.93	2.07	4.03	1.22	0.07	3.54	3.88	2.23	1.08	2.68	0.64
62N-412	1.15	1.17	1.82	2.02	3.78	4.08	1.01	0.46	0.52	3.24	1.50	3.77	3.87	2.45
62N-413	0.55	2.51	3.19	4.11	6.19	5.44	4.77	0.55	3.19	6.52	5.33	7.88	12.92	5.52
62N-414	2.48	0.22	3.07	2.33	4.88	4.43	2.17	6.05	0.47	5.21	2.21	3.16	6.54	2.53
62N-415	3.09	1.57	1.40	3.30	4.29	5.36	3.79	2.86	4.71	3.87	3.22	2.56	9.52	8.88
62N-416	1.52	1.83	1.67	3.38	3.36	5.13	1.23	1.18	1.51	3.88	3.13	2.61	4.98	1.36
63V-311	0.36	2.24	1.06	1.69	2.21	0.44	1.16	0.57	2.17	2.30	3.14	3.22	1.19	1.06
63V-312	0.42	0.12	1.75	1.09	1.89	0.63	1.45	0.66	0.40	2.33	6.07	3.67	0.86	4.14
63V-313	0.76	2.32	1.14	0.20	2.44	1.20	2.30	1.14	6.50	3.80	1.50	5.78	4.30	2.46
64V-301	0.11	2.93	0.25	1.31	2.19	1.18	1.80	0.25	5.44	0.61	2.95	5.15	4.03	2.63
64V-302		1.00	0.00	1.52	1.15	0.00	0.00	0.00	1.44	0.06	2.17	1.65	0.01	0.01
64V-303	0.00	0.00	0.00		1.20	1.00	2.00	0.00	0.00	0.00		1.62	3.37	3.82
65V-301	0.44	3.98	4.28	6.44	3.33	5.01	2.30	0.50	7.56	4.45	11.62	6.66	6.61	7.59
65V-302	1.08	2.46	5.51	0.64	0.53	0.76	0.13	1.34	7.49	9.39	3.47	2.11	1.97	0.41
65V-303	0.27	0.40	5.72	1.09	2.07	0.07	1.09	0.23	0.60	15.76	0.92	10.08	0.21	1.35
67C-411	4.69	4.31	8.89	2.72	7.50	2.06	1.70	11.34	15.02	34.14	14.90	39.97	5.41	5.89
67C-412	3.60	0.90	7.41	2.45	1.43	3.95	1.50	11.13	12.65	22.63	5.95	6.51	13.81	5.03

EXCLUSIONS
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	2017 CKAIFI	2018 CKAIFI	2019 CKAIFI	2020 CKAIFI	2021 CKAIFI	2022 CKAIFI	2023 CKAIFI	2017 CKAIDI	2018 CKAIDI	2019 CKAIDI	2020 CKAIDI	2021 CKAIDI	2022 CKAIDI	2023 CKAIDI
Avg + 2 St. Dev	4.65	5.44	6.16	4.88	5.90	5.47	5.81	12.15	20.47	20.51	13.22	17.81	17.81	16.98
St. Dev	1.55	1.84	1.97	1.52	1.92	1.76	1.91	4.44	8.03	7.37	4.67	6.47	7.32	6.09
Average	1.54	1.76	2.22	1.85	2.06	1.95	1.99	3.26	4.41	5.77	3.88	4.87	5.19	4.80

Source Feeder	2017 CKAIFI	2018 CKAIFI	2019 CKAIFI	2020 CKAIFI	2021 CKAIFI	2022 CKAIFI	2023 CKAIFI	2017 CKAIDI	2018 CKAIDI	2019 CKAIDI	2020 CKAIDI	2021 CKAIDI	2022 CKAIDI	2023 CKAIDI
6N-301	2.05	1.19	1.10	1.03	0.23	2.19	3.23	3.32	1.39	3.48	0.35	0.39	1.43	20.97
6N-302	2.14	0.09	1.01	0.17	0.43	1.05	7.29	3.48	0.21	3.08	0.56	0.52	0.20	30.85
6S-221	0.00	0.14	1.22	0.12	0.00	0.15		0.00	0.27	3.92	0.11	0.01	0.85	
6S-223	0.10	1.03	0.00					0.24	1.66	0.00				
6S-224	0.04	0.06	0.00	1.00	0.00			0.05	0.08	0.01	2.94	0.00		
6S-225	1.04	0.07	2.16	0.01	1.09	0.07		0.35	0.17	2.18	0.04	3.50	1.66	
6W-201	0.00	0.25	4.25	2.25	2.00	1.00	2.00	0.00	0.18	30.18	1.06	0.54	0.07	0.96
70V-311	0.89	3.08	2.62	2.90	1.46	2.10	0.34	1.64	6.35	4.40	7.72	2.42	4.32	0.91
70V-312	3.54	3.12	3.95	2.40	2.33	4.65	2.66	5.99	6.56	7.77	5.03	5.87	9.24	7.95
70W-203	0.05	0.00	1.00	2.00	4.11	0.11	1.06	0.04	0.01	2.30	0.55	0.58	0.33	0.20
70W-204	0.03	0.00	1.17	2.00	4.00	0.01	1.00	0.15	0.00	2.49	0.57	0.17	0.03	0.04
70W-311	2.15	1.15	1.53	2.81	5.87	2.88	6.68	9.32	3.69	4.79	2.83	7.75	4.88	12.21
70W-312	0.10	0.14	1.03	2.17	5.06	2.14	1.04	0.36	0.15	2.35	1.58	1.31	1.81	0.14
70W-313	3.80	1.23	4.21	3.22	6.76	1.37	4.24	9.48	1.33	12.46	2.26	6.65	3.21	7.76
70W-314	1.11	0.15	1.86	2.73	4.00	1.09	1.00	1.97	0.09	2.56	1.14	0.18	4.69	0.05
70W-321	0.77	0.10	2.15	2.10	5.14	1.05	3.34	1.19	0.28	3.73	0.76	1.17	1.35	4.44
70W-322	1.03	0.03	1.07	2.01	4.03	1.03	1.02	0.81	0.04	2.45	0.57	0.51	1.57	0.10
73W-411	2.98	2.14	4.76	3.02	3.75	2.65	5.91	5.78	3.80	9.74	3.57	14.63	21.34	15.60
73W-412	0.00	0.06	2.02	2.01	2.02	0.02	1.01	0.00	0.18	2.67	0.68	10.34	0.07	4.58
74N-411	2.25	1.12	1.21	0.34	0.39	2.18	2.50	4.48	2.26	3.58	0.79	0.39	1.51	10.03
74N-412	3.00	1.86	2.78	3.70	1.50	2.30	5.10	5.08	6.18	9.81	8.05	2.66	14.91	7.68
74V-301	1.00	2.00	1.74	1.03	0.01	2.64	1.01	1.82	3.28	7.85	0.13	0.02	3.04	3.62
74V-302	1.11	1.11	2.00	1.00	0.13	2.00	1.00	1.97	1.01	6.55	0.05	0.17	1.94	3.59
74W-301	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
75N-251	0.00	0.00	0.00					0.00	0.00	0.00				
76V-301	2.59	3.94	3.11	7.80	3.94	3.52	11.33	8.02	12.64	10.77	18.86	8.61	14.11	24.82
76W-201	1.00	7.00	0.00	0.00	0.00	2.00	4.00	1.41	14.45	0.00	0.00	0.00	5.30	12.75
77V-301	1.00	2.64	2.05	0.00	1.01	1.78	0.11	2.93	3.47	2.83	0.01	0.63	3.00	0.28
77V-302	2.72	2.25	4.65	2.36	1.32	2.98	0.19	5.89	4.65	9.84	13.53	2.74	15.63	0.62
77V-303	2.33	0.31	2.26	1.60	0.37	1.96	0.03	4.70	0.40	3.32	4.63	1.58	2.73	0.05
77V-401	3.65	4.28	4.99	6.06	4.59	3.69	3.44	12.86	9.88	9.42	14.72	23.00	4.71	8.17
78W-301	2.55	8.28	1.58	1.26	1.29	5.04	3.67	7.80	23.85	6.32	4.25	4.41	10.50	17.77
78W-302	6.33	7.76	1.65	0.35	1.06	3.07	3.80	9.73	17.90	3.81	0.88	1.58	5.68	17.64
79V-401	2.64	2.04	4.86	2.47	2.12	1.33	1.35	1.07	4.50	5.72	3.45	6.37	3.49	4.87
79V-402	2.18	1.49	1.07	2.06	2.46	2.68	1.46	0.62	0.61	0.17	1.29	1.90	4.19	4.12
79V-403	2.28	2.25	5.66	1.32	1.07	2.11	1.48	1.03	2.39	5.49	1.37	0.62	4.06	4.57
7N-211	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7N-301	2.74	4.84	3.60	0.34	0.16	1.17	2.65	3.80	8.11	14.03	0.36	0.32	2.13	6.43
7N-302	5.14	4.32	1.16	2.07	1.12	0.56	0.27	11.35	5.89	3.46	3.87	0.32	4.52	0.52
80W-301	3.38	7.39	0.32	0.61	1.94	4.38	4.26	6.13	15.54	1.05	1.76	3.44	17.80	17.23
80W-302	0.03	7.00	0.00	0.00	0.00	3.00	4.00	0.04	14.50	0.00	0.00	0.00	5.22	12.33
80W-303	2.00	7.00	0.00					3.22	14.50	0.00				
81N-411	1.59	3.50	1.10	1.05	4.29	2.43	1.92	1.45	6.76	2.58	1.64	4.08	13.15	6.14
81N-412	1.62	2.64	3.48	1.24	2.07	2.77	1.31	3.99	18.42	3.85	2.12	7.02	13.89	3.70
81S-301	2.21	2.16	1.22	0.15	2.16	1.32	6.19	2.24	4.73	0.77	0.43	4.28	4.71	4.57
81S-302	4.94	2.22	1.35	1.42	0.31	2.90	9.52	11.85	3.95	3.40	3.32	0.97	13.34	11.75
81S-303	2.25	2.04	3.52	2.31	1.10	1.04	8.35	3.54	8.71	4.22	6.71	1.92	1.87	21.31
81S-304	4.06	1.03	2.08	1.05	0.18	1.19	5.22	3.67	3.10	2.21	2.23	0.27	1.37	12.64
81S-305	2.55	2.12	1.10	3.07	0.32	0.63	7.18	2.51	4.02	1.53	2.76	0.79	2.32	22.93
81S-306	1.22	3.75	0.16	4.35	1.29	1.78	6.38	3.46	9.29	0.39	7.14	7.89	4.91	10.66
81S-307	2.18	2.10	0.22	0.25	1.20	1.20	6.11	2.65	3.32	0.47	0.79	3.24	17.58	7.83

EXCLUSIONS
MED/EXT
Planned

	2017 CKAIFI	2018 CKAIFI	2019 CKAIFI	2020 CKAIFI	2021 CKAIFI	2022 CKAIFI	2023 CKAIFI	2017 CKAIDI	2018 CKAIDI	2019 CKAIDI	2020 CKAIDI	2021 CKAIDI	2022 CKAIDI	2023 CKAIDI
Avg + 2 St. Dev	4.65	5.44	6.16	4.88	5.90	5.47	5.81	12.15	20.47	20.51	13.22	17.81	17.81	16.98
St. Dev	1.55	1.84	1.97	1.52	1.92	1.76	1.91	4.44	8.03	7.37	4.67	6.47	7.32	6.09
Average	1.54	1.76	2.22	1.85	2.06	1.95	1.99	3.26	4.41	5.77	3.88	4.87	5.19	4.80

Source Feeder	2017 CKAIFI	2018 CKAIFI	2019 CKAIFI	2020 CKAIFI	2021 CKAIFI	2022 CKAIFI	2023 CKAIFI	2017 CKAIDI	2018 CKAIDI	2019 CKAIDI	2020 CKAIDI	2021 CKAIDI	2022 CKAIDI	2023 CKAIDI
81W-Dist	0.00	0.00	0.27	0.68	2.09	2.72	0.17	0.00	0.00	0.58	1.18	8.01	7.70	1.14
82S-302	1.00	0.01	1.00	3.71	1.97	1.05	2.02	3.35	0.04	1.57	6.58	2.33	0.67	6.61
82S-303	2.12	0.19	1.08	2.03	0.44	2.16	5.07	1.59	0.52	1.89	2.35	0.90	7.13	11.93
82S-304	2.07	1.38	1.80	2.40	1.10	0.54	1.47	2.14	1.75	3.22	3.27	0.99	3.46	1.11
82V-401	4.04	1.66	0.47	4.93	1.80	0.73	5.15	5.86	5.01	4.26	6.41	5.38	1.52	13.73
82V-402	3.25	1.21	2.34	3.96	6.11	3.45	7.81	2.37	2.28	8.92	4.54	10.19	8.10	8.47
82V-403	2.04	0.05	4.27	2.04	3.13	0.05	2.60	3.01	0.19	4.25	5.20	6.75	0.11	4.50
82V-422	1.02	0.99	0.13	0.13	3.69	0.94	4.14	0.53	0.10	1.54	0.24	4.54	2.27	2.71
82V-423	1.69	2.77	2.46	1.89	5.45	0.66	5.12	2.08	5.14	2.64	1.93	4.24	1.29	7.23
82W-Dist	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
83V-301	1.21	1.85	1.02	1.25	4.75	0.86	1.32	1.32	5.70	2.86	8.03	7.78	3.34	2.36
83V-302	1.03	0.44	0.09	0.04	2.40	0.06	0.00	0.57	0.35	0.09	0.08	1.78	0.09	0.02
83V-303	3.34	4.79	0.49	1.24	2.83	0.30	2.22	6.36	16.93	1.57	1.45	5.31	0.96	3.91
84S-302	1.01	1.09	4.46	1.03	1.02	6.04	0.04	1.07	0.52	16.35	0.49	2.18	22.35	0.38
84S-303				0.00	2.09	3.77	0.08				0.00	12.45	87.54	0.75
84S-304	0.40	0.40	1.00	1.44	0.90			0.75	0.65	4.40	2.61	3.54		
84S-305	1.07	1.03	2.45	3.36	0.44	2.14	2.03	1.47	1.74	6.96	11.32	1.63	5.33	3.13
84W-301	5.81	1.14	4.21	2.06	1.40	2.36	2.66	12.55	1.63	8.37	2.41	0.79	1.95	13.72
84W-302	3.97	0.14	1.22	0.19	2.20	0.17	1.93	6.38	0.47	40.59	0.78	4.38	0.66	11.99
85S-401	5.76	17.45	7.64	4.85	3.79	7.98	7.50	20.54	67.68	38.34	14.30	16.87	13.83	22.54
85S-402	8.60	4.43	2.03	1.18	1.78	1.04	1.41	28.25	15.66	1.52	3.19	4.92	4.06	2.53
85S-405*	4.00	9.00						11.00	107.03					
87H-311	0.05	0.38	1.45	1.84	0.25	1.12	2.40	0.15	0.84	3.45	1.62	1.86	15.57	7.29
87H-312	0.27	2.11	0.31	2.21	0.55	2.67	1.15	0.17	8.16	0.96	1.32	0.84	21.31	1.27
87H-313	0.18	1.19	2.73	4.47	2.30	2.23	2.63	0.93	2.85	8.02	5.66	4.97	21.28	10.19
87W-311	1.42	2.43	4.56	2.58	1.93	2.86	1.51	2.67	6.24	21.08	3.48	2.27	7.90	5.10
87W-312	1.75	1.39	5.14	2.63	4.11	3.09	3.81	14.41	3.43	27.74	7.56	8.70	4.83	8.00
88H-401	1.88	2.39	5.76	2.61	1.66	5.43	3.51	5.66	9.36	21.31	17.24	9.23	16.36	9.93
88H-402	1.19	5.74	9.60	2.69	1.72	4.15	1.71	3.30	22.83	21.82	17.49	9.81	15.33	5.06
88W-311	0.12	0.14	2.09	1.06	1.04	0.72	1.08	0.25	0.18	2.86	1.07	0.30	0.73	0.54
88W-312	0.07	0.18	3.83	3.38	1.22	3.19	3.08	0.18	0.35	6.70	3.65	1.81	3.87	2.97
88W-313	0.00	3.22	2.05	1.00	0.15	1.01	0.03	0.00	3.95	2.76	0.93	0.51	1.32	0.07
88W-314	0.63	1.05	3.66	1.46	2.25	0.44	1.05	0.75	2.85	8.40	1.89	1.99	0.75	5.99
88W-321	0.00	0.00	0.00					0.00	0.00	0.00				
88W-322	1.19	0.57	1.15	1.01	4.01	0.13	0.01	2.36	0.83	1.79	0.32	2.25	0.10	0.03
88W-323	1.23	1.47	2.44	1.21	6.19	3.27	0.06	2.83	9.23	15.08	0.70	8.04	5.49	0.17
89H-401	0.10	1.39	3.31	3.10	1.68	2.14		1.58	4.49	14.06	11.77	7.09	2.64	
89W-301	0.03	1.09	3.00	2.02	0.82	1.02	0.00	0.02	1.23	2.78	0.58	1.07	4.54	0.00
89W-302	0.35	1.09	4.82	3.55	1.08	1.09	0.22	1.27	1.29	5.53	1.90	1.81	4.62	1.39
89W-303	0.36	2.47	2.77	4.60	0.69	1.15	1.24	1.31	6.91	6.06	9.06	1.05	5.07	3.72
89W-304	0.06	1.02	2.05	3.11	1.10	1.63	0.97	0.11	1.12	2.83	2.67	1.22	7.74	2.75
91W-411	5.48	0.27	6.39	4.82	4.70	5.15	8.87	9.36	1.24	25.75	10.67	4.95	20.22	16.54
92H-331	2.34	1.23	3.32	3.37	3.05	2.01	2.14	9.74	1.67	7.11	2.27	2.49	6.38	1.12
92H-332	2.40	1.05	4.42	0.45	1.81	3.07	4.39	4.47	2.36	8.46	0.55	0.83	2.80	14.41
92H-333/L-3202	0.00	0.00	1.54	0.15	2.00	0.00	0.00	0.00	0.00	3.31	0.42	5.94	0.00	0.00
92H-334	0.08	0.05	2.33	1.09	1.20	0.21	1.56	0.21	0.09	5.91	1.56	0.48	0.72	9.17
92V-Dist	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00
92W-302	3.92	0.33	6.50	2.09	0.76	2.13	1.56	6.99	0.69	7.52	4.67	1.32	3.59	1.57
93V-311	1.20	2.12	3.21	4.24	2.24	4.25	3.26	1.43	12.38	14.76	8.16	2.59	10.58	6.89
93V-312	0.02	2.16	2.11	4.13	1.03	1.11	7.11	0.08	12.29	11.96	7.92	0.98	8.69	13.29
93V-313	0.34	3.65	5.54	7.45	0.16	2.49	4.27	0.47	12.51	19.05	15.87	1.01	9.27	10.36

EXCLUSIONS
MED/EXT
Planned

	2017 CKAIFI	2018 CKAIFI	2019 CKAIFI	2020 CKAIFI	2021 CKAIFI	2022 CKAIFI	2023 CKAIFI	2017 CKAIDI	2018 CKAIDI	2019 CKAIDI	2020 CKAIDI	2021 CKAIDI	2022 CKAIDI	2023 CKAIDI
Avg + 2 St. Dev	4.65	5.44	6.16	4.88	5.90	5.47	5.81	12.15	20.47	20.51	13.22	17.81	17.81	16.98
St. Dev	1.55	1.84	1.97	1.52	1.92	1.76	1.91	4.44	8.03	7.37	4.67	6.47	7.32	6.09
Average	1.54	1.76	2.22	1.85	2.06	1.95	1.99	3.26	4.41	5.77	3.88	4.87	5.19	4.80

Source Feeder	2017 CKAIFI	2018 CKAIFI	2019 CKAIFI	2020 CKAIFI	2021 CKAIFI	2022 CKAIFI	2023 CKAIFI	2017 CKAIDI	2018 CKAIDI	2019 CKAIDI	2020 CKAIDI	2021 CKAIDI	2022 CKAIDI	2023 CKAIDI
93V-314	0.00	2.12	1.17	3.00	0.13	2.61	3.04	0.00	11.89	10.33	7.25	0.54	8.75	6.62
95H-251	0.07	3.43	2.80	3.54	2.17	5.68	2.95	1.18	11.11	30.52	12.84	17.68	9.31	14.40
96H-411	0.35	4.06	6.60	4.07	4.25	5.57	3.85	1.03	12.67	13.46	17.36	12.78	14.42	15.76
96H-412	0.38	3.24	7.58	5.47	1.26	4.58	3.71	1.62	7.87	46.76	29.26	3.43	19.47	11.40
99H-311	2.18	0.01	1.02	2.16	2.05	0.07	3.94	6.33	0.02	3.98	5.83	3.41	0.26	4.22
99H-312	4.13	3.12	1.80	2.00	3.01	1.21	1.88	8.78	4.01	5.49	5.45	2.73	4.05	3.81
99V-311	0.04	0.26	0.01	2.12	2.16	1.15	2.01	0.06	0.41	0.01	1.31	5.02	0.33	3.22
99V-312	0.00	4.16	0.12	3.13	5.18	3.24	3.22	0.00	13.23	0.13	1.74	6.06	4.67	3.97
99V-313	0.00	1.27	0.05	1.03	1.05	1.17	1.00	0.00	2.19	0.06	0.12	0.64	0.45	1.91
99V-314	0.30	4.07	2.42	2.32	2.01	2.65	1.57	1.11	13.83	4.25	1.83	8.92	5.75	3.68
9C-301	4.00	2.00	2.75	0.00	1.80	1.97	1.00	193.20	3.03	13.64	0.00	7.35	4.84	1.50
9C-302	2.60	0.00	2.00	1.00	1.00	1.00	0.00	7.36	0.00	10.17	0.15	5.84	2.36	0.00
9C-303	4.60	1.88	9.00	0.12	1.11	2.91	1.05	10.57	43.90	34.68	0.81	6.10	6.51	2.02
9C-304	2.12	0.06	1.97	0.04	1.04	1.03	2.01	7.39	0.09	9.96	0.04	6.92	2.42	10.05
L-4048	0.00	2.00	0.00	0.00	1.00	0.00	0.00	0.00	4.93	0.00	0.00	5.03	0.00	0.00
L-4049	0.00	1.07	1.98	1.01	0.01	1.13	1.07	0.00	2.67	2.67	2.86	0.03	0.84	4.01

Event Type	Feeder	Feeder Section	Source	Start	Restore	Duration (Minutes)	Customer Hours of Interruption	Customers Interrupted	CEA Description	Sub-Cause
MED	23W-302	23W-302	23W-302	5/28/2023 16:45	6/9/2023 15:06	17181.48	286.358	1	Loss of Supply	Planned Transmission
MED	137H-412	137H-412	137H-412	5/28/2023 17:15	6/9/2023 14:38	17123.64	196065.678	687	Adverse Environment	Building/Forest Fire
MED	23W-301	23W-301	23W-301	5/28/2023 16:45	6/9/2023 17:52	17347.26	16190.776	56	Loss of Supply	Planned Transmission
MED	23W-302	23W-302H	23W-302	5/28/2023 16:45	6/9/2023 14:26	17141.94	137421.219	481	Loss of Supply	Planned Transmission
MED	23W-302	23W-302G	23W-302	5/28/2023 16:45	6/9/2023 15:27	17202.06	67088.034	234	Loss of Supply	Planned Transmission
MED	23W-302	23W-302G	23W-302	5/28/2023 16:45	6/9/2023 16:38	17273.52	9788.328	34	Loss of Supply	Planned Transmission
MED	23W-301	23W-301	23W-301	5/28/2023 16:45	6/9/2023 15:10	17185.32	12888.99	45	Loss of Supply	Planned Transmission
MED	23W-301	23W-301	23W-301	5/28/2023 16:45	6/9/2023 14:22	17137.26	12852.945	45	Loss of Supply	Planned Transmission
MED	23W-302	23W-302	23W-302	5/28/2023 16:45	6/9/2023 14:11	17126.28	7706.826	27	Loss of Supply	Planned Transmission
MED	23W-301	23W-301	23W-301	5/28/2023 16:45	6/9/2023 15:13	17188.38	20053.11	70	Loss of Supply	Planned Transmission
MED	23W-302	23W-302	23W-302	5/28/2023 16:45	6/9/2023 15:50	17225.94	4880.683	17	Loss of Supply	Planned Transmission
MED	23W-302	23W-302	23W-302	5/28/2023 16:45	6/9/2023 16:06	17241.84	34771.044	121	Loss of Supply	Planned Transmission
MED	137H-411	137H-411G	137H-411	5/28/2023 19:31	6/5/2023 22:41	11710.98	3122.928	16	Adverse Environment	Building/Forest Fire
MED	137H-411	137H-411G	137H-411	5/28/2023 19:31	6/5/2023 22:43	11712.06	195.201	1	Adverse Environment	Building/Forest Fire
MED	137H-411	137H-411G	137H-411	5/28/2023 19:31	6/5/2023 22:42	11711.7	195.195	1	Adverse Environment	Building/Forest Fire
MED	137H-411	137H-411G	137H-411	5/28/2023 19:31	6/5/2023 22:42	11711.4	6831.65	35	Adverse Environment	Building/Forest Fire
MED	137H-411	137H-411G	137H-411	5/28/2023 19:31	6/5/2023 22:41	11710.14	390.338	2	Adverse Environment	Building/Forest Fire
MED	137H-411	137H-411G	137H-411	5/28/2023 19:31	6/5/2023 22:40	11709.84	1366.148	7	Adverse Environment	Building/Forest Fire
MED	137H-411	137H-411G	137H-411	5/28/2023 19:31	6/5/2023 22:40	11709.66	780.644	4	Adverse Environment	Building/Forest Fire
MED	137H-411	137H-411G	137H-411	5/28/2023 19:31	6/5/2023 22:40	11709.3	195.155	1	Adverse Environment	Building/Forest Fire
MED	137H-411	137H-411G	137H-411	5/28/2023 19:31	6/5/2023 22:39	11708.94	5464.172	28	Adverse Environment	Building/Forest Fire
MED	137H-411	137H-411G	137H-411	5/28/2023 19:31	6/5/2023 22:39	11708.64	195.144	1	Adverse Environment	Building/Forest Fire
MED	137H-411	137H-411G	137H-411	5/28/2023 19:31	6/5/2023 22:39	11708.1	975.675	5	Adverse Environment	Building/Forest Fire
MED	137H-411	137H-411G	137H-411	5/28/2023 19:31	6/5/2023 22:38	11707.74	195.129	1	Adverse Environment	Building/Forest Fire
MED	137H-411	137H-411G	137H-411	5/28/2023 19:31	6/5/2023 22:37	11706.72	975.56	5	Adverse Environment	Building/Forest Fire
MED	137H-411	137H-411G	137H-411	5/28/2023 19:31	6/5/2023 22:37	11706.42	195.107	1	Adverse Environment	Building/Forest Fire
MED	137H-411	137H-411G	137H-411	5/28/2023 19:31	6/4/2023 15:58	9867.66	112491.324	684	Adverse Environment	Building/Forest Fire
MED	137H-411	137H-411G	137H-411	5/28/2023 19:31	6/5/2023 22:37	11706.06	1755.909	9	Adverse Environment	Building/Forest Fire
MED	137H-411	137H-411G	137H-411	5/28/2023 19:31	6/5/2023 22:36	11705.76	1365.672	7	Adverse Environment	Building/Forest Fire
MED	137H-411	137H-411G	137H-411	5/28/2023 19:31	6/5/2023 22:36	11705.4	585.27	3	Adverse Environment	Building/Forest Fire
MED	137H-411	137H-411G	137H-411	5/28/2023 19:31	6/4/2023 15:59	9868.74	20888.833	127	Adverse Environment	Building/Forest Fire
MED	137H-411	137H-411G	137H-411	5/28/2023 19:31	6/5/2023 22:35	11704.98	585.249	3	Adverse Environment	Building/Forest Fire
MED	137H-411	137H-411G	137H-411	5/28/2023 19:31	6/4/2023 15:59	9868.32	26315.52	160	Adverse Environment	Building/Forest Fire
MED	137H-412	137H-412G	137H-412	5/28/2023 17:15	6/2/2023 17:56	7241.52	93536.3	775	Adverse Environment	Building/Forest Fire
MED	137H-412	137H-412	137H-412	5/28/2023 18:26	6/4/2023 16:54	9988.32	38621.504	232	Adverse Environment	Building/Forest Fire
MED	137H-412	137H-412	137H-412	5/28/2023 18:26	6/9/2023 14:49	17063.88	3412.776	12	Adverse Environment	Building/Forest Fire
MED	137H-412	137H-412G	137H-412	5/28/2023 17:15	6/9/2023 14:56	17141.52	8285.068	29	Adverse Environment	Building/Forest Fire
MED	50N-411	50N-411G	50N-411	5/28/2023 23:39	5/29/2023 2:25	166.08	2.768	1	Unknown	Unknown
MED	103W-312	103W-312	103W-312	5/28/2023 19:44	5/28/2023 23:53	249.3	473.67	114	Adverse Environment	Building/Forest Fire
MED	88H-401		88H-401	5/28/2023 20:30	5/28/2023 22:10	100.98	2795.463	1661	Tree Contacts	Falling Trees
MED	1N-403	1N-403	1N-403	5/28/2023 15:15	5/29/2023 1:12	597.12	159.232	16	Unknown	Unknown
MED	50N-410	50N-410GAAA	50N-410	5/28/2023 19:55	5/28/2023 21:21	86.16	5.744	4	Unknown	Unknown
MED	91W-411	91W-411G	91W-411	5/28/2023 19:52	5/29/2023 3:40	468.78	7.813	1	Unknown	Unknown

Event Type	Feeder	Feeder Section	Source	Start	Restore	Duration (Minutes)	Customer Hours of Interruption	Customers Interrupted	CEA Description	Sub-Cause
MED	62N-413	62N-413	62N-413	5/28/2023 19:53	5/28/2023 20:23	30.42	1.014	2	Unknown	Unknown
MED	1C-411	1C-411	1C-411	5/28/2023 19:50	5/28/2023 22:38	168.66	2.811	1	Unknown	Unknown
MED	131H-422	103W-311G	131H-422	5/28/2023 19:45	5/28/2023 20:58	73.02	1870.529	1537	Adverse Environment	Building/Forest Fire
MED	103W-312		103W-312	5/28/2023 19:44	5/28/2023 20:51	67.32	1640.364	1462	Adverse Environment	Building/Forest Fire
MED	137H-411	137H-411G	137H-411	5/28/2023 19:31	5/31/2023 15:48	4097.94	16050.265	235	Adverse Environment	Building/Forest Fire
MED	22N-403	22N-403G	22N-403	5/28/2023 18:54	5/28/2023 21:58	184.8	49.28	16	Defective Equipment	Mechanical Failure
MED	81S-303	81S-303G	81S-303	5/28/2023 18:42	5/28/2023 21:36	174.06	2.901	1	Unknown	Unknown
MED	1N-405	1N-405H	1N-405	5/28/2023 18:34	5/28/2023 19:51	77.94	3.897	3	Unknown	Unknown
MED	137H-412		137H-412	5/28/2023 18:26	5/30/2023 14:34	2648.58	23484.076	532	Adverse Environment	Building/Forest Fire
MED	137H-412	137H-412	137H-412	5/28/2023 18:05	6/9/2023 14:33	17068.32	83350.296	293	Adverse Environment	Building/Forest Fire
MED	88H-401	507H-311	88H-401	5/28/2023 17:53	5/28/2023 19:09	76.98	1.283	1	Tree Contacts	Falling Trees
MED	62N-413	62N-413L	62N-413	5/28/2023 19:17	5/28/2023 19:35	18.54	224.952	728	Tree Contacts	Falling Trees
MED	88H-402	619N-301	88H-402	5/28/2023 15:59	5/28/2023 22:45	406.56	20.328	3	Unknown	Unknown
MED	103W-312	103W-312G	103W-312	5/28/2023 17:28	5/28/2023 19:40	132.06	15.407	7	Tree Contacts	Untrimmed Tree
MED	79V-402	79V-402	79V-402	5/28/2023 17:24	5/29/2023 1:11	467.4	15.58	2	Defective Equipment	Mechanical Failure
MED	57S-401	57S-401	57S-401	5/28/2023 17:18	5/28/2023 23:25	367.38	6.123	1	Unknown	Unknown
MED	81N-412	81N-412G	81N-412	5/28/2023 17:16	5/28/2023 19:24	128.52	2.142	1	Tree Contacts	Falling Trees
MED	137H-412	137H-412G	137H-412	5/28/2023 17:15	5/30/2023 14:29	2714.34	22709.978	502	Adverse Environment	Building/Forest Fire
MED	36V-303		36V-303	5/28/2023 16:54	5/28/2023 18:48	114	3378.2	1778	Tree Contacts	Falling Trees
MED	131H-422		131H-422	5/28/2023 16:45	5/28/2023 19:11	146.52	2466.42	1010	Loss of Supply	Planned Transmission
MED	25W-303		25W-303	5/28/2023 16:45	5/28/2023 19:11	146.52	2661.78	1090	Loss of Supply	Planned Transmission
MED	25W-302		25W-302	5/28/2023 16:45	5/28/2023 19:11	146.52	2205.126	903	Loss of Supply	Planned Transmission
MED	23W-302		23W-302	5/28/2023 16:45	6/9/2023 14:09	17124.42	15126.571	53	Loss of Supply	Planned Transmission
MED	23W-301		23W-301	5/28/2023 16:45	6/9/2023 14:09	17124.42	6564.361	23	Loss of Supply	Planned Transmission
MED	1N-405	1N-405H	1N-405	5/28/2023 17:25	5/28/2023 19:43	138.6	2.31	1	Tree Contacts	Falling Trees
MED	56N-401	56N-401	56N-401	5/28/2023 16:07	5/28/2023 16:47	40.74	6.79	10	Tree Contacts	Untrimmed Tree
MED	103W-312	103W-312G	103W-312	5/28/2023 15:55	5/28/2023 17:23	88.68	10.346	7	Tree Contacts	Untrimmed Tree
MED	81S-303	81S-303G	81S-303	5/28/2023 16:12	5/28/2023 17:04	52.32	0.872	1	Defective Equipment	Mechanical Failure
MED	1N-405	1N-405H	1N-405	5/28/2023 16:02	5/29/2023 1:11	549.96	54.996	6	Unknown	Unknown
MED	57C-422	57C-422GAA	57C-422	5/28/2023 17:40	5/28/2023 19:26	106.86	300.989	169	Unknown	Unknown
MED	99V-312	99V-312	99V-312	5/28/2023 15:54	5/28/2023 20:59	305.4	61.08	12	Defective Equipment	Electrical Failure
MED	87W-311	87W-311HA	87W-311	5/28/2023 15:55	5/28/2023 16:54	59.58	44.685	45	Defective Equipment	Mechanical Failure
MED	79V-402	79V-402	79V-402	5/28/2023 15:41	5/28/2023 20:45	304.5	10.15	2	Defective Equipment	Mechanical Failure
MED	88H-402	619N-301	88H-402	5/28/2023 15:23	5/28/2023 17:28	125.52	2.092	1	Tree Contacts	Untrimmed Tree
MED	92H-331	92H-331G	92H-331	5/28/2023 15:22	5/29/2023 2:29	667.68	11.128	1	Tree Contacts	Untrimmed Tree
MED	82V-402	82V-402	82V-402	5/28/2023 13:32	5/28/2023 22:51	559.32	46.61	5	Tree Contacts	Falling Trees
MED	4C-430	4C-430G	4C-430	5/28/2023 15:10	5/28/2023 16:50	100.14	3.338	2	Tree Contacts	Untrimmed Tree
MED	56N-414	500N-301	56N-414	5/28/2023 14:47	5/28/2023 16:02	75.78	1.263	1	Unknown	Unknown
MED	4C-430	580C-312	4C-430	5/28/2023 14:21	5/28/2023 15:40	79.26	3.963	3	Tree Contacts	Untrimmed Tree
MED	58C-405	58C-405H	58C-405	5/28/2023 14:07	5/28/2023 15:25	78.48	1090.872	834	Tree Contacts	Falling Trees
MED	7N-301	7N-301	7N-301	5/28/2023 13:07	5/28/2023 16:53	226.92	7.564	2	Unknown	Unknown
MED	113H-433	113H-433G	113H-433	5/28/2023 13:48	5/28/2023 14:48	60.84	5.07	5	Foreign Interference	Animal/Bird
MED	20V-311	20V-311	20V-311	5/28/2023 12:01	5/28/2023 14:40	159.78	21.304	8	Tree Contacts	Falling Trees
MED	57S-402	57S-402J	57S-402	5/28/2023 13:35	5/28/2023 16:05	150	2.5	1	Unknown	Unknown
MED	16N-301	16N-301	16N-301	5/28/2023 13:32	5/28/2023 18:24	292.92	34.174	7	Tree Contacts	Untrimmed Tree

Event Type	Feeder	Feeder Section	Source	Start	Restore	Duration (Minutes)	Customer Hours of Interruption	Customers Interrupted	CEA Description	Sub-Cause
MED	88H-402	88H-402G	88H-402	5/28/2023 13:20	5/29/2023 16:01	1601.7	2616.11	98	Unknown	Unknown
MED	25W-301	25W-301	25W-301	5/28/2023 12:52	5/28/2023 15:36	164.76	2.746	1	Unknown	Unknown
MED	4C-430	4C-430H	4C-430	5/28/2023 12:33	5/28/2023 14:02	89.28	2.976	2	Unknown	Unknown
MED	20V-311	20V-311	20V-311	5/28/2023 12:01	5/28/2023 13:53	112.74	63.886	34	Tree Contacts	Falling Trees
MED	63V-313	63V-313G	63V-313	5/28/2023 11:58	5/28/2023 15:30	212.28	21.228	6	Tree Contacts	Untrimmed Tree
MED	57S-401	57S-401	57S-401	5/28/2023 11:52	5/28/2023 13:39	107.64	1.794	1	Defective Equipment	Mechanical Failure
MED	102W-312	102W-312	102W-312	5/28/2023 9:24	5/28/2023 14:10	286.26	4.771	1	Defective Equipment	Electrical Failure
MED	88W-312	88W-312	88W-312	5/28/2023 9:05	5/28/2023 12:14	189.42	22.099	7	Scheduled Outage	Maintenance
MED	104S-312	104S-312	104S-312	5/28/2023 9:00	5/28/2023 10:46	106.26	1.771	1	Foreign Interference	Animal/Bird
MED	81S-302	81S-302	81S-302	5/28/2023 8:28	5/28/2023 10:25	117.24	1.954	1	Foreign Interference	Animal/Bird
MED	20V-311	20V-311	20V-311	5/28/2023 4:31	5/28/2023 8:37	246.42	32.856	8	Foreign Interference	Animal/Bird
MED	82S-304	82S-304G	82S-304	5/28/2023 7:55	5/28/2023 9:44	109.74	1.829	1	Foreign Interference	Animal/Bird
MED	2H-424	2H-424	2H-424	5/28/2023 5:16	5/28/2023 8:57	221.16	62.662	17	Foreign Interference	Animal/Bird
MED	11S-412	11S-412	11S-412	5/28/2023 5:56	5/28/2023 8:44	168.36	2.806	1	Foreign Interference	Animal/Bird

Appendix K

Planned Outages by Feeder

Date	Feeder	Start Time (24-hour clock)	Restore Time (24- hour clock)	Duration (Minutes)	Customer Hours of Interruption	Customers Interrupted	CEA Subcause
1/3/2023	3S-303	11:13	12:28	75.96	1.266	1	Capital
1/7/2023	101H-413	10:55	11:37	30281.34	5564.24	28	Reliability
1/9/2023	57S-402	13:04	14:37	93.84	29.716	19	Tree Trimming
1/10/2023	65V-302	11:01	11:11	10.32	6.02	35	Capital
1/11/2023	57C-422	10:31	12:12	100.92	1.682	1	Reliability
1/11/2023	104H-413	23:58	4:33	275.28	82.584	18	Reliability
1/12/2023	1H-427	0:26	4:02	216.36	263.238	73	Reliability
1/14/2023	62N-415	19:56	20:03	7.68	208.896	1632	Switching
1/14/2023	84W-302	16:16	16:21	5.1	75.225	885	Switching
1/15/2023	73W-411	1:22	2:57	95.04	9743.184	6151	Switching
1/17/2023	137H-411	1:47	2:24	36.6	185.44	304	Switching
1/18/2023	82S-304	12:27	14:18	110.76	22.152	12	Capital
1/18/2023	20H-305	23:57	4:59	302.04	5507.196	1094	Reliability
1/19/2023	96H-411	10:56	11:02	6.24	4.368	42	Capital
1/19/2023	7N-301	10:31	14:36	244.44	81.48	20	Capital
1/21/2023	139H-414	10:32	16:29	356.52	65.362	11	Capital
1/21/2023	104H-411	9:33	15:33	359.82	1133.433	189	Reliability
1/22/2023	139H-414	15:04	15:15	10.68	0.178	1	Capital
1/22/2023	108H-411	8:57	16:36	459.18	114.795	15	Reliability
1/24/2023	104H-411	10:12	15:26	314.22	136.162	26	Capital
1/25/2023	55V-313	11:05	12:24	79.8	17.29	13	Capital
1/25/2023	56N-414	12:28	14:42	133.68	8.912	4	Capital
1/25/2023	96H-412	9:46	12:42	176.34	11.756	4	Capital
1/25/2023	104H-411	15:08	15:53	45.36	6.048	8	Capital
1/25/2023	25W-301	10:11	10:58	47.4	24.49	31	Capital
1/25/2023	88W-312	10:10	10:59	49.26	13.136	16	Reliability
1/26/2023	50N-410	23:02	23:06	3.84	171.072	2673	Switching
1/26/2023	113H-432	17:27	17:38	11.04	350.152	1903	Switching
1/26/2023	81S-302	19:44	19:56	11.34	262.899	1391	Switching
1/27/2023	23H-304	16:21	18:46	144.48	183.008	76	Switching
1/27/2023	4C-441	10:50	10:56	5.1	44.54	524	Switching
1/29/2023	48H-304	10:20	15:48	327.84	5.464	1	Capital
1/29/2023	48H-303	11:54	15:59	244.86	32.648	8	Capital
1/30/2023	1C-411	5:35	5:42	6.48	192.456	1782	Capital
1/30/2023	56N-414	17:36	21:48	251.4	4.19	1	Customer Requested
1/31/2023	67C-411	11:26	13:21	114.78	239.125	125	Switching
1/31/2023	104H-411	13:57	18:59	302.4	5.04	1	Capital
2/2/2023	131H-422	11:57	12:08	11.1	39.96	216	Switching
2/2/2023	20W-311	12:59	13:30	31.38	0.523	1	Reliability
2/2/2023	65V-302	11:22	12:46	83.4	1.39	1	Capital
2/3/2023	131H-422	9:40	10:19	39.3	1173.76	1792	Reliability
2/3/2023	4S-331	12:19	12:44	25.14	28.073	67	Switching
2/4/2023	56N-414	11:16	11:25	9	250.65	1671	Switching
2/4/2023	62N-413	9:54	9:55	1.08	43.452	2414	Switching
2/4/2023	22C-403	8:44	8:58	14.82	48.412	196	Switching
2/5/2023	100C-421	15:52	17:05	72.3	133.755	111	Switching
2/5/2023	48H-304	0:38	3:23	164.46	2428.526	886	Switching
2/5/2023	48H-304	0:38	3:24	165.72	2.762	1	Switching

Date	Feeder	Start Time (24-hour clock)	Restore Time (24- hour clock)	Duration (Minutes)	Customer Hours of Interruption	Customers Interrupted	CEA Subcause
2/5/2023	131H-422	22:42	22:54	12.24	365.568	1792	Switching
2/5/2023	100C-421	18:31	23:57	326.22	603.507	111	Switching
2/6/2023	15N-401	16:28	19:11	163.38	57.183	21	Reliability
2/6/2023	16W-301	12:04	16:39	275.22	747.681	163	Capital
2/6/2023	22V-322	11:22	14:48	206.64	3.444	1	Capital
2/6/2023	104H-433	13:38	15:48	130.2	2.17	1	Capital
2/7/2023	4S-333	8:23	11:01	158.04	23.706	9	Reliability
2/7/2023	22V-321	1:48	2:12	23.52	1130.528	2884	Planned Transmission
2/7/2023	102W-312	9:36	11:18	101.76	47.488	28	Reliability
2/7/2023	96H-412	9:01	12:42	220.56	95.576	26	Capital
2/7/2023	113H-441	9:30	13:49	258.72	125.048	29	Tree Trimming
2/8/2023	88W-312	11:20	12:29	68.46	1.141	1	Capital
2/9/2023	92H-331	11:02	15:18	256.08	42.68	10	Reliability
2/9/2023	4C-424	11:00	13:20	140.28	222.11	95	Reliability
2/9/2023	4C-424	10:59	13:20	140.28	212.758	91	Reliability
2/9/2023	73W-411	11:30	12:23	53.88	2.694	3	Capital
2/14/2023	73W-411	8:47	13:02	255.54	153.324	36	Capital
2/14/2023	50V-401	11:48	13:10	82.14	84.878	62	Capital
2/15/2023	36V-303	14:01	15:01	59.82	0.997	1	Reliability
2/15/2023	92W-302	10:19	14:24	245.58	4.093	1	Tree Trimming
2/15/2023	73W-411	8:17	11:31	193.74	116.244	36	Reliability
2/15/2023	87W-311	9:33	13:44	251.1	682.155	163	Reliability
2/16/2023	65V-303	10:31	12:08	97.38	1.623	1	Capital
2/16/2023	77V-303	9:31	11:36	125.16	102.214	49	Reliability
2/16/2023	73W-411	8:18	12:37	258.66	379.368	88	Reliability
2/16/2023	102W-312	10:46	11:44	58.26	0.971	1	Reliability
2/17/2023	58C-405	9:01	10:26	84.96	712.248	503	Reliability
2/20/2023	21W-312	10:01	11:28	87.18	395.216	272	Capital
2/21/2023	6N-301	23:00	23:02	2.28	42.712	1124	Planned Transmission
2/21/2023	12V-303	10:02	11:11	69.12	1.152	1	Reliability
2/21/2023	4C-430	9:30	11:20	109.32	958.372	526	Reliability
2/22/2023	15N-404	18:18	19:05	47.28	6.304	8	Switching
2/22/2023	62N-416	8:52	12:31	218.88	21.888	6	Capital
2/24/2023	131H-422	14:55	15:25	29.88	118.026	237	Switching
2/26/2023	65V-303	10:21	13:14	173.22	2.887	1	Reliability
2/27/2023	73W-411	13:26	15:12	106.08	5.304	3	Tree Trimming
2/27/2023	2H-424	10:09	15:34	324.84	102.866	19	Capital
2/28/2023	73W-411	13:17	15:21	124.08	6.204	3	Reliability
3/1/2023	1N-402	14:41	15:16	35.28	4.704	8	Tree Trimming
3/1/2023	82S-303	11:01	13:36	154.5	30.9	12	Switching
3/2/2023	15N-401	9:50	11:44	114.48	17.172	9	Reliability
3/5/2023	104S-311	0:09	0:35	25.8	986.42	2294	Planned Transmission
3/6/2023	51V-301	10:44	17:05	381.66	19.083	3	Capital
3/6/2023	57W-402	1:31	7:07	336	7061.6	1261	Reliability
3/6/2023	76V-301	6:55	7:07	12	65.8	329	Capital
3/6/2023	14V-303	6:55	7:07	12	2.6	13	Capital
3/6/2023	50W-412	10:33	11:12	38.94	2.596	4	Switching
3/6/2023	91W-411	1:31	2:16	44.82	898.641	1203	Reliability
3/6/2023	3S-403	13:15	13:22	6.84	211.242	1853	Switching
3/6/2023	14V-303	1:31	1:36	4.8	1.04	13	Reliability
3/6/2023	76V-301	1:31	1:36	4.8	26.32	329	Reliability
3/7/2023	55V-314	12:17	7:29	1152.24	192.04	10	Capital
3/8/2023	64V-301	8:11	11:14	183.78	9.189	3	Capital

Date	Feeder	Start Time (24-hour clock)	Restore Time (24- hour clock)	Duration (Minutes)	Customer Hours of Interruption	Customers Interrupted	CEA Subcause
3/8/2023	104H-411	12:22	13:38	76.38	12.73	10	Capital
3/8/2023	104H-411	12:22	13:39	76.92	35.896	28	Capital
3/8/2023	96H-411	10:57	12:49	112.44	11.244	6	Capital
3/9/2023	87W-311	12:34	15:26	172.08	32.45	12	Reliability
3/12/2023	87W-311	8:24	15:36	431.88	71.98	10	Capital
3/13/2023	1N-421	11:32	15:11	219.18	43.836	12	Reliability
3/14/2023	104H-411	9:09	12:11	181.74	33.319	11	Reliability
3/14/2023	1N-421	13:01	15:13	132.78	26.556	12	Switching
3/14/2023	55V-323	10:03	11:25	82.02	198.215	145	Reliability
3/14/2023	103W-311	10:04	12:26	142.2	14.22	6	Capital
3/14/2023	104H-411	9:10	11:45	155.64	44.098	17	Reliability
3/14/2023	56N-414	12:18	12:53	35.46	5.319	9	Switching
3/14/2023	57S-402	9:00	12:56	235.2	31.36	8	Capital
3/15/2023	4C-430	13:10	13:26	15.18	1.012	4	Reliability
3/16/2023	104H-411	11:25	13:04	99.18	33.06	20	Capital
3/16/2023	19W-311	9:53	12:09	135.9	129.105	57	Reliability
3/16/2023	104H-411	9:01	11:26	145.08	36.27	15	Capital
3/16/2023	73W-411	9:41	14:26	284.1	80.495	17	Tree Trimming
3/16/2023	20H-304	10:31	14:52	261.18	108.825	25	Capital
3/17/2023	92H-331	12:47	14:40	112.32	11.232	6	Capital
3/17/2023	141H-401	17:25	18:58	92.94	7.745	5	Switching
3/18/2023	104H-411	9:01	14:53	351.36	843.264	144	Capital
3/19/2023	104H-411	9:04	14:23	318.72	764.928	144	Capital
3/20/2023	64V-301	7:54	15:17	443.76	133.128	18	Capital
3/20/2023	57C-422	9:59	11:49	110.1	493.615	269	Capital
3/21/2023	2H-424	9:09	13:44	275.22	142.197	31	Capital
3/23/2023	104H-411	9:23	15:09	345.84	17.292	3	Capital
3/24/2023	57C-417	10:16	12:06	110.34	1.839	1	Capital
3/24/2023	15N-401	9:07	14:34	327	31.4	15	Tree Trimming
3/24/2023	15N-401	11:42	12:40	58.44	0.974	1	Tree Trimming
3/26/2023	76V-301	23:09	23:17	8.28	45.126	327	Planned Transmission
3/26/2023	14V-303	23:09	23:17	8.28	1.794	13	Planned Transmission
3/26/2023	91W-411	23:55	2:54	179.46	3598.173	1203	Planned Transmission
3/26/2023	57W-402	23:09	6:58	469.62	9885.501	1263	Planned Transmission
3/27/2023	25W-303	10:22	13:31	189.78	3.163	1	Reliability
3/27/2023	104H-411	9:28	15:35	366.9	201.795	33	Capital
3/27/2023	11S-302	11:15	12:41	85.38	8.538	6	Capital
3/27/2023	76V-301	6:47	6:52	4.98	27.141	327	Planned Transmission
3/27/2023	14V-303	6:47	6:52	4.98	1.079	13	Planned Transmission
3/28/2023	14V-303	4:50	5:01	10.56	2.288	13	Planned Transmission
3/28/2023	3S-308	11:28	12:38	70.08	14.016	12	Reliability
3/28/2023	104H-411	9:33	14:43	310.26	708.427	137	Capital
3/28/2023	76V-301	4:50	4:56	6.24	34.008	327	Planned Transmission
3/29/2023	11S-302	9:33	11:03	89.76	4.488	3	Capital
3/29/2023	73W-411	13:52	16:47	174.06	136.347	47	Capital
3/29/2023	11S-302	14:18	15:50	92.1	10.745	7	Capital
3/30/2023	4N-311	11:02	12:26	83.7	408.735	293	Capital
4/1/2023	96H-411	13:29	14:31	61.74	166.698	162	Capital
4/2/2023	1N-421	12:37	15:53	195.78	94.627	29	Capital
4/3/2023	36V-301	18:30	18:57	27.54	2.295	5	Reliability
4/3/2023	2H-424	10:25	15:59	333.36	116.676	21	Capital
4/4/2023	16N-301	10:03	12:00	117.12	1.952	1	Reliability
4/4/2023	83V-303	9:43	10:01	18.3	10.065	33	Capital

Date	Feeder	Start Time (24-hour clock)	Restore Time (24- hour clock)	Duration (Minutes)	Customer Hours of Interruption	Customers Interrupted	CEA Subcause
4/4/2023	103H-431	7:21	17:15	594.36	9.906	1	Capital
4/4/2023	104H-413	9:37	13:44	247.86	53.703	13	Reliability
4/5/2023	36V-303	9:04	13:17	252.48	883.68	210	Capital
4/5/2023	77V-302	9:01	9:31	29.94	267.963	537	Capital
4/5/2023	104H-411	9:19	13:55	275.34	45.89	10	Capital
4/6/2023	25W-303	8:12	14:24	371.64	80.522	13	Tree Trimming
4/6/2023	50N-411	10:28	10:41	13.44	1.792	8	Reliability
4/6/2023	76V-301	14:11	14:55	18763.26	625.442	2	Tree Trimming
4/7/2023	82V-403	9:44	12:39	175.02	224.609	77	Capital
4/11/2023	36W-301	11:32	14:16	164.7	230.58	84	Capital
4/11/2023	36W-301	11:34	14:18	163.98	24.597	9	Capital
4/11/2023	36W-301	11:46	15:35	228.96	19.08	5	Capital
4/11/2023	36W-301	11:36	15:36	239.52	15.968	4	Capital
4/11/2023	14V-303	5:30	5:47	16.98	3.679	13	Planned Transmission
4/11/2023	36W-301	11:43	15:55	251.82	927.537	221	Capital
4/11/2023	76V-301	5:30	5:57	27.66	149.825	325	Planned Transmission
4/11/2023	56N-414	9:48	10:58	70.14	15.197	13	Capital
4/11/2023	83V-303	10:15	11:59	104.4	48.72	28	Reliability
4/12/2023	103H-434	14:27	15:12	44.46	2800.239	3779	Switching
4/12/2023	56N-414	8:02	9:24	82.14	1.369	1	Capital
4/12/2023	89W-302	11:27	14:32	185.04	6.168	2	Reliability
4/12/2023	104H-411	8:58	14:42	344.04	183.488	32	Reliability
4/12/2023	4W-211	6:28	6:45	17.22	1.148	4	Planned Transmission
4/13/2023	48H-304	10:32	17:45	433.02	324.765	45	Reliability
4/14/2023	57C-426	10:36	13:26	169.98	915.059	323	Capital
4/14/2023	113H-434	11:15	13:34	138.6	4.62	2	Capital
4/15/2023	113H-434	11:25	12:09	43.38	7.953	11	Capital
4/15/2023	113H-434	12:12	14:23	131.28	15.316	7	Capital
4/16/2023	63V-312	6:00	6:17	16.26	1266.383	4673	Reliability
4/16/2023	64V-301	6:00	6:17	16.26	275.878	1018	Reliability
4/17/2023	70W-321	19:51	20:14	23.34	6.224	16	Switching
4/17/2023	2H-424	9:23	15:50	387	245.1	38	Capital
4/18/2023	77V-401	13:28	13:44	16.5	11	40	Reliability
4/19/2023	76V-301	13:29	15:09	100.38	1.673	1	Tree Trimming
4/19/2023	103H-434	10:27	14:19	231.96	3.866	1	Reliability
4/19/2023	104H-411	9:16	15:46	390	143	22	Capital
4/19/2023	104H-411	9:17	15:46	389.22	129.74	20	Capital
4/20/2023	4C-441	9:59	10:27	28.38	4.257	9	Capital
4/20/2023	76V-301	16:49	13:29	1240.32	41.344	2	Reliability
4/21/2023	103H-434	10:49	10:55	6.06	380.871	3771	Switching
4/22/2023	104H-411	8:52	14:12	320.04	437.388	82	Capital
4/22/2023	104H-411	8:52	15:30	398.52	6.642	1	Reliability
4/23/2023	88W-312	4:09	9:05	296.16	227.056	46	Capital
4/23/2023	104H-411	9:12	13:05	232.62	449.732	116	Capital
4/23/2023	87H-313	14:01	14:45	44.34	48.774	66	Capital
4/24/2023	78W-302	1:00	3:00	119.64	919.234	461	Planned Transmission
4/24/2023	78W-301	1:00	3:00	119.7	1564.08	784	Planned Transmission
4/24/2023	36V-302	8:38	11:03	145.02	48.34	20	Capital
4/24/2023	7N-302	10:15	12:38	143.04	302.768	127	Capital
4/24/2023	80W-301	2:44	2:55	10.44	125.454	721	Planned Transmission
4/24/2023	76W-201	2:44	2:55	10.44	0.174	1	Planned Transmission
4/25/2023	103H-433	12:51	15:32	161.04	2.684	1	Reliability
4/25/2023	81N-411	14:55	15:43	47.58	3.172	4	Capital

Date	Feeder	Start Time (24-hour clock)	Restore Time (24- hour clock)	Duration (Minutes)	Customer Hours of Interruption	Customers Interrupted	CEA Subcause
4/26/2023	103H-433	10:33	17:01	387.9	12.93	2	Capital
4/26/2023	70V-312	10:59	11:25	26.52	106.08	240	Reliability
4/27/2023	103H-433	11:35	12:28	52.74	1.758	2	Capital
4/27/2023	7N-301	10:00	12:36	156.06	15.606	6	Reliability
4/27/2023	79V-402	9:59	13:53	234.42	148.466	38	Capital
4/27/2023	56N-414	8:55	10:54	118.26	147.825	75	Capital
4/28/2023	83V-301	9:45	10:10	25.44	49.608	117	Reliability
4/28/2023	57C-426	9:19	12:28	188.76	135.278	43	Reliability
4/28/2023	50N-410	10:20	14:34	253.44	92.928	22	Reliability
4/29/2023	57S-401	11:00	13:30	150.42	5.014	2	Reliability
4/30/2023	63V-312	5:59	8:00	120.54	11433.219	5691	Planned Transmission
4/30/2023	4S-321	12:46	14:09	83.28	12.492	9	Reliability
4/30/2023	1V-443	12:34	13:58	83.34	87.507	63	Reliability
5/1/2023	16V-314	15:47	16:00	13.74	322.89	1410	Capital
5/1/2023	16V-315	15:47	16:01	13.74	204.497	893	Capital
5/2/2023	103H-433	11:59	12:09	9.72	0.324	2	Capital
5/2/2023	81N-411	8:13	15:56	462.96	447.528	58	Capital
5/3/2023	104H-421	9:46	14:11	264.72	476.496	108	Reliability
5/3/2023	13V-303	13:43	15:53	130.74	19.611	9	Capital
5/4/2023	88W-312	9:39	10:55	75.96	1.266	1	Reliability
5/5/2023	22V-314	9:45	11:20	94.44	1.574	1	Reliability
5/7/2023	19W-312	10:23	10:39	16.38	1.092	4	Reliability
5/8/2023	23H-304	22:59	23:11	12	1176.2	5881	Reliability
5/8/2023	23H-302	22:59	23:12	12.18	620.165	3055	Reliability
5/8/2023	81N-411	10:14	13:17	182.52	9.126	3	Capital
5/8/2023	15S-301	12:44	13:19	34.86	9.296	16	Reliability
5/8/2023	30N-412	10:06	13:34	208.86	372.467	107	Capital
5/9/2023	99V-314	11:12	12:07	55.44	0.924	1	Reliability
5/9/2023	102W-311	10:26	11:13	46.5	0.775	1	Reliability
5/9/2023	81N-411	10:07	13:17	190.32	38.064	12	Capital
5/9/2023	81N-411	15:16	16:17	61.38	1.023	1	Tree Trimming
5/9/2023	23H-302	22:55	23:22	27.24	1386.97	3055	Capital
5/9/2023	74V-301	8:01	14:26	385.38	147.729	23	Capital
5/9/2023	48W-201	11:00	11:33	33.12	3.312	6	Capital
5/9/2023	127H-411	10:10	14:51	281.28	750.08	160	Capital
5/10/2023	23H-303	1:48	2:03	15	1470.25	5881	Capital
5/10/2023	73W-411	10:14	12:13	118.92	255.678	129	Capital
5/10/2023	81N-411	12:03	15:15	192.12	12.808	4	Capital
5/10/2023	23H-302	1:15	1:21	6.42	326.885	3055	Capital
5/10/2023	81N-411	8:17	9:24	66.18	4.412	4	Capital
5/10/2023	57C-422	7:54	16:25	510.36	68.048	8	Tree Trimming
5/10/2023	50N-415	13:10	16:29	198.96	3.316	1	Reliability
5/10/2023	131H-422	18:42	18:57	15.72	36.156	138	Reliability
5/11/2023	67C-412	10:53	12:28	95.88	11.186	7	Capital
5/11/2023	50V-401	14:40	16:36	116.04	13.538	7	Capital
5/11/2023	99V-314	9:51	12:59	187.98	6.266	2	Capital
5/15/2023	50N-412	12:34	14:02	88.14	7.345	5	Reliability
5/15/2023	50N-412	12:34	14:03	88.86	34.063	23	Reliability
5/15/2023	50N-412	14:00	16:05	125.76	165.584	79	Reliability
5/15/2023	50N-412	14:06	16:05	118.26	25.623	13	Reliability
5/15/2023	50N-412	9:39	11:36	116.82	11.682	6	Reliability
5/15/2023	50N-412	7:44	9:36	111.96	11.196	6	Capital
5/15/2023	50N-412	7:44	9:36	111.66	11.166	6	Capital

Date	Feeder	Start Time (24-hour clock)	Restore Time (24- hour clock)	Duration (Minutes)	Customer Hours of Interruption	Customers Interrupted	CEA Subcause
5/15/2023	50N-412	9:35	11:37	121.92	12.192	6	Capital
5/15/2023	4W-211	3:22	6:43	201.54	13.436	4	Planned Transmission
5/15/2023	16N-302	13:49	14:47	58.38	107.03	110	Reliability
5/16/2023	50N-412	11:57	14:00	123.24	2.054	1	Reliability
5/16/2023	87H-311	10:13	18:16	483.6	32.24	4	Reliability
5/16/2023	4C-432	9:53	14:26	273.42	314.433	69	Capital
5/16/2023	67C-411	13:33	15:35	121.92	18.288	9	Capital
5/16/2023	87H-311	10:07	14:46	279.18	37.224	8	Reliability
5/16/2023	50N-412	9:36	11:53	137.46	11.455	5	Capital
5/16/2023	50N-412	9:37	11:53	135.9	13.59	6	Capital
5/16/2023	67C-411	9:23	10:54	90.18	3.006	2	Capital
5/16/2023	50N-412	11:55	13:56	120.36	14.042	7	Reliability
5/16/2023	50N-412	13:58	17:58	240	32	8	Capital
5/16/2023	50N-412	13:58	17:58	240.48	68.136	17	Capital
5/17/2023	99V-314	15:22	16:07	44.94	0.749	1	Capital
5/17/2023	50N-415	13:54	15:09	75.3	2.51	2	Reliability
5/17/2023	50N-412	13:16	14:12	56.52	9.42	10	Capital
5/17/2023	13V-303	8:57	11:17	139.8	44.27	19	Capital
5/17/2023	50N-412	8:52	12:18	206.52	89.492	26	Reliability
5/17/2023	30N-412	9:56	11:28	92.04	165.672	108	Capital
5/18/2023	50N-412	13:07	14:08	60.3	13.065	13	Capital
5/18/2023	99V-314	8:25	9:11	46.14	3.076	4	Capital
5/18/2023	48H-301	7:38	18:22	643.8	1019.35	95	Capital
5/18/2023	36V-303	14:24	14:40	16.38	0.546	2	Reliability
5/19/2023	59C-402	14:10	17:45	214.44	75.054	21	Reliability
5/20/2023	99H-312	8:19	13:42	1762.32	58.744	2	Capital
5/22/2023	129H-412	9:07	16:33	446.34	22.317	3	Capital
5/23/2023	104H-413	9:19	17:03	464.22	386.85	50	Reliability
5/23/2023	50N-412	10:02	11:16	73.56	15.938	13	Reliability
5/23/2023	99V-314	9:00	10:18	77.46	165.248	128	Reliability
5/23/2023	57S-402	12:05	17:39	334.08	5.568	1	Reliability
5/23/2023	62N-413	11:19	12:57	97.86	8.155	5	Reliability
5/24/2023	65V-302	12:57	13:07	9.96	5.976	36	Capital
5/24/2023	81W-Dist	10:20	13:16	176.04	23.472	8	Reliability
5/24/2023	57C-422	9:33	11:40	126.78	21.13	10	Reliability
5/25/2023	20N-204	9:16	14:03	286.86	66.934	14	Reliability
5/25/2023	16W-301	10:10	17:06	416.4	20.82	3	Reliability
5/25/2023	48W-204	13:05	15:09	123.24	98.592	48	Reliability
5/25/2023	55V-313	9:57	11:22	84.42	4.221	3	Reliability
5/25/2023	48W-204	8:03	8:30	27.72	18.48	40	Reliability
5/25/2023	55V-313	12:31	13:43	72.24	2.408	2	Reliability
5/26/2023	77V-401	9:04	12:28	204.78	116.042	34	Reliability
5/26/2023	73W-411	12:27	13:39	72.18	6.015	5	Reliability
5/27/2023	57S-401	13:24	15:00	95.28	7.94	5	Reliability
5/27/2023	77V-401	10:25	16:29	363.78	6.063	1	Reliability
5/27/2023	50N-412	16:08	16:37	29.1	10.185	21	Reliability
5/29/2023	48W-201	8:56	10:03	66.48	6.648	6	Capital
5/29/2023	22N-402	10:49	13:04	135.54	92.619	41	Reliability
5/29/2023	104S-311	9:59	14:06	246.96	20.58	5	Reliability
5/29/2023	92H-334	10:16	10:24	8.28	657.018	4761	Planned Transmission
5/29/2023	87W-311	10:16	10:24	8.28	484.794	3513	Planned Transmission
5/29/2023	84W-302	10:16	10:24	8.28	303.462	2199	Planned Transmission
5/29/2023	103W-311	10:16	10:24	8.28	429.18	3110	Planned Transmission

Date	Feeder	Start Time (24-hour clock)	Restore Time (24- hour clock)	Duration (Minutes)	Customer Hours of Interruption	Customers Interrupted	CEA Subcause
5/29/2023	36V-303	11:09	12:32	83.04	34.6	25	Capital
5/29/2023	73W-411	13:30	15:51	140.94	30.537	13	Reliability
5/29/2023	58C-403	12:26	15:52	205.26	99.209	29	Reliability
5/30/2023	48W-201	7:37	9:18	101.1	53.92	32	Capital
5/30/2023	50N-412	9:01	17:25	503.52	50.352	6	Capital
5/30/2023	50W-411	8:31	11:30	178.98	2.983	1	Reliability
5/30/2023	36V-303	11:12	12:31	79.14	2.638	2	Capital
5/31/2023	11S-301	10:58	11:31	33.12	2.76	5	Reliability
5/31/2023	22C-404	10:53	11:36	43.26	3.605	5	Capital
5/31/2023	22N-402	11:57	18:36	399.3	99.825	15	Tree Trimming
5/31/2023	93V-313	14:43	17:44	180.6	6.02	2	Reliability
6/1/2023	88H-401	10:57	13:28	151.38	7.569	3	Capital
6/1/2023	57C-422	10:21	11:49	88.02	1.467	1	Capital
6/2/2023	81N-411	10:15	11:21	66.18	2.206	2	Reliability
6/2/2023	57C-426	10:39	11:40	60.78	530.812	524	Reliability
6/3/2023	85S-401	3:39	3:48	9.24	341.88	2220	Switching
6/4/2023	3S-307	20:42	21:56	73.92	2361.744	1917	Switching
6/4/2023	137H-411	13:55	15:59	123.96	485.51	235	Reliability
6/5/2023	24C-443	13:38	17:22	223.14	7.438	2	Capital
6/5/2023	56N-414	15:10	15:28	17.28	8.064	28	Reliability
6/5/2023	58C-405	9:00	13:30	269.52	107.808	24	Reliability
6/5/2023	101H-411	13:10	15:36	145.86	41.327	17	Reliability
6/5/2023	24C-443	10:04	12:39	155.94	2.599	1	Capital
6/5/2023	16W-301	8:59	10:40	101.1	67.4	40	Capital
6/5/2023	50N-412	8:52	10:46	114.3	43.815	23	Capital
6/6/2023	73W-411	12:47	13:43	55.86	10.241	11	Reliability
6/7/2023	93V-311	13:27	16:18	171.24	8.562	3	Reliability
6/7/2023	4N-311	12:01	13:20	78.9	13.15	10	Capital
6/7/2023	25W-303	5:37	6:23	46.26	2225.106	2886	Planned Transmission
6/8/2023	83V-301	14:02	17:01	179.04	8.952	3	Capital
6/8/2023	93V-311	8:17	13:19	301.8	100.6	20	Capital
6/8/2023	16V-314	8:15	11:27	192.12	19.212	6	Capital
6/8/2023	82V-402	12:49	15:38	169.5	5.65	2	Reliability
6/8/2023	82V-402	10:38	12:47	128.16	10.68	5	Reliability
6/8/2023	113H-432	9:59	10:58	58.32	19.44	20	Reliability
6/9/2023	23H-304	10:43	13:10	147	279.3	114	Reliability
6/9/2023	96H-411	17:13	17:43	29.82	0.994	2	Reliability
6/9/2023	81N-412	10:19	10:52	33.24	1.108	2	Reliability
6/9/2023	11S-301	14:29	14:56	27.12	1.808	4	Reliability
6/10/2023	82V-403	9:41	10:14	33.06	15.979	29	Reliability
6/11/2023	92H-331	6:00	6:06	6	473.3	4733	Planned Transmission
6/11/2023	84W-301	6:00	6:06	6	220.1	2201	Planned Transmission
6/11/2023	87W-312	6:00	6:06	6	351.5	3515	Planned Transmission
6/11/2023	103W-312	6:00	6:06	6	311.3	3113	Planned Transmission
6/12/2023	93V-311	9:04	14:25	321.12	107.04	20	Capital
6/12/2023	23H-302	8:16	19:40	684.06	285.025	25	Capital
6/12/2023	65V-301	15:00	16:47	106.26	15.939	9	Capital
6/13/2023	93V-311	9:23	11:08	104.16	5.208	3	Reliability
6/13/2023	65V-302	15:05	17:12	127.14	6.357	3	Capital
6/13/2023	22C-404	9:42	13:58	256.44	25.644	6	Reliability
6/14/2023	82S-303	13:16	15:04	108.78	30.821	17	Reliability
6/14/2023	104H-421	8:53	16:06	433.56	780.408	108	Reliability
6/14/2023	50N-412	8:45	10:10	85.02	32.591	23	Reliability

Date	Feeder	Start Time (24-hour clock)	Restore Time (24- hour clock)	Duration (Minutes)	Customer Hours of Interruption	Customers Interrupted	CEA Subcause
6/14/2023	22C-404	9:55	14:12	256.8	12.84	3	Reliability
6/14/2023	36V-301	10:14	11:36	81.66	146.988	108	Reliability
6/14/2023	20H-302	9:22	9:39	17.1	2.85	10	Capital
6/14/2023	20H-302	14:32	14:51	18.78	3.13	10	Reliability
6/14/2023	104H-421	16:35	22:59	384.6	692.28	108	Reliability
6/15/2023	65V-302	12:10	13:27	77.46	2.582	2	Capital
6/15/2023	50N-412	8:35	16:29	473.58	118.395	15	Reliability
6/17/2023	22N-403	14:41	15:46	65.16	5.43	5	Reliability
6/19/2023	73W-411	8:37	11:04	146.58	2.443	1	Reliability
6/19/2023	93V-313	13:12	14:05	52.5	0.875	1	Reliability
6/19/2023	50N-412	8:45	15:16	391.14	515.001	79	Reliability
6/19/2023	83V-301	12:36	13:37	60.66	4.044	4	Reliability
6/19/2023	24C-443	8:44	12:39	234.78	74.347	19	Reliability
6/20/2023	83V-303	13:32	15:12	99.78	1.663	1	Capital
6/20/2023	62H-302	10:28	12:20	111.9	1.865	1	Capital
6/20/2023	59C-403	11:59	14:45	166.62	19.439	7	Capital
6/20/2023	59C-403	11:54	14:46	172.02	25.803	9	Capital
6/20/2023	83V-301	16:13	17:50	97.08	3.236	2	Reliability
6/20/2023	2H-422	9:48	12:57	188.88	44.072	14	Capital
6/21/2023	76V-301	21:31	22:01	29.28	160.552	329	Planned Transmission
6/21/2023	14V-303	21:31	22:01	29.28	6.344	13	Planned Transmission
6/21/2023	104H-421	9:48	12:02	134.1	2.235	1	Reliability
6/21/2023	83V-303	10:05	12:06	120.6	4.02	2	Reliability
6/21/2023	50N-412	12:35	13:14	38.64	3.22	5	Reliability
6/21/2023	50N-412	12:36	13:14	38.1	4.445	7	Reliability
6/21/2023	2H-421	10:48	22:42	714.36	178.59	15	Capital
6/21/2023	93V-311	9:04	11:50	166.32	482.328	174	Reliability
6/22/2023	50N-412	9:05	14:01	295.98	399.573	81	Capital
6/22/2023	20H-302	9:23	12:33	190.08	31.68	10	Reliability
6/22/2023	83V-301	8:50	11:34	163.74	163.74	60	Reliability
6/22/2023	40H-305	8:47	14:39	352.38	41.111	7	Reliability
6/22/2023	81S-302	13:54	14:50	55.38	4.615	5	Reliability
6/23/2023	4C-432	10:36	12:18	102	22.1	13	Reliability
6/24/2023	4S-332	8:29	10:08	99.42	3.314	2	Capital
6/24/2023	15S-303	14:33	15:11	38.04	8.876	14	Reliability
6/24/2023	4S-332	10:10	17:48	458.28	22.914	3	Reliability
6/24/2023	4S-332	18:29	19:50	80.16	4.008	3	Reliability
6/25/2023	15S-301	9:46	18:20	513.84	8.564	1	Reliability
6/26/2023	113H-434	9:26	10:00	33.42	3.342	6	Reliability
6/26/2023	16W-301	13:50	14:06	16.2	5.4	20	Reliability
6/26/2023	91W-411	11:36	12:14	38.1	29.21	46	Reliability
6/26/2023	20V-311	10:17	12:20	122.52	16.336	8	Reliability
6/26/2023	24C-443	9:00	13:44	284.52	18.968	4	Reliability
6/26/2023	57C-422	10:08	12:47	159.72	489.808	184	Reliability
6/26/2023	95H-251	11:43	13:48	124.44	12.444	6	Reliability
6/26/2023	76V-301	13:30	13:49	18.24	100.016	329	Planned Transmission
6/26/2023	14V-303	13:30	13:49	18.24	3.952	13	Planned Transmission
6/27/2023	77V-302	9:01	12:06	184.8	227.92	74	Reliability
6/27/2023	24C-443	8:47	12:14	207.54	17.295	5	Capital
6/27/2023	24C-443	8:43	12:15	211.56	7.052	2	Capital
6/27/2023	24C-443	8:45	12:15	209.76	55.936	16	Capital
6/27/2023	57C-422	13:58	16:15	136.56	9.104	4	Capital
6/27/2023	22C-404	10:03	11:52	108.78	10.878	6	Reliability

Date	Feeder	Start Time (24-hour clock)	Restore Time (24- hour clock)	Duration (Minutes)	Customer Hours of Interruption	Customers Interrupted	CEA Subcause
6/28/2023	82S-302	10:04	15:00	296.28	14.814	3	Reliability
6/28/2023	40H-305	18:47	19:03	16.14	9.415	35	Reliability
6/28/2023	13V-303	9:45	13:04	198.84	36.454	11	Capital
6/28/2023	24C-443	9:48	15:35	346.8	11.56	2	Capital
6/28/2023	7N-301	10:15	15:59	343.74	40.103	7	Capital
6/29/2023	104H-433	9:28	12:12	163.44	76.272	28	Capital
6/29/2023	104H-433	9:34	12:13	159.6	23.94	9	Capital
6/29/2023	48H-301	10:57	11:17	20.52	0.342	1	Reliability
6/29/2023	13V-303	8:56	11:26	149.64	27.434	11	Capital
7/4/2023	73W-411	9:39	11:05	86.1	1.435	1	Capital
7/4/2023	103W-311	11:02	13:12	129.72	41.078	19	Switching
7/4/2023	73W-411	11:09	14:14	185.46	3.091	1	Reliability
7/4/2023	22C-403	6:18	7:26	68.34	932.841	819	Switching
7/4/2023	13V-303	8:56	12:57	241.2	44.22	11	Reliability
7/5/2023	73W-411	9:21	12:12	170.28	8.514	3	Reliability
7/5/2023	22C-404	15:03	15:22	19.86	3.31	10	Reliability
7/6/2023	73W-411	13:17	14:18	60.78	3.039	3	Reliability
7/7/2023	4N-312	12:09	12:18	9.42	7.065	45	Reliability
7/7/2023	37W-201	6:00	6:28	27.9	99.045	213	Planned Transmission
7/7/2023	37W-203	6:01	6:28	27.78	7.408	16	Planned Transmission
7/7/2023	37W-202	6:01	6:28	27.84	111.36	240	Planned Transmission
7/10/2023	36V-303	18:22	21:05	162.72	2.712	1	Reliability
7/10/2023	95H-251	13:25	15:24	119.4	165.17	83	Planned Transmission
7/10/2023	126H-311	12:51	15:30	158.7	13.225	5	Capital
7/10/2023	24C-443	13:12	16:37	205.62	3.427	1	Capital
7/10/2023	24C-443	12:18	16:37	258.66	25.866	6	Capital
7/10/2023	73W-411	11:34	14:51	197.1	9.855	3	Reliability
7/10/2023	99V-314	10:09	10:59	50.64	44.732	53	Reliability
7/11/2023	57S-402	5:09	5:20	10.92	754.026	4143	Planned Transmission
7/12/2023	83V-301	12:17	13:07	49.92	19.136	23	Reliability
7/12/2023	83V-301	13:08	14:46	97.86	6.524	4	Capital
7/12/2023	85S-401	22:24	23:49	85.02	1360.32	960	Reliability
7/13/2023	67C-411	9:54	15:18	323.82	10.794	2	Capital
7/13/2023	40H-305	10:06	13:19	192.84	41.782	13	Capital
7/14/2023	96H-412	13:07	14:36	89.22	25.279	17	Reliability
7/15/2023	22V-322	8:58	11:38	159.78	202.388	76	Capital
7/17/2023	37N-413	10:20	13:09	169.86	8.493	3	Capital
7/17/2023	37N-413	10:21	13:10	168.72	2.812	1	Capital
7/17/2023	111S-314	10:09	11:16	66.6	85.47	77	Capital
7/17/2023	104H-421	9:39	10:25	45.24	5.278	7	Capital
7/17/2023	57S-401	10:27	11:41	74.7	7.47	6	Reliability
7/18/2023	82V-402	10:32	11:02	29.88	1.494	3	Reliability
7/18/2023	12V-303	10:26	11:10	44.34	11.824	16	Reliability
7/18/2023	57W-402	12:07	13:25	78.84	3.942	3	Capital
7/20/2023	113H-434	9:35	9:41	6.78	1.356	12	Capital
7/20/2023	16V-315	8:50	9:44	54.18	0.903	1	Capital
7/20/2023	81S-302	13:17	13:56	38.64	4.508	7	Reliability
7/21/2023	55V-322	11:01	12:35	93.36	14.004	9	Reliability
7/21/2023	63V-313	9:30	9:43	12.66	1.688	8	Reliability
7/22/2023	137H-413	17:44	17:47	2.28	173.584	4568	Switching
7/22/2023	1V-443	16:18	16:50	32.34	952.413	1767	Switching
7/23/2023	70W-204	13:12	14:11	59.76	8.964	9	Capital
7/23/2023	82V-422	11:15	11:17	1.68	75.32	2690	Switching

Date	Feeder	Start Time (24-hour clock)	Restore Time (24- hour clock)	Duration (Minutes)	Customer Hours of Interruption	Customers Interrupted	CEA Subcause
7/23/2023	82V-402	10:25	10:27	2.16	97.704	2714	Switching
7/23/2023	101H-411	14:29	19:45	315.96	36.862	7	Capital
7/24/2023	141H-401	22:34	23:33	58.62	1.954	2	Reliability
7/24/2023	16V-315	9:47	10:34	47.22	32.267	41	Capital
7/24/2023	16V-315	9:34	9:46	12.06	12.06	60	Switching
7/24/2023	81S-306	10:20	10:59	39.72	7.944	12	Reliability
7/25/2023	1C-411	9:24	11:15	110.7	55.35	30	Capital
7/25/2023	81N-412	12:34	14:48	134.16	8.944	4	Capital
7/26/2023	4C-441	12:29	14:02	92.64	13.896	9	Reliability
7/26/2023	4C-441	23:45	0:41	55.62	896.409	967	Capital
7/27/2023	57S-401	12:21	13:07	45.96	3.83	5	Capital
7/27/2023	4C-441	2:43	3:09	25.26	407.107	967	Capital
7/27/2023	103H-432	9:26	10:10	43.86	57.749	79	Reliability
7/27/2023	48W-201	12:43	13:44	60.6	14.14	14	Reliability
7/28/2023	18V-413	8:20	11:39	198.54	19.854	6	Reliability
7/28/2023	2H-424	9:43	10:54	71.52	138.272	116	Reliability
7/30/2023	20N-204	0:00	5:54	353.82	6516.185	1105	Planned Transmission
7/30/2023	17N-201	0:00	5:54	353.82	5560.871	943	Planned Transmission
7/31/2023	126H-311	14:31	14:59	27.84	0.928	2	Reliability
8/1/2023	16V-314	9:00	12:06	186.36	4562.714	1469	Capital
8/1/2023	4C-430	10:08	12:06	117.78	100.113	51	Capital
8/1/2023	70V-312	12:39	14:18	98.82	3.294	2	Capital
8/1/2023	50V-402	10:27	16:20	353.7	235.8	40	Reliability
8/1/2023	102W-312	13:23	15:34	130.56	6.528	3	Capital
8/1/2023	30N-412	9:36	13:41	245.46	445.919	109	Reliability
8/1/2023	16W-301	9:15	10:45	89.76	2.992	2	Reliability
8/1/2023	48W-204	8:54	14:54	359.94	119.98	20	Capital
8/2/2023	70V-312	9:23	11:03	100.44	20.088	12	Capital
8/2/2023	81N-412	9:26	10:30	63.12	1.052	1	Capital
8/2/2023	2C-402	10:18	11:42	83.28	6.94	5	Capital
8/2/2023	102W-312	8:51	10:51	119.64	5.982	3	Capital
8/3/2023	24C-443	8:49	11:25	156.36	46.908	18	Capital
8/3/2023	50W-412	10:20	15:32	312.54	15.627	3	Reliability
8/3/2023	22C-404	8:42	10:38	115.8	7.72	4	Reliability
8/5/2023	15N-401	12:09	13:44	95.16	20.618	13	Reliability
8/8/2023	99H-312	9:48	13:20	211.86	123.585	35	Reliability
8/8/2023	36V-301	9:44	11:33	109.08	238.158	131	Reliability
8/8/2023	99H-312	9:07	11:34	146.94	146.94	60	Reliability
8/8/2023	22C-404	14:00	15:44	104.04	1.734	1	Reliability
8/9/2023	70W-321	12:57	13:01	4.26	573.964	8084	Planned Transmission
8/10/2023	15N-404	13:23	14:11	47.34	4.734	6	Reliability
8/10/2023	36V-303	9:59	11:22	83.28	72.176	52	Reliability
8/10/2023	16W-301	8:53	13:42	288.96	19.264	4	Reliability
8/10/2023	16N-302	9:41	11:44	122.16	264.68	130	Tree Trimming
8/10/2023	56N-401	8:58	14:44	346.14	34.614	6	Tree Trimming
8/10/2023	15N-404	9:20	11:52	151.32	37.83	15	Reliability
8/11/2023	81S-302	10:01	11:09	67.68	6.768	6	Reliability
8/12/2023	59C-403	6:01	7:14	73.08	3942.666	3237	Planned Transmission
8/13/2023	15N-404	6:16	9:01	165.3	11276.215	4093	Capital
8/13/2023	84W-302	0:00	8:15	495.18	7361.676	892	Planned Transmission
8/13/2023	84W-301	0:00	8:16	495.24	10878.772	1318	Planned Transmission
8/14/2023	37N-411	10:38	12:18	100.26	16.71	10	Reliability
8/15/2023	70W-313	16:36	17:02	26.4	0.44	1	Reliability

Date	Feeder	Start Time (24-hour clock)	Restore Time (24- hour clock)	Duration (Minutes)	Customer Hours of Interruption	Customers Interrupted	CEA Subcause
8/15/2023	37N-412	11:23	12:24	61.2	8.16	8	Reliability
8/16/2023	15N-403	12:32	14:25	112.56	13.132	7	Reliability
8/16/2023	65V-302	8:42	10:34	112.08	257.784	138	Capital
8/16/2023	24C-442	8:44	11:48	183.78	6.126	2	Capital
8/17/2023	L-4049	0:00	0:03	3	24.45	489	Planned Transmission
8/17/2023	37N-411	10:52	12:33	100.26	1.671	1	Capital
8/21/2023	126H-311	11:56	13:26	90.48	7.54	5	Capital
8/22/2023	67C-412	9:10	12:02	172.14	14.345	5	Reliability
8/22/2023	37N-411	10:22	10:43	20.46	5.456	16	Reliability
8/23/2023	67C-412	8:11	11:16	184.98	12.332	4	Reliability
8/23/2023	59C-403	10:32	13:32	180.66	21.077	7	Reliability
8/23/2023	2C-401	13:43	16:38	174.42	5.814	2	Reliability
8/23/2023	87H-313	12:33	13:41	67.98	6.798	6	Reliability
8/23/2023	77V-302	9:22	10:49	86.28	217.138	151	Reliability
8/24/2023	126H-312	13:15	15:07	111.84	48.464	26	Reliability
8/24/2023	1N-403	11:42	12:24	42.84	14.994	21	Capital
8/24/2023	127H-411	11:00	13:30	149.64	9.976	4	Reliability
8/24/2023	1N-403	11:42	15:38	236.4	90.62	23	Capital
8/24/2023	2C-402	9:14	10:49	94.2	3.14	2	Reliability
8/24/2023	87H-313	12:11	12:53	41.88	0.698	1	Reliability
8/24/2023	84W-302	13:19	14:53	94.86	1.581	1	Capital
8/25/2023	131H-422	10:42	12:23	100.8	8.4	5	Reliability
8/25/2023	11S-304	9:20	11:42	142.68	2.378	1	Reliability
8/28/2023	4S-322	13:16	14:12	56.16	0.936	1	Capital
8/28/2023	1H-424	23:08	3:48	279.84	51.304	11	Reliability
8/28/2023	2C-402	13:48	14:49	60.36	4.024	4	Capital
8/28/2023	1H-424	21:03	4:58	475.08	55.426	7	Reliability
8/29/2023	84W-301	11:10	12:14	63.66	5.305	5	Reliability
8/29/2023	19C-204	8:56	11:16	140.4	44.46	19	Capital
8/29/2023	67C-412	11:23	11:54	30.3	7.575	15	Reliability
8/29/2023	2C-402	14:46	15:54	68.28	1.138	1	Capital
8/29/2023	2C-402	11:54	12:59	65.04	1.084	1	Capital
8/31/2023	81N-412	11:49	12:23	33.9	1.13	2	Capital
9/1/2023	79V-401	10:29	11:22	53.04	7.072	8	Reliability
9/1/2023	59C-403	12:05	12:59	54.06	13.515	15	Reliability
9/4/2023	126H-312	10:00	10:41	40.86	3.405	5	Capital
9/5/2023	2H-411	9:47	11:20	93.48	300.694	193	Reliability
9/5/2023	19C-204	9:08	14:21	312.6	359.49	69	Capital
9/5/2023	62H-302	9:24	9:26	2.04	113.594	3341	Switching
9/5/2023	103H-432	15:32	15:37	4.98	5.229	63	Reliability
9/5/2023	58C-403	8:00	14:40	399.6	46.62	7	Capital
9/5/2023	16W-301	8:35	10:49	134.46	179.28	80	Capital
9/6/2023	16W-301	8:27	12:01	213.24	28.432	8	Capital
9/6/2023	67C-412	12:02	14:05	122.34	2.039	1	Reliability
9/6/2023	113H-434	8:55	11:26	150.72	173.328	69	Reliability
9/6/2023	19C-204	13:18	14:59	101.7	5.085	3	Capital
9/7/2023	99V-314	10:04	11:06	61.32	130.816	128	Reliability
9/7/2023	46W-303	13:19	17:33	253.98	4.233	1	Tree Trimming
9/7/2023	67C-412	9:31	14:50	319.14	10.638	2	Capital
9/7/2023	67C-412	9:30	14:51	321.24	5.354	1	Reliability
9/10/2023	19C-203	8:08	13:41	332.28	681.174	123	Capital
9/10/2023	6N-301	0:00	7:46	466.02	8675.739	1117	Planned Transmission
9/10/2023	104H-441	19:19	2:58	458.88	871.872	114	Reliability

Date	Feeder	Start Time (24-hour clock)	Restore Time (24- hour clock)	Duration (Minutes)	Customer Hours of Interruption	Customers Interrupted	CEA Subcause
9/11/2023	19C-203	14:35	15:08	32.58	5.973	11	Capital
9/11/2023	4S-322	8:23	9:25	62.76	20.92	20	Reliability
9/11/2023	103H-432	14:37	14:44	7.38	7.995	65	Reliability
9/11/2023	12V-303	8:00	11:49	229.26	76.42	20	Reliability
9/12/2023	19C-204	8:43	14:01	317.46	365.079	69	Capital
9/12/2023	57S-402	11:49	13:05	75.48	7.548	6	Reliability
9/12/2023	67C-412	11:59	12:25	25.56	6.39	15	Reliability
9/12/2023	67C-412	13:35	14:49	73.98	3.699	3	Reliability
9/12/2023	12V-303	10:27	12:51	143.64	7.182	3	Capital
9/13/2023	24C-442	8:45	11:04	139.5	9.3	4	Reliability
9/13/2023	58C-403	11:11	11:22	11.1	2.96	16	Reliability
9/13/2023	12V-303	9:56	11:29	93.06	6.204	4	Capital
9/13/2023	1W-411	14:25	14:35	10.02	1.169	7	Planned Transmission
9/13/2023	37N-412	0:00	0:48	48.54	2754.645	3405	Planned Transmission
9/13/2023	57C-426	10:07	11:50	103.02	166.549	97	Reliability
9/13/2023	1W-411	7:51	7:55	4.74	0.553	7	Reliability
9/13/2023	16W-301	12:01	15:57	236.34	23.634	6	Reliability
9/14/2023	24C-443	12:12	13:03	51.48	181.038	211	Capital
9/14/2023	24C-443	9:55	12:12	136.56	184.356	81	Capital
9/14/2023	4S-332	8:29	9:15	46.2	7.7	10	Capital
9/14/2023	23W-302	19:57	21:27	89.88	713.048	476	Switching
9/14/2023	24C-443	8:53	9:55	61.8	217.33	211	Capital
9/15/2023	96H-411	19:30	0:54	324	14607	2705	Planned Transmission
9/15/2023	88H-402	19:30	0:54	324	17712	3280	Planned Transmission
9/16/2023	16W-301	13:36	16:04	147.84	2.464	1	Switching
9/16/2023	16W-301	13:50	16:04	133.86	2.231	1	Switching
9/18/2023	63V-311	21:15	21:18	3.12	120.12	2310	Switching
9/18/2023	88H-401	16:25	16:38	12.54	232.826	1114	Switching
9/18/2023	63V-313	8:43	11:57	194.04	12.936	4	Reliability
9/18/2023	50W-412	15:49	15:59	10.62	7.257	41	Switching
9/20/2023	91W-411	21:00	21:02	1.98	40.293	1221	Planned Transmission
9/20/2023	37N-411	12:23	16:29	246.72	40.24	10	Reliability
9/20/2023	73W-411	7:05	18:38	692.34	726.957	63	Reliability
9/21/2023	82S-304	16:56	20:10	194.46	3.241	1	Reliability
9/21/2023	101H-411	10:17	13:25	188.82	132.174	42	Tree Trimming
9/21/2023	37N-411	10:27	16:47	380.64	63.44	10	Reliability
9/21/2023	23H-301	13:31	13:49	18.24	3.344	11	Capital
9/22/2023	84W-301	17:00	23:48	408.18	8973.157	1319	Planned Transmission
9/22/2023	84W-302	17:00	23:48	408.36	6070.952	892	Planned Transmission
9/24/2023	1H-403	8:06	12:29	262.92	13.146	3	Capital
9/26/2023	4S-332	8:19	9:00	40.86	10.215	15	Capital
9/26/2023	40H-303	9:27	14:02	274.32	114.3	25	Reliability
9/26/2023	37N-411	0:00	1:16	76.08	4317.54	3405	Planned Transmission
9/26/2023	4S-332	9:50	10:22	31.74	8.993	17	Capital
9/26/2023	11S-411	11:05	13:28	142.86	47.62	20	Reliability
9/26/2023	81S-302	11:03	11:33	30	8.5	17	Reliability
9/26/2023	23H-304	10:42	11:48	66.42	1.107	1	Reliability
9/26/2023	59C-402	14:00	16:56	175.5	14.625	5	Reliability
9/26/2023	59C-402	8:50	13:59	308.64	30.864	6	Reliability
9/27/2023	4N-312	10:01	10:15	14.16	0.236	1	Reliability
9/27/2023	103W-311	10:37	11:47	69.84	4.656	4	Capital
9/28/2023	22C-402	8:58	10:40	101.82	76.365	45	Capital
9/28/2023	84W-301	9:56	13:56	240.36	4.006	1	Capital

Date	Feeder	Start Time (24-hour clock)	Restore Time (24- hour clock)	Duration (Minutes)	Customer Hours of Interruption	Customers Interrupted	CEA Subcause
9/28/2023	84W-301	9:57	13:56	238.8	15.92	4	Capital
9/29/2023	20H-305	9:09	15:31	382.44	95.61	15	Capital
10/2/2023	131H-422	9:55	11:21	85.8	35.75	25	Reliability
10/2/2023	131H-422	12:10	15:24	194.16	25.888	8	Reliability
10/2/2023	59C-402	9:05	15:45	400.32	226.848	34	Capital
10/3/2023	65V-303	11:09	13:34	144.66	43.398	18	Reliability
10/3/2023	59C-402	7:55	14:40	405.72	209.622	31	Tree Trimming
10/3/2023	70W-313	8:58	13:45	286.62	296.174	62	Reliability
10/3/2023	70W-313	15:07	15:54	46.44	1.548	2	Capital
10/3/2023	14V-303	9:56	17:54	477.78	95.556	12	Planned Transmission
10/4/2023	2C-402	14:38	16:23	104.76	3.492	2	Reliability
10/4/2023	59C-402	10:20	17:43	442.68	36.89	5	Reliability
10/4/2023	50W-411	9:39	17:55	495.66	33.044	4	Reliability
10/5/2023	2C-402	8:53	13:02	249.54	8.318	2	Reliability
10/5/2023	87H-313	9:45	10:03	17.34	11.849	41	Reliability
10/5/2023	4S-332	7:48	9:13	85.38	8.538	6	Capital
10/5/2023	81N-412	11:12	11:20	7.8	1.17	9	Reliability
10/5/2023	22C-402	13:03	16:22	198.72	3.312	1	Reliability
10/5/2023	87H-313	10:02	12:24	141.9	9.46	4	Capital
10/5/2023	22V-321	9:55	12:45	170.16	31.196	11	Reliability
10/6/2023	16W-301	13:33	15:11	98.4	8.2	5	Capital
10/8/2023	57S-402	16:19	20:14	235.26	7979.235	2035	Switching
10/10/2023	16W-301	8:14	12:12	238.02	59.505	15	Capital
10/10/2023	16W-301	15:31	17:20	109.8	9.15	5	Capital
10/10/2023	16W-301	13:12	16:21	188.7	9.435	3	Capital
10/10/2023	113H-433	10:19	13:32	193.14	32.19	10	Capital
10/10/2023	62N-414	12:11	16:42	270.42	4.507	1	Capital
10/11/2023	77V-302	8:30	11:25	174.96	11.664	4	Capital
10/11/2023	24C-443	11:41	12:28	47.16	2.358	3	Reliability
10/12/2023	81N-412	8:17	11:05	168.54	185.394	66	Capital
10/12/2023	16W-302	11:40	13:26	105.3	8.775	5	Capital
10/12/2023	4S-322	8:05	8:27	21.72	0.362	1	Capital
10/12/2023	131H-423	10:58	11:34	36.24	7.852	13	Reliability
10/15/2023	81S-304	2:00	5:02	181.74	2877.55	950	Reliability
10/15/2023	126H-312	14:41	16:24	103.74	15.561	9	Reliability
10/15/2023	81S-305	2:08	4:55	167.28	4639.232	1664	Reliability
10/15/2023	81S-306	2:01	4:58	177.54	6953.65	2350	Reliability
10/16/2023	77V-302	12:50	16:06	196.14	111.146	34	Capital
10/16/2023	70V-312	10:36	11:50	73.14	15.847	13	Reliability
10/16/2023	81S-303	11:57	15:53	236.52	2526.822	641	Reliability
10/16/2023	81S-303	15:43	15:58	14.76	215.45	1460	Reliability
10/17/2023	55V-313	7:59	12:09	249.84	179.052	43	Capital
10/17/2023	56N-414	13:57	15:25	87.9	4.395	3	Reliability
10/17/2023	77V-301	9:17	12:28	191.04	44.576	14	Capital
10/17/2023	82V-422	11:08	11:56	48.24	57.084	71	Reliability
10/18/2023	87H-311	13:14	14:09	54.48	0.908	1	Capital
10/18/2023	4S-332	17:08	17:34	26.58	6.645	15	Capital
10/18/2023	76V-301	8:50	18:35	584.94	19.498	2	Capital
10/18/2023	93V-311	10:07	11:45	97.5	47.125	29	Reliability
10/18/2023	37N-414	9:14	11:53	159.3	153.99	58	Capital
10/18/2023	96H-412	10:41	12:55	133.2	11.1	5	Capital
10/18/2023	59C-402	8:57	13:57	299.1	104.685	21	Reliability
10/19/2023	77V-302	8:26	12:01	214.26	7.142	2	Capital

Date	Feeder	Start Time (24-hour clock)	Restore Time (24- hour clock)	Duration (Minutes)	Customer Hours of Interruption	Customers Interrupted	CEA Subcause
10/20/2023	18V-413	12:51	13:56	64.68	6.468	6	Reliability
10/21/2023	18V-413	10:11	13:02	171.54	40.026	14	Reliability
10/23/2023	92H-334	10:01	10:29	27.78	28.243	61	Capital
10/23/2023	113H-441	13:35	14:37	61.98	1.033	1	Capital
10/24/2023	4C-430	12:12	14:00	107.82	19.767	11	Reliability
10/24/2023	56N-414	9:46	15:00	313.8	130.75	25	Capital
10/24/2023	96H-411	13:25	15:07	101.7	5.085	3	Tree Trimming
10/24/2023	2C-402	8:44	14:51	366.9	18.345	3	Reliability
10/25/2023	95H-251	9:00	12:31	211.32	151.446	43	Capital
10/26/2023	2C-402	9:02	12:35	212.88	42.576	12	Reliability
10/26/2023	55V-314	13:06	13:56	49.38	0.823	1	Capital
10/26/2023	96H-411	10:31	11:57	86.04	12.906	9	Capital
10/26/2023	104H-411	17:47	17:58	11.46	3.82	20	Reliability
10/27/2023	67C-411	10:09	11:28	78.72	22.304	17	Capital
10/27/2023	82V-402	10:53	12:36	102.84	1.714	1	Capital
10/28/2023	73W-411	11:35	12:09	33.6	11.76	21	Capital
10/28/2023	12V-304	7:16	12:20	304.5	1349.95	266	Tree Trimming
10/28/2023	127H-411	20:58	23:30	151.56	41.76	33	Switching
10/28/2023	12V-304	7:55	11:44	229.08	1240.85	325	Tree Trimming
10/28/2023	37W-202	8:57	9:45	47.88	5.586	7	Tree Trimming
10/29/2023	19C-204	9:15	20:00	644.64	236.368	22	Tree Trimming
10/29/2023	91W-411	8:03	13:05	301.92	5.032	1	Capital
10/29/2023	127H-411	14:10	20:20	369.72	147.888	24	Capital
10/29/2023	19C-203	8:03	12:38	275.4	335.07	73	Reliability
10/29/2023	139H-414	14:17	19:50	333.42	822.436	148	Capital
10/29/2023	19C-203	8:03	19:55	712.56	249.396	21	Reliability
10/29/2023	19C-203	8:03	19:56	713.46	344.839	29	Reliability
10/31/2023	96H-411	9:23	14:21	298.74	44.811	9	Capital
10/31/2023	77V-302	16:12	16:38	26.58	13.733	31	Reliability
11/1/2023	50N-411	15:36	16:02	26.58	5.759	13	Reliability
11/1/2023	20H-304	10:54	11:05	10.98	0.366	2	Capital
11/1/2023	63V-311	22:00	22:06	6.54	480.799	4411	Planned Transmission
11/1/2023	64V-301	22:00	22:06	6.54	305.636	2804	Planned Transmission
11/1/2023	113H-443	14:50	15:08	18.72	2.496	8	Capital
11/1/2023	81N-411	14:51	15:11	19.56	0.326	1	Reliability
11/1/2023	50N-411	9:26	10:12	46.26	10.023	13	Capital
11/1/2023	4C-424	10:05	10:13	7.8	0.52	4	Reliability
11/1/2023	99V-313	10:12	12:13	120.66	20.11	10	Reliability
11/1/2023	50N-411	9:26	10:13	46.92	5.474	7	Capital
11/1/2023	127H-411	14:52	15:17	24.9	2.905	7	Capital
11/1/2023	113H-432	9:57	10:18	21.12	2.464	7	Reliability
11/1/2023	20H-306	14:22	14:25	3.66	0.793	13	Reliability
11/1/2023	113H-432	18:43	19:26	42.24	3.52	5	Capital
11/1/2023	58H-421	18:44	19:26	42	2.8	4	Capital
11/1/2023	23H-301	9:46	10:26	40.56	6.76	10	Capital
11/1/2023	50W-412	10:02	10:28	26.16	3.488	8	Reliability
11/1/2023	56N-401	18:18	19:29	70.8	15.34	13	Capital
11/1/2023	137H-413	14:15	14:31	16.02	2.67	10	Capital
11/1/2023	4C-424	11:16	11:32	15.54	1.036	4	Capital
11/1/2023	131H-422	10:02	10:33	31.02	3.619	7	Capital
11/1/2023	87H-313	10:14	10:33	18.48	0.308	1	Capital
11/1/2023	127H-411	10:44	11:37	53.04	2.652	3	Reliability
11/1/2023	131H-422	11:27	11:38	11.64	1.746	9	Reliability

Date	Feeder	Start Time (24-hour clock)	Restore Time (24- hour clock)	Duration (Minutes)	Customer Hours of Interruption	Customers Interrupted	CEA Subcause
11/1/2023	126H-311	10:42	11:38	55.62	8.343	9	Capital
11/1/2023	101H-421	13:10	13:39	28.86	1.924	4	Reliability
11/1/2023	91W-411	8:12	11:40	207.24	13.816	4	Capital
11/1/2023	92H-331	9:23	9:41	18.48	0.616	2	Reliability
11/1/2023	11S-305	9:28	9:42	13.86	1.617	7	Reliability
11/1/2023	127H-411	9:37	10:42	64.86	7.567	7	Reliability
11/1/2023	54H-302	9:23	9:44	21.12	5.28	15	Capital
11/1/2023	23H-301	13:18	13:46	27.72	6.468	14	Reliability
11/1/2023	113H-432	17:52	18:46	53.7	6.265	7	Capital
11/1/2023	62N-411	14:28	15:48	79.56	26.52	20	Capital
11/1/2023	11S-305	10:28	10:48	20.52	2.736	8	Reliability
11/1/2023	131H-424	17:22	17:50	28.14	1.876	4	Reliability
11/1/2023	131H-422	11:37	11:52	15.12	1.008	4	Reliability
11/1/2023	131H-422	12:45	12:55	10.86	1.267	7	Reliability
11/1/2023	62N-416	11:11	12:58	106.98	26.745	15	Reliability
11/2/2023	87W-311	18:09	19:01	52.44	7.866	9	Reliability
11/2/2023	54H-304	9:20	10:01	41.28	13.072	19	Reliability
11/2/2023	81S-305	17:34	18:02	27.54	2.295	5	Reliability
11/2/2023	87H-311	14:59	16:02	62.88	2.096	2	Capital
11/2/2023	101H-421	9:23	10:03	40.26	4.026	6	Capital
11/2/2023	82V-422	12:30	13:03	32.58	3.258	6	Reliability
11/2/2023	81S-305	9:54	10:04	9.48	1.422	9	Reliability
11/2/2023	87W-312	10:46	11:05	19.14	2.233	7	Reliability
11/2/2023	113H-443	10:52	11:05	12.36	0.824	4	Reliability
11/2/2023	113H-433	13:45	14:07	22.68	4.158	11	Reliability
11/2/2023	3S-303	12:04	12:08	4.68	0.546	7	Capital
11/2/2023	2H-422	13:17	14:09	51.48	9.438	11	Reliability
11/2/2023	92H-334	11:42	13:09	87.66	1.461	1	Reliability
11/2/2023	3S-303	11:49	12:09	19.68	2.624	8	Reliability
11/2/2023	82V-402	16:45	17:10	25.44	2.544	6	Capital
11/2/2023	92H-334	9:52	11:11	78.66	1.311	1	Reliability
11/2/2023	76V-301	10:24	15:12	288.18	14.409	3	Capital
11/2/2023	82V-422	8:42	9:13	30.72	3.072	6	Reliability
11/2/2023	20H-303	10:55	11:13	17.76	2.368	8	Capital
11/2/2023	129H-412	10:57	11:13	15.72	2.882	11	Reliability
11/2/2023	20H-306	22:02	22:15	13.2	0.22	1	Capital
11/2/2023	64V-301	1:08	1:15	6.78	316.852	2804	Planned Transmission
11/2/2023	63V-313	1:08	1:15	6.78	498.443	4411	Planned Transmission
11/2/2023	50W-412	13:16	14:15	58.56	4.88	5	Capital
11/2/2023	40H-303	12:53	13:15	22.68	4.158	11	Reliability
11/2/2023	124H-302	9:58	10:15	17.58	3.809	13	Reliability
11/2/2023	20H-303	10:06	10:16	9.6	0.32	2	Capital
11/2/2023	92H-334	11:56	13:18	81.66	5.444	4	Reliability
11/2/2023	20H-303	13:48	14:19	31.14	3.633	7	Reliability
11/2/2023	22C-403	17:47	18:20	32.88	2.74	5	Reliability
11/2/2023	70W-312	16:01	16:21	20.1	1.675	5	Capital
11/2/2023	82V-402	9:01	9:21	20.22	3.033	9	Capital
11/2/2023	54H-302	8:13	8:22	9.18	1.989	13	Capital
11/2/2023	20H-304	8:52	9:23	31.02	7.755	15	Reliability
11/2/2023	64V-303	14:56	16:24	88.74	13.311	9	Capital
11/2/2023	113H-433	9:04	9:27	22.08	2.576	7	Tree Trimming
11/2/2023	15N-403	12:42	15:28	165.84	16.584	6	Reliability
11/2/2023	82V-402	15:10	17:29	139.38	9.292	4	Capital

Date	Feeder	Start Time (24-hour clock)	Restore Time (24- hour clock)	Duration (Minutes)	Customer Hours of Interruption	Customers Interrupted	CEA Subcause
11/2/2023	20H-305	10:19	10:33	14.28	2.38	10	Reliability
11/2/2023	73W-411	15:00	15:35	35.04	5.256	9	Reliability
11/2/2023	54H-302	9:01	9:36	34.14	5.121	9	Reliability
11/2/2023	20H-303	17:10	17:36	25.2	2.1	5	Capital
11/2/2023	4S-333	21:03	21:37	34.62	6.347	11	Capital
11/2/2023	22C-403	10:09	10:37	27.06	2.255	5	Reliability
11/2/2023	64V-303	8:56	9:37	40.62	6.093	9	Capital
11/2/2023	96H-411	13:57	15:38	101.28	3.376	2	Reliability
11/2/2023	92H-334	8:58	9:38	39.72	1.324	2	Reliability
11/2/2023	62N-416	13:15	15:40	145.44	9.696	4	Reliability
11/2/2023	20H-303	9:36	9:40	4.32	0.36	5	Reliability
11/2/2023	40H-302	12:19	12:41	22.56	1.128	3	Reliability
11/2/2023	103W-312	10:07	10:42	35.16	1.758	3	Capital
11/2/2023	82V-402	10:43	11:42	58.56	5.856	6	Customer Requested
11/2/2023	15N-403	10:00	12:44	164.16	2.736	1	Capital
11/2/2023	62N-416	10:52	12:44	112.44	481.618	257	Reliability
11/2/2023	81S-305	10:19	10:45	26.22	3.059	7	Reliability
11/2/2023	3S-309	13:28	13:45	16.68	0.834	3	Reliability
11/2/2023	99V-314	10:22	10:46	24.12	2.814	7	Reliability
11/2/2023	3S-403	10:44	16:46	361.8	36.18	6	Reliability
11/2/2023	20H-303	17:50	18:47	57.24	2.862	3	Capital
11/2/2023	25W-301	12:09	12:48	39.48	3.29	5	Capital
11/2/2023	54H-302	15:27	15:51	23.46	5.083	13	Capital
11/2/2023	36V-303	12:02	13:55	113.64	13.258	7	Capital
11/2/2023	104H-411	14:32	14:56	24.36	9.744	24	Reliability
11/2/2023	139H-414	9:37	9:56	18.48	1.54	5	Reliability
11/2/2023	104H-411	14:25	14:57	32.16	11.256	21	Reliability
11/2/2023	20H-304	15:34	15:57	22.5	5.625	15	Capital
11/2/2023	82V-402	8:11	8:59	47.28	3.152	4	Capital
11/2/2023	82V-423	9:49	9:59	10.38	1.384	8	Reliability
11/3/2023	23W-301	16:15	17:02	46.98	1.566	2	Reliability
11/3/2023	126H-313	17:20	19:04	104.4	22.62	13	Reliability
11/3/2023	77V-301	16:48	17:04	15.36	1.792	7	Capital
11/3/2023	70W-312	9:15	10:05	50.52	6.736	8	Capital
11/3/2023	62N-413	9:25	10:05	39.66	2.644	4	Capital
11/3/2023	56N-414	18:37	19:07	29.4	4.41	9	Reliability
11/3/2023	20N-203	16:45	17:07	21.72	7.964	22	Reliability
11/3/2023	2H-421	16:43	17:08	25.44	5.936	14	Capital
11/3/2023	82S-303	10:18	16:09	350.64	29.22	5	Capital
11/3/2023	103H-433	13:47	14:14	27	1.35	3	Capital
11/3/2023	77V-301	8:07	8:21	14.16	1.652	7	Capital
11/3/2023	113H-434	10:13	10:21	7.68	0.768	6	Reliability
11/3/2023	103H-434	13:58	14:25	26.34	1.317	3	Reliability
11/3/2023	137H-413	9:55	10:27	31.2	7.28	14	Reliability
11/3/2023	55V-322	9:57	10:28	30.72	1.536	3	Reliability
11/3/2023	2H-421	15:56	16:30	34.98	10.494	18	Capital
11/3/2023	81N-411	10:31	11:32	60.84	8.112	8	Reliability
11/3/2023	22V-313	10:50	12:32	102.36	22.178	13	Capital
11/3/2023	82V-402	10:15	10:33	18.18	2.121	7	Capital
11/3/2023	81N-411	10:22	10:34	12	0.6	3	Reliability
11/3/2023	62N-414	11:09	12:35	85.56	2.852	2	Capital
11/3/2023	102W-311	11:57	12:35	37.98	6.33	10	Capital
11/3/2023	50N-411	9:14	9:39	25.02	3.753	9	Capital

Date	Feeder	Start Time (24-hour clock)	Restore Time (24- hour clock)	Duration (Minutes)	Customer Hours of Interruption	Customers Interrupted	CEA Subcause
11/3/2023	50N-411	9:14	9:39	24.42	5.291	13	Capital
11/3/2023	103H-434	13:24	13:40	15.66	2.349	9	Capital
11/3/2023	25W-301	9:54	12:43	168.84	16.884	6	Capital
11/3/2023	84S-305	10:09	10:45	36.12	2.408	4	Reliability
11/3/2023	62N-411	9:41	9:48	6.42	1.284	12	Reliability
11/3/2023	131H-422	11:14	11:53	38.94	2.596	4	Capital
11/3/2023	101H-412	9:54	11:53	119.04	19.84	10	Capital
11/3/2023	104H-433	12:27	15:57	210.66	38.621	11	Capital
11/3/2023	22C-404	14:40	14:57	16.38	1.365	5	Reliability
11/3/2023	3N-412	8:47	8:57	9.24	1.232	8	Reliability
11/4/2023	23W-302	12:41	13:07	25.62	0.854	2	Capital
11/4/2023	108H-413	10:37	11:08	30.3	3.535	7	Customer Requested
11/4/2023	111S-313	16:12	17:15	62.4	9.36	9	Reliability
11/4/2023	70W-312	14:12	15:20	68.7	8.015	7	Reliability
11/4/2023	70W-312	14:13	15:20	67.02	7.819	7	Reliability
11/4/2023	59C-402	10:40	13:22	162.18	16.218	6	Capital
11/4/2023	2H-413	8:00	8:31	30.78	0.513	1	Capital
11/4/2023	23W-302	13:09	13:37	28.62	2.385	5	Capital
11/4/2023	23W-302	12:18	12:39	21.18	2.118	6	Capital
11/4/2023	50N-412	17:07	17:40	33.66	3.927	7	Reliability
11/4/2023	82V-422	9:16	9:44	27.96	10.252	22	Capital
11/4/2023	23W-302	14:37	14:45	8.7	0.29	2	Capital
11/5/2023	62N-416	12:12	12:14	2.64	0.396	9	Capital
11/5/2023	20H-306	10:02	11:16	73.62	40.491	33	Capital
11/5/2023	36W-301	9:11	9:20	9.54	0.318	2	Capital
11/5/2023	55N-202	6:15	8:22	127.02	675.323	319	Reliability
11/5/2023	23H-301	8:06	10:24	138	4.6	2	Capital
11/5/2023	104S-313	9:18	12:38	199.74	1594.591	479	Capital
11/5/2023	25W-303	12:27	12:51	23.46	3.128	8	Capital
11/6/2023	137H-414	16:32	17:01	29.04	2.904	6	Capital
11/6/2023	93V-311	10:21	12:03	101.94	10.194	6	Capital
11/6/2023	20H-306	14:32	15:03	31.26	8.857	17	Capital
11/6/2023	82S-303	18:42	19:03	21	5.6	16	Capital
11/6/2023	2H-424	8:54	10:03	69.06	17.265	15	Capital
11/6/2023	104H-413	13:27	16:05	157.14	39.285	15	Capital
11/6/2023	92H-334	9:22	10:06	43.86	4.386	6	Capital
11/6/2023	15N-404	13:00	14:07	67.62	2.254	2	Capital
11/6/2023	104H-442	22:29	23:07	38.4	2.56	4	Capital
11/6/2023	113H-431	8:38	9:07	28.2	6.11	13	Reliability
11/6/2023	108H-413	7:45	8:08	22.98	4.979	13	Reliability
11/6/2023	40H-304	10:55	11:08	13.44	1.568	7	Capital
11/6/2023	79V-402	22:02	22:09	6.96	0.116	1	Capital
11/6/2023	82V-422	9:54	10:09	15.36	2.048	8	Capital
11/6/2023	95H-251	12:57	14:09	72.42	6.035	5	Reliability
11/6/2023	70W-313	13:31	14:11	39.48	11.186	17	Capital
11/6/2023	70W-313	8:47	9:12	25.38	7.191	17	Capital
11/6/2023	11S-412	10:04	10:14	10.08	1.344	8	Capital
11/6/2023	104H-441	11:20	12:14	54.3	11.765	13	Capital
11/6/2023	6N-301	9:40	10:14	33.78	3.378	6	Capital
11/6/2023	101H-412	15:51	16:15	24.12	3.618	9	Capital
11/6/2023	113H-441	9:36	10:16	40.2	8.71	13	Capital
11/6/2023	126H-312	12:03	12:17	14.22	2.607	11	Capital
11/6/2023	77V-302	12:12	16:17	244.38	211.796	52	Reliability

Date	Feeder	Start Time (24-hour clock)	Restore Time (24- hour clock)	Duration (Minutes)	Customer Hours of Interruption	Customers Interrupted	CEA Subcause
11/6/2023	113H-432	11:10	11:19	8.52	1.278	9	Capital
11/6/2023	56N-401	13:57	14:22	25.26	0.421	1	Capital
11/6/2023	40H-303	14:00	14:23	22.44	2.618	7	Capital
11/6/2023	2H-411	14:06	14:23	16.5	1.1	4	Capital
11/6/2023	92H-334	8:19	9:23	63.72	3.186	3	Reliability
11/6/2023	67C-411	9:46	12:23	157.62	21.016	8	Reliability
11/6/2023	58H-431	12:59	13:23	24.42	3.256	8	Capital
11/6/2023	101H-421	9:14	9:24	10.44	0.87	5	Reliability
11/6/2023	108H-413	13:56	14:24	27.9	6.045	13	Capital
11/6/2023	73W-411	10:08	10:26	18.78	1.565	5	Capital
11/6/2023	104H-423	9:12	13:26	254.16	72.012	17	Reliability
11/6/2023	11S-412	12:52	13:27	34.74	9.264	16	Capital
11/6/2023	23H-301	15:57	16:27	30.54	6.108	12	Capital
11/6/2023	137H-412	15:19	15:29	10.38	1.903	11	Reliability
11/6/2023	79V-402	7:27	8:29	62.1	11.385	11	Reliability
11/6/2023	50V-402	16:51	17:29	37.38	8.099	13	Capital
11/6/2023	58H-431	10:24	10:32	8.16	0.952	7	Capital
11/6/2023	70W-313	22:25	23:34	68.52	19.414	17	Capital
11/6/2023	2H-411	9:26	9:34	8.34	0.695	5	Capital
11/6/2023	131H-422	8:28	8:34	6.18	0.412	4	Reliability
11/6/2023	126H-312	14:07	16:35	147.66	22.149	9	Capital
11/6/2023	77V-303	8:39	9:36	56.82	8.523	9	Capital
11/6/2023	104H-421	10:03	10:37	33.78	8.445	15	Capital
11/6/2023	77V-303	8:38	9:37	58.56	5.856	6	Capital
11/6/2023	131H-422	10:17	10:38	20.4	2.38	7	Capital
11/6/2023	101H-413	15:16	15:39	23.52	4.312	11	Capital
11/6/2023	104H-423	10:30	10:39	9.6	1.44	9	Capital
11/6/2023	131H-423	9:40	10:39	58.98	5.898	6	Capital
11/6/2023	2H-424	18:18	18:40	21.36	5.34	15	Capital
11/6/2023	137H-411	14:33	14:40	7.02	0.702	6	Capital
11/6/2023	56N-401	10:19	10:41	21.6	1.08	3	Reliability
11/6/2023	113H-433	11:36	11:41	4.5	0.375	5	Reliability
11/6/2023	113H-443	15:05	15:42	37.38	9.345	15	Capital
11/6/2023	20H-301	19:15	19:42	26.1	5.655	13	Capital
11/6/2023	18V-412	15:31	17:42	130.56	13.056	6	Capital
11/6/2023	92H-332	12:37	14:42	124.68	6.234	3	Capital
11/6/2023	77V-302	8:10	11:43	212.88	120.632	34	Reliability
11/6/2023	11S-303	11:25	11:43	17.22	2.583	9	Capital
11/6/2023	101H-423	11:28	11:44	16.38	2.184	8	Capital
11/6/2023	54H-301	10:37	10:45	7.86	1.441	11	Reliability
11/6/2023	20H-303	10:28	10:46	18	3	10	Capital
11/6/2023	20H-301	14:01	15:49	107.22	7.148	4	Capital
11/6/2023	113H-443	17:17	17:49	32.7	2.18	4	Capital
11/6/2023	84W-302	15:22	16:53	90.9	9.09	6	Reliability
11/6/2023	127H-411	13:09	13:54	45.18	6.777	9	Capital
11/6/2023	23H-304	13:21	13:54	32.4	1.62	3	Capital
11/6/2023	87W-311	14:25	16:54	148.86	4.962	2	Capital
11/6/2023	131H-422	13:53	14:55	61.56	10.26	10	Capital
11/6/2023	131H-421	9:45	9:56	11.7	2.925	15	Capital
11/6/2023	79V-401	20:11	20:57	45.54	2.277	3	Capital
11/6/2023	54H-304	11:46	11:57	11.46	7.258	38	Capital
11/6/2023	101H-413	8:49	8:57	7.56	1.386	11	Capital
11/6/2023	20H-304	10:19	10:58	39.06	6.51	10	Capital

Date	Feeder	Start Time (24-hour clock)	Restore Time (24- hour clock)	Duration (Minutes)	Customer Hours of Interruption	Customers Interrupted	CEA Subcause
11/6/2023	54H-304	13:25	13:59	34.14	5.69	10	Capital
11/6/2023	20H-303	9:25	9:59	34.5	3.45	6	Capital
11/7/2023	58H-421	9:27	10:00	32.22	5.37	10	Capital
11/7/2023	77V-302	12:29	15:00	151.68	45.504	18	Capital
11/7/2023	129H-411	10:07	15:03	295.62	24.635	5	Reliability
11/7/2023	137H-413	9:49	10:03	13.32	3.108	14	Capital
11/7/2023	70V-311	11:16	12:04	48.42	2.421	3	Capital
11/7/2023	92H-334	10:48	12:04	75.66	3.783	3	Reliability
11/7/2023	113H-431	7:52	8:04	11.94	1.99	10	Capital
11/7/2023	70W-321	11:34	12:05	31.2	4.16	8	Capital
11/7/2023	113H-434	14:44	15:05	20.7	4.14	12	Capital
11/7/2023	113H-441	18:52	19:05	13.44	1.568	7	Capital
11/7/2023	58H-431	10:11	11:06	54.84	5.484	6	Capital
11/7/2023	58H-431	13:40	14:06	25.92	2.592	6	Capital
11/7/2023	101H-412	13:40	14:06	26.28	35.478	81	Capital
11/7/2023	4C-441	8:58	10:06	67.38	56.15	50	Capital
11/7/2023	4S-321	11:02	11:07	5.34	1.246	14	Capital
11/7/2023	126H-312	13:43	14:07	24	2.4	6	Capital
11/7/2023	65V-301	9:57	10:07	9.84	0.164	1	Capital
11/7/2023	2H-424	9:50	10:08	18.42	4.605	15	Capital
11/7/2023	92H-334	12:04	12:10	5.82	0.388	4	Reliability
11/7/2023	137H-413	17:39	18:10	30.84	7.196	14	Capital
11/7/2023	129H-412	9:52	10:10	18.78	4.695	15	Capital
11/7/2023	113H-441	9:03	9:11	7.98	0.931	7	Capital
11/7/2023	23H-304	11:38	12:11	33.12	1.104	2	Capital
11/7/2023	103H-432	10:53	13:11	138.48	20.772	9	Capital
11/7/2023	103H-432	14:04	14:13	9.06	0.453	3	Capital
11/7/2023	15S-303	11:09	11:14	4.56	0.836	11	Capital
11/7/2023	50W-412	8:29	12:14	225.36	3.756	1	Reliability
11/7/2023	113H-434	9:59	11:14	75.72	22.716	18	Capital
11/7/2023	92H-332	10:05	10:15	9.54	0.954	6	Reliability
11/7/2023	137H-411	9:09	9:15	5.76	0.576	6	Reliability
11/7/2023	101H-421	12:48	13:15	26.52	3.094	7	Capital
11/7/2023	127H-411	9:06	9:16	9.78	1.793	11	Capital
11/7/2023	58H-421	13:30	14:16	46.98	15.66	20	Capital
11/7/2023	101H-423	9:05	9:17	12.06	1.206	6	Capital
11/7/2023	104H-442	10:20	12:19	119.64	17.946	9	Reliability
11/7/2023	82V-402	10:30	11:19	49.26	6.568	8	Capital
11/7/2023	92H-331	11:09	11:20	10.38	0.865	5	Reliability
11/7/2023	48H-301	13:52	14:20	27.9	4.185	9	Capital
11/7/2023	3S-307	10:00	10:21	20.88	4.524	13	Capital
11/7/2023	103H-434	11:12	11:21	9.48	1.264	8	Capital
11/7/2023	2H-421	10:26	13:22	176.04	61.614	21	Capital
11/7/2023	101H-421	8:06	8:24	17.34	2.023	7	Capital
11/7/2023	103H-434	13:21	15:24	122.7	2.045	1	Capital
11/7/2023	87H-313	12:51	14:24	93.12	9.312	6	Capital
11/7/2023	22C-404	11:28	15:25	237.36	7.912	2	Capital
11/7/2023	58H-431	12:45	13:25	39.96	9.99	15	Capital
11/7/2023	62N-414	13:05	13:26	20.58	2.401	7	Capital
11/7/2023	55V-323	16:20	18:26	126.12	8.408	4	Capital
11/7/2023	141H-401	13:10	13:27	16.26	2.71	10	Capital
11/7/2023	104H-421	16:13	16:27	13.8	3.68	16	Capital
11/7/2023	37W-202	13:31	14:27	56.04	4.67	5	Capital

Date	Feeder	Start Time (24-hour clock)	Restore Time (24- hour clock)	Duration (Minutes)	Customer Hours of Interruption	Customers Interrupted	CEA Subcause
11/7/2023	103H-432	11:11	11:29	17.88	1.49	5	Capital
11/7/2023	62N-413	14:22	16:29	127.5	8.5	4	Capital
11/7/2023	62N-413	14:31	16:29	118.56	3.952	2	Capital
11/7/2023	70W-313	16:06	16:32	26.22	1.748	4	Capital
11/7/2023	87W-312	13:07	13:34	26.94	0.449	1	Capital
11/7/2023	81S-305	10:21	10:35	14.52	0.968	4	Capital
11/7/2023	92H-331	11:28	11:35	6.9	0.805	7	Reliability
11/7/2023	103H-432	9:29	9:36	6.6	0.88	8	Capital
11/7/2023	127H-411	12:18	12:37	18.72	3.432	11	Capital
11/7/2023	2H-421	15:01	15:38	36.66	8.554	14	Capital
11/7/2023	113H-432	13:48	16:38	170.28	17.028	6	Capital
11/7/2023	37N-414	17:58	18:38	39.72	2.648	4	Capital
11/7/2023	81S-304	13:07	13:40	33.48	6.696	12	Capital
11/7/2023	55V-323	9:28	9:40	12.36	1.236	6	Capital
11/7/2023	48H-301	8:31	8:40	9.3	1.395	9	Capital
11/7/2023	92H-332	10:34	10:40	5.82	0.97	10	Reliability
11/7/2023	137H-411	10:14	10:41	27.66	2.305	5	Capital
11/7/2023	81S-304	14:19	14:41	21.96	4.392	12	Capital
11/7/2023	113H-434	19:25	19:41	16.2	4.86	18	Capital
11/7/2023	131H-424	10:12	10:42	29.82	2.982	6	Capital
11/7/2023	129H-411	17:21	17:42	20.88	1.74	5	Capital
11/7/2023	104H-421	14:06	14:43	37.08	9.27	15	Capital
11/7/2023	101H-413	9:19	9:43	23.28	5.432	14	Capital
11/7/2023	92H-332	11:35	12:43	67.38	8.984	8	Capital
11/7/2023	48H-301	13:21	13:45	24.12	9.648	24	Capital
11/7/2023	113H-434	14:19	14:46	26.94	4.939	11	Capital
11/7/2023	2H-424	10:22	10:46	23.76	4.356	11	Capital
11/7/2023	101H-411	8:42	8:49	7.74	0.774	6	Capital
11/7/2023	92H-331	8:40	8:50	9.36	1.248	8	Switching
11/7/2023	87W-312	12:42	12:50	7.8	0.78	6	Reliability
11/7/2023	113H-431	15:16	15:51	34.98	5.83	10	Capital
11/7/2023	65V-302	15:32	15:53	21.42	1.428	4	Capital
11/7/2023	37N-414	18:39	18:53	13.68	1.14	5	Capital
11/7/2023	137H-412	9:52	12:53	180.36	21.042	7	Capital
11/7/2023	96H-411	15:10	15:54	43.68	5.824	8	Capital
11/7/2023	4C-441	12:49	13:56	67.02	6.702	6	Reliability
11/7/2023	131H-423	10:45	10:57	11.82	1.773	9	Capital
11/7/2023	126H-312	11:11	11:58	47.28	3.152	4	Capital
11/7/2023	2H-421	14:45	14:58	12.48	0.208	1	Capital
11/8/2023	62N-416	14:22	15:01	39.06	13.02	20	Reliability
11/8/2023	79V-402	12:34	13:01	27.06	4.961	11	Capital
11/8/2023	3S-303	13:25	14:02	37.26	3.726	6	Reliability
11/8/2023	96H-411	14:52	16:02	69.78	5.815	5	Reliability
11/8/2023	3S-301	9:50	10:03	12.24	1.632	8	Capital
11/8/2023	95H-251	9:39	14:04	264.9	362.03	82	Reliability
11/8/2023	139H-414	8:58	9:05	6.84	1.14	10	Reliability
11/8/2023	131H-422	10:26	11:07	41.22	8.931	13	Capital
11/8/2023	104H-413	13:44	14:08	24.3	5.265	13	Reliability
11/8/2023	108H-413	9:54	10:08	13.86	3.696	16	Reliability
11/8/2023	70W-321	17:11	18:09	57.9	3.86	4	Reliability
11/8/2023	131H-422	10:30	11:09	39.12	3.26	5	Capital
11/8/2023	81S-302	9:50	10:10	19.56	2.282	7	Switching
11/8/2023	113H-433	9:57	10:10	13.14	1.095	5	Capital

Date	Feeder	Start Time (24-hour clock)	Restore Time (24- hour clock)	Duration (Minutes)	Customer Hours of Interruption	Customers Interrupted	CEA Subcause
11/8/2023	40H-305	7:58	8:11	12.3	2.05	10	Reliability
11/8/2023	108H-413	13:39	14:12	33.18	2.765	5	Reliability
11/8/2023	92H-334	8:17	9:13	56.28	2.814	3	Capital
11/8/2023	99H-311	8:13	16:15	482.04	72.306	9	Reliability
11/8/2023	1N-403	9:36	16:15	399.12	59.868	9	Reliability
11/8/2023	62N-411	14:46	15:15	29.22	0.487	1	Capital
11/8/2023	139H-414	9:08	9:16	8.22	1.233	9	Reliability
11/8/2023	40H-305	14:54	15:18	24.48	4.08	10	Reliability
11/8/2023	104H-413	10:03	10:19	16.32	3.536	13	Reliability
11/8/2023	50W-412	10:17	10:24	6.66	0.777	7	Reliability
11/8/2023	103H-434	9:17	9:25	7.8	1.56	12	Reliability
11/8/2023	4S-324	11:49	14:25	156.24	33.852	13	Capital
11/8/2023	80W-301	15:28	16:26	57.66	7.688	8	Reliability
11/8/2023	79V-402	8:09	8:27	17.88	3.278	11	Reliability
11/8/2023	101H-421	14:07	14:29	22.02	3.67	10	Reliability
11/8/2023	2H-421	15:04	15:30	26.34	8.78	20	Reliability
11/8/2023	127H-411	15:07	15:31	23.76	4.356	11	Reliability
11/8/2023	77V-303	11:19	11:33	14.4	0.72	3	Reliability
11/8/2023	2H-424	9:56	12:34	157.92	68.432	26	Reliability
11/8/2023	93V-311	14:59	15:37	37.74	4.403	7	Capital
11/8/2023	127H-411	9:29	9:38	9	1.65	11	Reliability
11/8/2023	77V-302	14:31	15:39	68.4	11.4	10	Reliability
11/8/2023	59C-403	14:01	14:40	38.82	5.176	8	Reliability
11/8/2023	113H-434	9:29	9:40	10.86	3.439	19	Reliability
11/8/2023	2H-421	9:13	9:43	30.66	10.22	20	Reliability
11/8/2023	20H-304	14:48	15:43	55.02	16.506	18	Capital
11/8/2023	103H-432	14:25	14:44	19.44	4.536	14	Reliability
11/8/2023	113H-443	14:20	14:45	25.56	3.834	9	Capital
11/8/2023	3N-412	10:35	13:47	191.16	17.55	7	Reliability
11/8/2023	82V-423	13:40	13:47	7.02	0.117	1	Reliability
11/8/2023	79V-402	17:05	17:48	43.68	8.008	11	Capital
11/8/2023	48H-301	13:28	13:48	20.46	4.092	12	Capital
11/8/2023	48H-301	8:41	8:48	6.6	1.32	12	Reliability
11/8/2023	56N-414	13:02	13:50	48.36	0.806	1	Capital
11/8/2023	2C-402	11:25	13:51	145.68	4.856	2	Reliability
11/8/2023	79V-402	9:40	11:52	132.24	11.02	5	Reliability
11/8/2023	139H-414	14:12	14:53	41.16	6.174	9	Capital
11/8/2023	103H-434	9:40	9:53	12.96	1.296	6	Reliability
11/8/2023	37N-414	10:45	11:55	70.74	12.969	11	Capital
11/8/2023	108H-413	11:00	11:56	55.74	10.219	11	Capital
11/8/2023	2H-411	8:23	8:57	34.2	2.28	4	Reliability
11/8/2023	93V-311	9:18	9:58	40.08	8.016	12	Capital
11/8/2023	16W-302	13:40	14:58	78.24	7.824	6	Capital
11/8/2023	20H-305	15:41	15:58	16.56	3.312	12	Capital
11/8/2023	101H-423	15:47	15:58	10.5	1.4	8	Reliability
11/9/2023	127H-411	12:43	15:05	142.08	9.472	4	Reliability
11/9/2023	131H-424	10:53	11:05	12.06	2.412	12	Capital
11/9/2023	103H-432	10:56	11:07	10.98	1.464	8	Capital
11/9/2023	113H-443	9:57	10:07	10.32	1.376	8	Reliability
11/9/2023	129H-412	12:47	13:08	21.12	2.112	6	Reliability
11/9/2023	113H-441	13:12	14:09	56.76	8.514	9	Reliability
11/9/2023	104H-431	9:25	10:09	43.62	10.178	14	Capital
11/9/2023	131H-422	11:45	12:09	24.66	2.877	7	Capital

Date	Feeder	Start Time (24-hour clock)	Restore Time (24- hour clock)	Duration (Minutes)	Customer Hours of Interruption	Customers Interrupted	CEA Subcause
11/9/2023	82V-402	9:58	10:09	10.86	1.629	9	Reliability
11/9/2023	131H-421	12:00	12:10	9.54	1.113	7	Capital
11/9/2023	126H-311	15:55	16:10	15.78	2.63	10	Reliability
11/9/2023	139H-414	7:59	8:10	10.08	1.68	10	Capital
11/9/2023	23H-301	16:57	17:11	14.04	2.574	11	Capital
11/9/2023	129H-412	12:00	12:12	12.36	1.236	6	Capital
11/9/2023	23H-304	15:31	16:12	41.04	4.788	7	Reliability
11/9/2023	12V-303	8:34	10:13	98.7	108.57	66	Tree Trimming
11/9/2023	103H-432	11:07	11:14	7.56	0.756	6	Capital
11/9/2023	16V-315	8:50	11:15	144.6	14.46	6	Reliability
11/9/2023	131H-423	9:56	10:17	20.82	2.429	7	Capital
11/9/2023	50V-401	12:44	13:18	34.14	6.259	11	Reliability
11/9/2023	62N-416	9:57	12:18	141.66	16.75	11	Capital
11/9/2023	22C-404	11:50	14:19	148.56	9.904	4	Reliability
11/9/2023	22W-312	14:54	15:19	24.72	4.12	10	Reliability
11/9/2023	137H-411	10:02	10:20	17.34	1.734	6	Capital
11/9/2023	4S-332	13:57	14:20	23.04	0.384	1	Reliability
11/9/2023	54H-304	14:08	17:21	193.5	64.5	20	Capital
11/9/2023	20H-301	10:06	10:22	15.36	0.512	2	Reliability
11/9/2023	137H-411	10:08	10:22	13.62	0.908	4	Capital
11/9/2023	2C-402	10:08	10:22	13.86	1.617	7	Reliability
11/9/2023	139H-414	14:09	14:22	13.38	2.23	10	Reliability
11/9/2023	126H-312	11:11	11:22	11.52	1.344	7	Capital
11/9/2023	23H-304	8:20	8:22	1.74	0.203	7	Reliability
11/9/2023	2C-402	9:32	14:24	291.36	19.424	4	Capital
11/9/2023	113H-444	10:48	11:25	37.5	5	8	Capital
11/9/2023	23H-301	9:16	9:26	9.66	1.932	12	Reliability
11/9/2023	82V-422	9:21	9:26	5.64	1.316	14	Reliability
11/9/2023	22W-313	13:26	14:29	62.94	14.686	14	Reliability
11/9/2023	2H-413	13:17	13:30	12.96	1.944	9	Capital
11/9/2023	127H-411	8:23	8:31	7.98	0.931	7	Reliability
11/9/2023	95H-251	9:27	12:31	183.66	131.623	43	Capital
11/9/2023	131H-422	12:11	12:32	20.64	2.408	7	Capital
11/9/2023	48H-301	13:02	13:34	31.92	5.852	11	Reliability
11/9/2023	131H-422	9:06	9:34	28.02	2.335	5	Reliability
11/9/2023	56N-414	11:13	13:35	142.38	7.119	3	Reliability
11/9/2023	40H-305	14:14	14:36	22.38	6.714	18	Capital
11/9/2023	101H-413	15:23	15:37	14.46	1.446	6	Reliability
11/9/2023	137H-411	10:26	10:40	14.16	0.944	4	Reliability
11/9/2023	131H-421	11:28	11:40	11.64	1.164	6	Reliability
11/9/2023	82V-402	13:24	13:43	18.96	0.948	3	Reliability
11/9/2023	129H-412	13:28	13:43	15.54	7.511	29	Capital
11/9/2023	20H-301	9:23	9:45	22.08	4.416	12	Reliability
11/9/2023	104H-421	17:29	17:45	15.78	5.786	22	Reliability
11/9/2023	40H-305	9:23	10:47	83.64	25.092	18	Capital
11/9/2023	50N-412	13:26	15:50	144.18	19.224	8	Reliability
11/9/2023	20H-301	14:08	14:54	46.14	9.228	12	Capital
11/9/2023	93V-313	13:55	14:54	59.34	8.901	9	Capital
11/9/2023	23H-301	16:35	16:55	19.86	3.972	12	Reliability
11/9/2023	82V-422	12:39	12:59	20.34	4.746	14	Capital
11/10/2023	20H-306	11:55	12:00	4.44	2.368	32	Reliability
11/10/2023	58H-431	17:45	18:01	15.84	2.112	8	Capital
11/10/2023	11S-304	13:31	14:04	33	4.4	8	Capital

Date	Feeder	Start Time (24-hour clock)	Restore Time (24- hour clock)	Duration (Minutes)	Customer Hours of Interruption	Customers Interrupted	CEA Subcause
11/10/2023	103H-432	10:55	11:05	9.48	2.844	18	Capital
11/10/2023	12V-302	14:41	15:07	25.8	10.32	24	Reliability
11/10/2023	11S-412	11:52	12:09	17.76	2.96	10	Capital
11/10/2023	48H-301	9:58	10:13	15.36	6.656	26	Capital
11/10/2023	137H-411	9:08	9:15	6.48	0.756	7	Capital
11/10/2023	92H-332	10:45	11:15	29.94	3.493	7	Capital
11/10/2023	87W-311	9:51	10:16	24.72	1.236	3	Capital
11/10/2023	11S-304	9:03	9:18	14.52	1.936	8	Capital
11/10/2023	13V-303	15:22	16:18	56.94	3.796	4	Capital
11/10/2023	36V-302	14:58	15:19	21.24	4.248	12	Capital
11/10/2023	11S-411	10:31	11:20	49.56	2.478	3	Capital
11/10/2023	54H-302	9:51	10:20	29.52	8.364	17	Capital
11/10/2023	55V-322	10:04	10:21	16.62	2.493	9	Capital
11/10/2023	137H-412	9:00	9:23	23.16	1.93	5	Capital
11/10/2023	93V-313	16:36	17:23	46.62	4.662	6	Capital
11/10/2023	131H-422	14:39	15:23	44.28	4.428	6	Capital
11/10/2023	22W-311	9:03	9:24	21.12	3.872	11	Capital
11/10/2023	103H-432	11:17	11:25	8.04	0.536	4	Capital
11/10/2023	50W-412	14:13	14:29	16.08	1.34	5	Capital
11/10/2023	58H-421	13:04	13:30	25.62	6.832	16	Capital
11/10/2023	48H-301	9:21	9:30	9.06	3.624	24	Capital
11/10/2023	87H-312	11:05	11:32	26.7	0.89	2	Capital
11/10/2023	103H-432	11:14	11:33	18.42	3.377	11	Capital
11/10/2023	23H-304	9:23	9:34	11.1	5.18	28	Capital
11/10/2023	82V-402	14:10	14:35	24.42	0.814	2	Capital
11/10/2023	58H-421	9:22	9:35	12.42	3.312	16	Capital
11/10/2023	55V-313	10:22	12:36	134.82	33.705	15	Reliability
11/10/2023	92H-332	10:15	10:44	29.04	2.904	6	Capital
11/10/2023	23H-304	9:34	9:44	10.26	1.539	9	Capital
11/10/2023	103H-432	11:35	11:44	9	0.9	6	Capital
11/10/2023	50W-411	10:17	10:48	30.72	1.536	3	Capital
11/10/2023	23H-304	16:54	17:49	54.54	25.452	28	Capital
11/10/2023	23H-304	16:55	17:49	54.6	8.19	9	Capital
11/10/2023	137H-412	9:25	9:50	24.72	2.472	6	Capital
11/10/2023	103H-432	10:32	10:50	17.94	3.887	13	Capital
11/10/2023	58H-431	14:11	14:51	40.2	16.75	25	Capital
11/10/2023	23H-304	16:52	17:52	59.64	26.838	27	Capital
11/10/2023	92H-331	9:46	9:55	9	1.35	9	Capital
11/10/2023	87H-313	10:19	11:57	98.46	18.051	11	Capital
11/10/2023	101H-421	8:30	8:58	27.9	1.86	4	Capital
11/10/2023	4C-441	9:41	9:58	16.8	0.28	1	Capital
11/10/2023	36W-304	13:45	13:58	12.18	0.609	3	Capital
11/11/2023	21W-312	14:50	15:00	9.42	1.099	7	Capital
11/11/2023	4N-312	8:01	12:09	247.74	685.414	166	Capital
11/11/2023	4N-312	8:02	12:10	247.62	57.778	14	Capital
11/11/2023	4N-312	8:03	12:11	247.32	177.246	43	Capital
11/11/2023	70V-311	9:23	10:13	50.04	6.672	8	Capital
11/11/2023	2H-411	14:28	15:14	45.72	10.668	14	Reliability
11/11/2023	23W-302	13:03	14:17	73.86	4.924	4	Capital
11/11/2023	126H-311	10:46	12:26	100.08	8.34	5	Capital
11/11/2023	126H-313	13:55	14:32	37.32	2.488	4	Capital
11/11/2023	23H-302	13:32	13:40	7.62	0.508	4	Capital
11/11/2023	89W-303	9:36	9:49	13.62	2.724	12	Capital

Date	Feeder	Start Time (24-hour clock)	Restore Time (24- hour clock)	Duration (Minutes)	Customer Hours of Interruption	Customers Interrupted	CEA Subcause
11/11/2023	2H-424	13:47	13:56	8.82	1.617	11	Capital
11/11/2023	104H-411	14:50	14:56	6.24	1.976	19	Capital
11/11/2023	25W-303	8:53	8:56	3.42	0.399	7	Capital
11/11/2023	104H-442	12:36	12:57	21	6.3	18	Capital
11/12/2023	92H-334	14:07	14:11	4.08	80.648	1186	Switching
11/12/2023	124H-302	10:15	11:16	60.42	25.175	25	Reliability
11/12/2023	124H-302	10:32	11:16	44.58	14.117	19	Reliability
11/12/2023	36V-302	12:38	15:21	163.5	24.525	9	Reliability
11/12/2023	22W-313	8:03	8:36	33.12	4.968	9	Capital
11/12/2023	11S-301	15:12	15:36	23.94	1.197	3	Reliability
11/12/2023	22N-403	6:52	6:54	1.74	216.34	7460	Planned Transmission
11/13/2023	57W-402	11:52	12:02	10.44	1.044	6	Reliability
11/13/2023	1H-424	23:06	4:16	309.66	56.771	11	Reliability
11/13/2023	104H-421	10:58	12:17	79.02	46.095	35	Reliability
11/13/2023	56N-414	9:45	10:24	38.94	1.947	3	Capital
11/13/2023	93V-313	14:01	15:31	89.94	2.998	2	Capital
11/13/2023	137H-411	14:18	14:32	14.28	0.714	3	Reliability
11/13/2023	137H-411	15:25	15:32	7.62	2.032	16	Reliability
11/13/2023	2C-402	10:32	12:32	119.76	7.984	4	Capital
11/13/2023	93V-313	11:54	12:34	39.9	1.995	3	Capital
11/13/2023	137H-411	9:57	10:34	37.02	0.617	1	Reliability
11/13/2023	55V-314	15:08	16:39	91.26	86.697	57	Capital
11/13/2023	56N-414	13:51	15:39	108.66	10.866	6	Capital
11/13/2023	55V-314	15:08	16:40	91.92	3.064	2	Capital
11/13/2023	54H-301	11:21	13:41	139.8	48.93	21	Reliability
11/13/2023	54H-301	10:31	13:42	190.26	82.446	26	Capital
11/13/2023	20H-306	14:36	14:48	12.12	3.232	16	Capital
11/13/2023	46W-301	18:36	19:48	71.34	13.079	11	Reliability
11/13/2023	48H-301	7:37	7:54	16.14	3.228	12	Capital
11/14/2023	99H-311	12:06	14:00	113.4	5.67	3	Capital
11/14/2023	99H-311	12:07	14:00	112.92	16.938	9	Capital
11/14/2023	70W-321	9:25	10:00	35.76	4.172	7	Reliability
11/14/2023	82V-402	8:49	9:00	10.98	0.915	5	Reliability
11/14/2023	84W-301	10:50	11:00	9.12	0.456	3	Reliability
11/14/2023	22W-312	11:49	12:01	12.36	1.03	5	Reliability
11/14/2023	113H-433	9:50	10:01	11.16	0.744	4	Reliability
11/14/2023	88W-322	15:38	16:03	25.08	2.508	6	Capital
11/14/2023	82V-402	14:45	15:03	17.34	1.445	5	Reliability
11/14/2023	62N-414	11:31	15:04	213.06	3.551	1	Capital
11/14/2023	55V-314	9:34	11:04	90.54	3.018	2	Capital
11/14/2023	104H-423	13:00	13:06	5.82	0.097	1	Switching
11/14/2023	20H-306	13:01	13:06	4.86	0.081	1	Switching
11/14/2023	104H-413	16:25	17:07	41.88	10.47	15	Capital
11/14/2023	103W-311	13:28	14:07	38.7	2.58	4	Capital
11/14/2023	70W-313	13:19	14:10	51.06	0.851	1	Reliability
11/14/2023	50V-401	9:56	14:10	254.16	50.832	12	Capital
11/14/2023	113H-434	7:58	8:10	12	1.6	8	Reliability
11/14/2023	131H-423	10:58	11:11	13.74	3.206	14	Reliability
11/14/2023	20H-304	13:59	14:11	12.18	5.075	25	Reliability
11/14/2023	62N-411	17:54	18:12	18.3	7.93	26	Capital
11/14/2023	2H-411	9:56	10:13	17.22	2.296	8	Reliability
11/14/2023	113H-443	13:25	14:14	48.78	11.382	14	Reliability
11/14/2023	131H-423	10:00	10:15	14.94	1.494	6	Reliability

Date	Feeder	Start Time (24-hour clock)	Restore Time (24- hour clock)	Duration (Minutes)	Customer Hours of Interruption	Customers Interrupted	CEA Subcause
11/14/2023	99H-311	8:11	9:15	63.54	3.177	3	Capital
11/14/2023	99H-311	8:12	9:15	62.58	9.387	9	Capital
11/14/2023	2C-402	9:13	11:16	123.42	8.228	4	Capital
11/14/2023	22W-312	13:56	14:17	21	2.45	7	Reliability
11/14/2023	127H-411	12:04	12:19	15.24	0.508	2	Reliability
11/14/2023	82V-402	13:21	14:20	58.98	8.847	9	Reliability
11/14/2023	70W-313	9:36	11:20	104.16	1.736	1	Reliability
11/14/2023	20H-302	13:08	13:21	13.5	2.7	12	Reliability
11/14/2023	82V-402	10:34	14:21	226.56	11.328	3	Capital
11/14/2023	58H-421	10:56	11:21	25.32	3.798	9	Reliability
11/14/2023	103W-311	11:17	11:24	6.48	0.432	4	Reliability
11/14/2023	84W-301	9:11	9:25	13.8	0.92	4	Reliability
11/14/2023	84W-301	11:13	11:25	11.28	1.316	7	Reliability
11/14/2023	84W-301	14:18	14:25	6.48	0.648	6	Reliability
11/14/2023	84W-301	10:21	10:25	4.2	0.42	6	Reliability
11/14/2023	82V-402	15:55	16:25	30.12	3.012	6	Reliability
11/14/2023	113H-434	16:07	16:26	19.2	2.56	8	Reliability
11/14/2023	102W-312	15:18	15:27	9.54	0.636	4	Reliability
11/14/2023	22W-312	9:20	9:27	7.02	0.819	7	Reliability
11/14/2023	20H-303	10:02	10:28	26.7	3.56	8	Capital
11/14/2023	113H-434	10:23	10:28	4.32	0.432	6	Reliability
11/14/2023	20H-305	11:58	12:28	29.22	5.357	11	Reliability
11/14/2023	15S-301	12:22	12:30	7.98	1.33	10	Switching
11/14/2023	104H-413	9:25	9:30	5.7	1.425	15	Reliability
11/14/2023	82V-402	10:17	10:32	14.76	1.23	5	Reliability
11/14/2023	131H-423	12:13	12:34	20.94	1.745	5	Reliability
11/14/2023	113H-441	15:17	15:34	16.62	1.939	7	Reliability
11/14/2023	126H-311	10:27	12:34	127.2	16.96	8	Reliability
11/14/2023	101H-413	9:50	10:34	43.74	1.458	2	Reliability
11/14/2023	2H-411	10:11	13:36	205.32	54.752	16	Capital
11/14/2023	113H-434	16:45	17:36	50.52	8.42	10	Capital
11/14/2023	1C-411	9:48	10:36	48	7.2	9	Capital
11/14/2023	87H-311	14:14	14:37	22.68	2.646	7	Capital
11/14/2023	126H-313	13:05	13:38	33.48	3.906	7	Reliability
11/14/2023	55V-314	14:16	14:39	23.04	0.768	2	Capital
11/14/2023	40H-302	14:05	15:40	94.62	44.156	28	Reliability
11/14/2023	82V-423	13:09	14:40	91.62	6.108	4	Reliability
11/14/2023	103W-311	17:10	17:40	30.06	6.012	12	Reliability
11/14/2023	89W-303	10:25	10:40	14.28	1.666	7	Capital
11/14/2023	84W-301	9:30	9:40	9.12	0.608	4	Reliability
11/14/2023	84W-301	15:34	15:40	5.46	0.364	4	Capital
11/14/2023	96H-411	11:54	12:40	46.5	1.55	2	Capital
11/14/2023	70W-321	18:07	18:43	35.22	4.109	7	Capital
11/14/2023	22W-312	14:35	14:43	7.8	0.65	5	Reliability
11/14/2023	113H-434	8:36	8:43	7.2	1.44	12	Reliability
11/14/2023	23H-304	8:27	8:45	18	7.2	24	Reliability
11/14/2023	113H-441	17:34	17:47	12.72	1.484	7	Capital
11/14/2023	77V-301	9:10	10:48	97.2	38.88	24	Capital
11/14/2023	20H-305	9:37	9:49	12.36	2.266	11	Reliability
11/14/2023	104H-413	15:22	15:52	29.34	2.445	5	Reliability
11/14/2023	113H-434	7:41	7:52	10.98	1.464	8	Reliability
11/14/2023	77V-303	15:16	15:56	39.96	6.66	10	Capital
11/14/2023	23H-301	14:48	14:58	9.36	2.184	14	Capital

Date	Feeder	Start Time (24-hour clock)	Restore Time (24- hour clock)	Duration (Minutes)	Customer Hours of Interruption	Customers Interrupted	CEA Subcause
11/14/2023	131H-423	10:25	10:59	33.42	2.228	4	Reliability
11/14/2023	23H-304	14:26	14:59	33.36	13.344	24	Reliability
11/14/2023	88W-322	9:51	9:59	7.98	1.064	8	Reliability
11/15/2023	4C-441	8:56	16:02	426.72	71.12	10	Reliability
11/15/2023	84W-302	14:47	15:03	15.84	0.528	2	Capital
11/15/2023	101H-413	9:52	10:04	11.94	0.796	4	Capital
11/15/2023	84W-301	8:53	9:05	12.3	0.82	4	Reliability
11/15/2023	1V-443	12:58	13:05	6.54	0.545	5	Reliability
11/15/2023	82V-423	11:52	12:06	13.56	1.582	7	Capital
11/15/2023	82V-402	12:26	13:07	41.46	4.146	6	Capital
11/15/2023	113H-432	14:50	15:07	16.98	3.679	13	Reliability
11/15/2023	104H-411	10:59	12:07	68.58	28.575	25	Capital
11/15/2023	70W-321	9:39	10:09	30.42	5.577	11	Capital
11/15/2023	93V-311	10:15	11:11	56.34	16.902	18	Capital
11/15/2023	113H-433	12:55	13:11	16.74	4.185	15	Capital
11/15/2023	104H-423	9:55	10:11	16.14	4.842	18	Capital
11/15/2023	101H-413	8:03	8:12	9.9	3.63	22	Capital
11/15/2023	22C-404	10:09	16:12	362.58	6.043	1	Reliability
11/15/2023	70W-313	8:28	11:12	164.34	10.956	4	Capital
11/15/2023	104H-423	17:58	18:14	15.6	4.68	18	Capital
11/15/2023	18V-411	12:00	12:15	14.94	0.498	2	Capital
11/15/2023	102W-311	10:04	10:15	11.16	0.93	5	Capital
11/15/2023	56N-414	10:11	10:16	5.16	0.258	3	Capital
11/15/2023	126H-312	13:50	15:16	86.28	4.314	3	Capital
11/15/2023	15S-301	15:02	15:17	14.7	1.715	7	Reliability
11/15/2023	54H-302	10:07	10:18	10.14	1.859	11	Capital
11/15/2023	23H-304	9:22	10:19	57.06	19.02	20	Reliability
11/15/2023	20H-301	14:21	15:21	60.66	9.099	9	Capital
11/15/2023	70W-313	12:48	14:21	92.4	7.7	5	Reliability
11/15/2023	104H-431	8:54	9:23	28.38	12.771	27	Capital
11/15/2023	88W-323	13:54	14:24	29.16	2.43	5	Reliability
11/15/2023	129H-413	11:00	11:25	24.48	3.672	9	Capital
11/15/2023	40H-302	8:15	8:25	9.66	1.932	12	Capital
11/15/2023	131H-423	10:18	10:26	8.46	1.269	9	Capital
11/15/2023	101H-423	14:01	15:31	90.6	10.57	7	Reliability
11/15/2023	20H-301	8:06	9:32	86.28	2.876	2	Reliability
11/15/2023	111S-314	10:19	11:32	72.24	22.876	19	Capital
11/15/2023	70W-314	13:03	14:34	90.78	6.052	4	Capital
11/15/2023	40H-302	15:12	15:34	22.08	4.416	12	Reliability
11/15/2023	3S-403	10:09	10:35	25.86	1.293	3	Switching
11/15/2023	2H-413	15:59	16:36	37.02	3.085	5	Capital
11/15/2023	101H-413	14:02	14:37	34.5	12.65	22	Capital
11/15/2023	104H-441	18:23	18:39	15.24	3.302	13	Capital
11/15/2023	111S-314	8:29	8:40	11.64	1.746	9	Capital
11/15/2023	2C-402	12:14	14:41	147.48	14.748	6	Reliability
11/15/2023	82V-423	12:34	12:41	7.56	0.126	1	Capital
11/15/2023	88W-323	9:29	9:42	12.6	1.05	5	Capital
11/15/2023	88W-323	9:29	9:42	12.24	0.816	4	Capital
11/15/2023	99V-314	9:39	9:42	2.88	0.288	6	Capital
11/15/2023	113H-443	14:26	14:44	18.36	3.366	11	Capital
11/15/2023	6N-302	12:05	14:45	160.26	66.775	25	Capital
11/15/2023	23H-304	17:14	17:45	31.68	10.56	20	Capital
11/15/2023	101H-412	15:36	15:45	9.6	1.6	10	Capital

Date	Feeder	Start Time (24-hour clock)	Restore Time (24- hour clock)	Duration (Minutes)	Customer Hours of Interruption	Customers Interrupted	CEA Subcause
11/15/2023	70W-313	11:39	12:47	67.92	2.264	2	Reliability
11/15/2023	70W-313	8:25	9:50	84.48	4.224	3	Capital
11/15/2023	113H-443	7:38	7:52	14.1	2.585	11	Capital
11/15/2023	58H-421	13:32	13:54	22.08	2.208	6	Capital
11/15/2023	102W-311	14:57	15:54	57.42	4.785	5	Capital
11/15/2023	22C-404	9:27	9:55	28.14	0.469	1	Reliability
11/15/2023	11S-304	9:11	12:57	226.02	26.369	7	Capital
11/15/2023	56N-414	12:32	15:58	205.26	3.421	1	Reliability
11/15/2023	139H-414	12:45	12:58	12.54	1.463	7	Capital
11/15/2023	58H-421	9:51	9:58	6.96	1.044	9	Capital
11/16/2023	36W-304	14:46	15:00	13.86	0.693	3	Reliability
11/16/2023	20H-305	9:48	10:00	11.76	2.548	13	Capital
11/16/2023	4S-333	10:47	11:02	15.12	1.512	6	Capital
11/16/2023	50N-411	10:28	11:05	36.3	4.235	7	Capital
11/16/2023	57W-402	9:47	10:05	17.46	1.746	6	Capital
11/16/2023	15S-301	9:50	10:05	14.76	2.214	9	Reliability
11/16/2023	99H-311	14:46	15:06	20.64	4.472	13	Capital
11/16/2023	23H-304	12:43	13:07	24.36	6.496	16	Reliability
11/16/2023	137H-412	13:07	14:08	61.02	4.068	4	Capital
11/16/2023	67C-411	13:13	14:08	55.26	2.763	3	Reliability
11/16/2023	15S-301	17:02	17:10	8.1	1.215	9	Capital
11/16/2023	84W-302	9:50	10:10	19.92	2.324	7	Reliability
11/16/2023	101H-422	14:43	15:11	28.02	1.401	3	Capital
11/16/2023	99H-311	8:08	8:12	3.96	1.056	16	Capital
11/16/2023	2C-402	10:20	12:12	112.38	5.619	3	Reliability
11/16/2023	131H-422	9:28	10:12	44.4	2.22	3	Capital
11/16/2023	96H-411	10:24	11:13	49.2	4.1	5	Capital
11/16/2023	19W-312	15:58	16:14	15.3	1.53	6	Capital
11/16/2023	48H-302	10:09	10:15	6.54	28.013	257	Reliability
11/16/2023	3N-412	11:45	12:15	30	1.5	3	Reliability
11/16/2023	87H-312	10:51	12:16	85.02	8.502	6	Capital
11/16/2023	81S-306	11:53	16:16	263.22	39.483	9	Reliability
11/16/2023	2H-421	8:00	8:17	16.92	1.41	5	Capital
11/16/2023	4C-424	10:07	10:17	10.02	2.672	16	Capital
11/16/2023	70W-313	9:42	11:17	94.74	1.579	1	Capital
11/16/2023	127H-411	15:36	16:19	43.2	2.16	3	Capital
11/16/2023	2C-402	8:52	10:19	86.46	14.41	10	Capital
11/16/2023	99H-311	15:09	15:20	10.68	2.848	16	Capital
11/16/2023	20H-302	13:16	13:21	4.44	0.962	13	Capital
11/16/2023	70W-313	11:19	13:21	122.52	6.126	3	Reliability
11/16/2023	57W-401	14:52	15:21	29.16	0.972	2	Capital
11/16/2023	48H-301	11:00	12:27	86.76	237.144	164	Reliability
11/16/2023	2H-421	15:02	15:27	24.78	2.065	5	Capital
11/16/2023	22C-404	9:18	14:27	308.94	15.447	3	Reliability
11/16/2023	48H-301	10:59	12:28	89.34	23.824	16	Reliability
11/16/2023	99H-311	12:10	12:29	19.44	5.184	16	Reliability
11/16/2023	84W-301	10:45	11:30	44.34	3.695	5	Reliability
11/16/2023	81S-304	8:51	9:30	39.3	3.93	6	Capital
11/16/2023	101H-413	10:14	10:31	16.92	5.922	21	Capital
11/16/2023	63V-313	13:15	13:31	16.86	0.562	2	Capital
11/16/2023	16W-302	9:32	13:31	239.64	111.832	28	Reliability
11/16/2023	57W-402	13:19	13:32	13.32	1.332	6	Capital
11/16/2023	54H-304	11:10	11:35	25.56	8.094	19	Reliability

Date	Feeder	Start Time (24-hour clock)	Restore Time (24- hour clock)	Duration (Minutes)	Customer Hours of Interruption	Customers Interrupted	CEA Subcause
11/16/2023	108H-413	14:25	14:36	11.1	7.03	38	Capital
11/16/2023	20W-312	15:23	15:37	14.16	0.708	3	Capital
11/16/2023	4C-424	11:25	14:37	192.24	19.224	6	Reliability
11/16/2023	101H-411	10:32	10:37	5.34	0.356	4	Reliability
11/16/2023	20H-301	9:55	10:38	42.78	2.852	4	Capital
11/16/2023	84W-302	9:34	9:40	6.42	0.749	7	Reliability
11/16/2023	70W-313	8:36	9:41	65.1	2.17	2	Capital
11/16/2023	108H-413	8:27	8:42	14.4	9.12	38	Capital
11/16/2023	15S-302	17:22	17:43	20.58	6.174	18	Reliability
11/16/2023	82V-423	8:38	8:43	4.98	0.415	5	Capital
11/16/2023	58H-431	9:57	10:43	46.26	14.649	19	Reliability
11/16/2023	101H-422	11:08	11:44	36.24	1.812	3	Reliability
11/16/2023	103H-434	12:16	12:44	28.14	2.814	6	Reliability
11/16/2023	103H-434	9:46	10:44	57.96	2.898	3	Capital
11/16/2023	89W-302	9:49	10:44	54.78	9.13	10	Capital
11/16/2023	50N-411	16:20	16:45	25.26	3.368	8	Reliability
11/16/2023	54H-304	15:32	15:45	12.9	4.085	19	Capital
11/16/2023	84W-301	12:39	12:45	6.18	0.412	4	Reliability
11/16/2023	62N-416	11:40	11:45	4.5	0.075	1	Capital
11/16/2023	126H-311	15:42	16:46	63.42	3.171	3	Capital
11/16/2023	101H-413	16:21	16:50	29.16	10.206	21	Capital
11/16/2023	4C-432	14:23	14:50	26.46	6.615	15	Reliability
11/16/2023	131H-422	13:17	13:51	33.42	2.785	5	Capital
11/16/2023	23H-304	13:53	14:52	59.28	8.892	9	Reliability
11/16/2023	3S-403	13:18	14:53	95.46	11.137	7	Reliability
11/16/2023	54H-304	7:44	7:54	9.96	3.154	19	Capital
11/16/2023	20H-303	16:58	17:54	55.08	9.18	10	Capital
11/16/2023	48H-301	13:30	13:58	27.96	5.592	12	Capital
11/16/2023	20H-301	16:18	16:59	40.86	2.724	4	Capital
11/17/2023	82V-422	12:53	16:00	187.02	46.755	15	Capital
11/17/2023	137H-412	11:03	12:01	58.86	3.924	4	Reliability
11/17/2023	73W-411	14:40	17:01	140.4	336.96	144	Reliability
11/17/2023	3S-403	15:36	16:02	26.52	1.326	3	Reliability
11/17/2023	113H-444	8:38	9:04	26.16	2.616	6	Capital
11/17/2023	58H-431	12:46	13:08	21.84	3.64	10	Capital
11/17/2023	113H-432	10:01	10:10	9.42	2.826	18	Capital
11/17/2023	131H-422	15:33	17:11	97.68	8.14	5	Reliability
11/17/2023	23H-304	14:25	15:19	54.06	5.406	6	Capital
11/17/2023	62N-414	15:15	16:21	66.72	3.336	3	Capital
11/17/2023	87W-311	14:10	16:22	132.18	4.406	2	Capital
11/17/2023	58H-431	12:10	12:28	18.06	1.505	5	Capital
11/17/2023	82V-401	12:12	12:28	15.9	1.855	7	Customer Requested
11/17/2023	23H-304	9:09	9:30	21.36	4.628	13	Capital
11/17/2023	131H-422	8:26	8:31	5.34	0.089	1	Capital
11/17/2023	58H-431	10:20	10:33	13.32	2.22	10	Capital
11/17/2023	101H-411	9:25	9:33	8.16	1.632	12	Capital
11/17/2023	4C-430	12:31	12:35	4.32	0.288	4	Capital
11/17/2023	127H-411	9:27	10:36	69.12	9.216	8	Capital
11/17/2023	50W-412	11:57	12:36	39	1.3	2	Capital
11/17/2023	50N-415	17:20	17:40	19.92	1.992	6	Capital
11/17/2023	104H-433	15:21	15:40	18.72	4.056	13	Reliability
11/17/2023	104H-441	17:21	17:46	25.5	7.65	18	Capital
11/17/2023	56N-414	13:00	13:47	47.34	3.945	5	Capital

Date	Feeder	Start Time (24-hour clock)	Restore Time (24- hour clock)	Duration (Minutes)	Customer Hours of Interruption	Customers Interrupted	CEA Subcause
11/17/2023	23H-304	16:36	17:47	70.44	15.262	13	Capital
11/17/2023	99H-311	11:09	11:49	39.84	18.592	28	Reliability
11/17/2023	23H-301	9:41	9:50	9.12	1.672	11	Capital
11/17/2023	91W-411	4:45	4:51	5.52	112.976	1228	Planned Transmission
11/17/2023	70W-311	10:34	11:52	78.3	3.915	3	Capital
11/17/2023	101H-411	14:30	14:54	24.66	9.453	23	Reliability
11/17/2023	101H-421	10:48	10:55	7.32	0.61	5	Capital
11/17/2023	11S-304	14:32	14:56	24.3	3.24	8	Capital
11/17/2023	104H-413	17:45	21:56	250.86	79.439	19	Capital
11/17/2023	139H-414	13:48	13:56	7.92	0.66	5	Reliability
11/17/2023	139H-414	9:16	9:59	43.32	3.61	5	Capital
11/17/2023	22W-313	13:29	13:59	30.66	2.044	4	Reliability
11/18/2023	50W-412	8:04	9:02	57.72	21.164	22	Switching
11/18/2023	50V-402	9:53	10:06	13.5	5.625	25	Capital
11/18/2023	50N-410	12:58	13:31	33.48	2.79	5	Tree Trimming
11/18/2023	50V-401	13:25	13:33	7.56	0.126	1	Capital
11/18/2023	22N-401	7:32	7:41	9.24	1148.686	7459	Planned Transmission
11/19/2023	51V-301	6:08	7:08	59.58	18.867	19	Capital
11/19/2023	1H-424	22:55	3:34	279.12	1083.916	233	Capital
11/20/2023	111S-312	15:39	17:02	82.62	11.016	8	Capital
11/20/2023	104H-432	11:23	12:04	41.04	9.576	14	Capital
11/20/2023	88W-322	13:31	14:05	34.38	0.573	1	Capital
11/20/2023	104H-411	14:37	15:07	29.7	33.66	68	Capital
11/20/2023	87W-311	14:51	15:08	17.46	1.455	5	Capital
11/20/2023	21W-312	13:51	14:08	16.8	2.8	10	Reliability
11/20/2023	82V-402	10:00	10:09	8.82	0.441	3	Capital
11/20/2023	16W-301	13:00	13:10	9.9	0.99	6	Capital
11/20/2023	20H-302	16:37	17:10	32.34	5.929	11	Capital
11/20/2023	20H-305	9:55	10:10	15.78	3.156	12	Capital
11/20/2023	20H-305	9:46	10:13	27.48	2.29	5	Capital
11/20/2023	40H-302	8:47	9:13	26.16	6.104	14	Capital
11/20/2023	20H-305	14:51	15:13	22.08	2.944	8	Reliability
11/20/2023	20H-305	14:52	15:13	21.3	1.775	5	Reliability
11/20/2023	40H-302	12:54	13:13	19.44	4.536	14	Capital
11/20/2023	15S-303	0:57	1:13	16.86	2.81	10	Capital
11/20/2023	103W-311	10:10	10:15	4.56	0.684	9	Capital
11/20/2023	77V-401	15:11	15:16	5.94	0.891	9	Capital
11/20/2023	104H-423	14:13	15:16	62.34	10.39	10	Capital
11/20/2023	40H-302	16:03	16:17	13.62	2.27	10	Capital
11/20/2023	131H-422	9:41	11:17	95.82	9.582	6	Capital
11/20/2023	87H-312	9:55	14:17	261.24	17.416	4	Reliability
11/20/2023	127H-411	9:00	9:20	19.92	2.656	8	Capital
11/20/2023	20H-304	10:56	11:20	24.3	4.455	11	Capital
11/20/2023	103H-433	10:08	11:22	74.16	2.472	2	Capital
11/20/2023	102W-311	14:38	15:24	45.48	1.516	2	Capital
11/20/2023	104H-411	8:44	9:24	40.62	46.036	68	Capital
11/20/2023	16W-301	16:10	16:28	17.82	1.782	6	Reliability
11/20/2023	22V-313	18:15	18:28	13.68	1.14	5	Reliability
11/20/2023	2H-411	11:23	11:28	5.52	0.552	6	Capital
11/20/2023	20H-302	10:22	10:29	6.36	0.636	6	Capital
11/20/2023	70W-204	17:35	18:29	54.24	4.52	5	Capital
11/20/2023	99H-311	13:55	14:32	36.48	7.904	13	Capital
11/20/2023	79V-401	15:29	16:35	66.84	8.912	8	Capital

Date	Feeder	Start Time (24-hour clock)	Restore Time (24- hour clock)	Duration (Minutes)	Customer Hours of Interruption	Customers Interrupted	CEA Subcause
11/20/2023	104H-441	15:58	16:35	37.02	17.276	28	Capital
11/20/2023	20H-304	14:12	14:36	24.6	5.33	13	Capital
11/20/2023	87H-311	11:07	12:38	91.62	1.527	1	Capital
11/20/2023	131H-423	12:05	12:39	34.14	3.414	6	Capital
11/20/2023	131H-422	16:36	17:39	62.34	9.351	9	Capital
11/20/2023	103W-312	8:31	8:40	9.18	1.071	7	Reliability
11/20/2023	57W-401	14:33	15:42	68.76	3.438	3	Capital
11/20/2023	58H-421	14:54	15:43	49.5	6.6	8	Reliability
11/20/2023	91W-411	13:05	13:44	39.06	1.953	3	Reliability
11/20/2023	55V-323	9:16	13:45	269.22	22.435	5	Reliability
11/20/2023	15S-301	1:32	1:46	14.34	1.673	7	Capital
11/20/2023	20H-304	10:37	10:46	9.78	2.119	13	Capital
11/20/2023	104H-413	15:19	15:48	29.16	8.262	17	Capital
11/20/2023	82V-403	13:59	15:48	109.08	18.18	10	Capital
11/20/2023	104H-441	9:21	9:49	27.96	13.048	28	Capital
11/20/2023	104H-413	10:25	10:49	23.7	18.565	47	Capital
11/20/2023	113H-443	9:51	10:53	61.86	7.217	7	Capital
11/20/2023	59C-401	11:18	11:54	36.18	8.442	14	Tree Trimming
11/20/2023	2H-422	11:44	11:54	10.02	3.173	19	Capital
11/20/2023	82V-401	10:00	15:55	354.84	11.828	2	Reliability
11/20/2023	101H-413	13:37	13:55	17.46	2.037	7	Switching
11/20/2023	87W-311	9:47	9:55	7.44	0.62	5	Capital
11/20/2023	58H-421	10:33	10:59	25.62	3.416	8	Capital
11/20/2023	82V-402	10:43	10:59	15.96	1.33	5	Capital
11/21/2023	101H-421	14:51	15:01	9.72	0.81	5	Capital
11/21/2023	22C-404	10:58	12:01	63.48	4.232	4	Reliability
11/21/2023	63V-313	9:50	10:02	12.54	0.836	4	Capital
11/21/2023	58H-421	10:52	11:03	11.4	1.52	8	Capital
11/21/2023	62N-416	14:54	15:03	9.36	1.248	8	Capital
11/21/2023	104H-441	8:46	9:04	17.52	6.424	22	Capital
11/21/2023	129H-412	10:48	11:04	15.78	1.315	5	Reliability
11/21/2023	50V-401	8:44	9:05	21.36	6.408	18	Capital
11/21/2023	2H-413	16:08	17:06	58.26	5.826	6	Capital
11/21/2023	113H-441	13:35	14:06	30.96	8.772	17	Capital
11/21/2023	54H-302	16:36	17:09	32.46	6.492	12	Capital
11/21/2023	37N-414	12:39	13:09	30.06	7.515	15	Capital
11/21/2023	103W-311	10:03	10:10	6.36	0.742	7	Reliability
11/21/2023	113H-434	18:07	18:10	2.88	0.288	6	Customer Requested
11/21/2023	77V-302	13:36	14:10	33.84	5.64	10	Reliability
11/21/2023	101H-422	16:48	17:10	21.12	2.112	6	Reliability
11/21/2023	2H-413	8:58	9:10	11.88	1.188	6	Reliability
11/21/2023	54H-302	9:59	10:10	10.92	2.184	12	Capital
11/21/2023	104H-411	10:45	11:11	26.58	11.961	27	Reliability
11/21/2023	12V-304	8:05	8:15	10.08	2.016	12	Capital
11/21/2023	2C-402	8:52	11:15	142.86	80.954	34	Reliability
11/21/2023	104H-421	9:53	10:15	22.38	3.73	10	Capital
11/21/2023	87H-313	13:08	13:16	7.86	0.131	1	Reliability
11/21/2023	1V-443	11:25	16:19	294	63.7	13	Capital
11/21/2023	3S-302	13:55	16:19	143.58	26.323	11	Capital
11/21/2023	4N-312	19:05	19:20	14.7	1.715	7	Reliability
11/21/2023	113H-441	15:50	16:21	30.84	3.598	7	Reliability
11/21/2023	131H-423	13:02	13:22	20.34	1.695	5	Reliability
11/21/2023	113H-434	9:52	10:22	30.24	6.048	12	Capital

Date	Feeder	Start Time (24-hour clock)	Restore Time (24- hour clock)	Duration (Minutes)	Customer Hours of Interruption	Customers Interrupted	CEA Subcause
11/21/2023	70W-313	11:48	13:23	94.44	1.574	1	Capital
11/21/2023	2H-422	7:56	8:23	26.88	4.928	11	Capital
11/21/2023	87H-313	11:09	12:24	74.52	3.726	3	Reliability
11/21/2023	89W-304	12:38	13:24	46.98	3.132	4	Capital
11/21/2023	67C-411	12:18	14:25	127.56	17.008	8	Capital
11/21/2023	103W-312	13:19	13:25	5.46	0.728	8	Reliability
11/21/2023	22C-404	13:03	13:26	23.52	6.664	17	Capital
11/21/2023	103H-434	8:04	8:26	22.26	1.484	4	Capital
11/21/2023	63V-312	10:14	10:28	14.64	1.708	7	Capital
11/21/2023	57W-402	9:16	10:28	72.54	6.045	5	Capital
11/21/2023	101H-422	10:05	10:30	24.54	3.681	9	Reliability
11/21/2023	73W-411	17:16	18:30	74.46	6.205	5	Capital
11/21/2023	73W-411	17:17	18:30	72.48	1.208	1	Capital
11/21/2023	20H-305	14:04	14:31	27.06	4.059	9	Capital
11/21/2023	103H-434	14:19	14:31	12.18	0.812	4	Capital
11/21/2023	103W-311	9:29	9:31	1.5	0.05	2	Capital
11/21/2023	63V-312	18:26	19:32	66	7.7	7	Reliability
11/21/2023	104H-442	13:31	14:32	61.08	26.468	26	Capital
11/21/2023	104H-441	14:43	15:32	48.78	17.886	22	Capital
11/21/2023	113H-441	9:23	9:33	9.66	2.737	17	Capital
11/21/2023	113H-444	11:25	13:33	128.16	10.68	5	Capital
11/21/2023	50V-401	14:53	17:34	161.82	48.546	18	Capital
11/21/2023	20H-305	9:03	9:36	32.94	5.49	10	Capital
11/21/2023	139H-414	13:30	13:36	6.12	1.326	13	Capital
11/21/2023	3S-307	10:06	10:37	31.26	5.731	11	Capital
11/21/2023	139H-414	12:24	12:40	16.44	3.562	13	Capital
11/21/2023	48H-301	9:32	9:41	9.36	0.78	5	Reliability
11/21/2023	40H-401	8:29	8:43	13.38	2.23	10	Capital
11/21/2023	51V-301	9:05	11:44	158.76	2.646	1	Capital
11/21/2023	73W-411	14:19	14:44	25.2	2.52	6	Capital
11/21/2023	67C-411	10:36	13:44	188.1	413.82	132	Capital
11/21/2023	82V-402	14:16	14:45	28.86	2.405	5	Reliability
11/21/2023	101H-421	15:27	15:45	17.64	0.882	3	Reliability
11/21/2023	2C-402	12:20	15:48	208.14	6.938	2	Capital
11/21/2023	137H-413	7:37	7:48	10.68	1.424	8	Reliability
11/21/2023	113H-433	12:38	12:48	9.96	0.664	4	Reliability
11/21/2023	83V-302	13:33	15:52	138.84	57.85	25	Reliability
11/21/2023	70W-313	10:27	10:54	26.94	3.143	7	Reliability
11/21/2023	36V-302	16:35	16:57	22.32	4.092	11	Reliability
11/21/2023	40H-401	11:45	11:57	12.48	2.08	10	Reliability
11/21/2023	23H-304	13:29	13:58	28.62	5.247	11	Reliability
11/21/2023	2H-413	14:57	15:59	61.74	9.261	9	Reliability
11/22/2023	137H-413	9:39	10:00	20.58	3.43	10	Reliability
11/22/2023	113H-443	10:52	11:00	7.92	0.924	7	Capital
11/22/2023	23H-304	14:49	15:01	12	2	10	Reliability
11/22/2023	76V-301	12:40	13:05	24.42	1.221	3	Capital
11/22/2023	4C-441	8:53	11:05	131.34	48.158	22	Capital
11/22/2023	3S-309	11:14	12:11	56.22	13.118	14	Reliability
11/22/2023	23W-302	10:23	11:12	48.6	5.67	7	Reliability
11/22/2023	23W-302	10:24	11:12	48.36	4.836	6	Reliability
11/22/2023	129H-412	9:58	10:12	14.1	2.115	9	Reliability
11/22/2023	54H-302	13:59	14:12	13.14	2.847	13	Reliability
11/22/2023	79V-401	10:48	12:14	86.04	7.17	5	Capital

Date	Feeder	Start Time (24-hour clock)	Restore Time (24- hour clock)	Duration (Minutes)	Customer Hours of Interruption	Customers Interrupted	CEA Subcause
11/22/2023	11S-412	9:54	10:15	21	1.75	5	Capital
11/22/2023	48H-301	9:34	10:19	45.66	25.874	34	Capital
11/22/2023	82V-422	13:55	14:19	23.88	7.96	20	Capital
11/22/2023	48H-302	9:16	9:22	6.48	1.296	12	Capital
11/22/2023	113H-433	12:01	16:23	261.78	52.356	12	Capital
11/22/2023	40H-304	15:07	15:24	17.7	4.72	16	Capital
11/22/2023	12V-304	15:26	16:24	58.62	11.724	12	Capital
11/22/2023	54H-302	14:17	16:25	128.52	27.846	13	Capital
11/22/2023	70W-313	14:25	16:25	120.06	14.007	7	Reliability
11/22/2023	70W-204	14:55	16:25	90.18	9.018	6	Reliability
11/22/2023	4C-441	12:06	15:27	201.3	33.55	10	Capital
11/22/2023	82V-401	11:51	12:27	35.46	4.137	7	Capital
11/22/2023	48H-302	12:14	12:28	13.98	2.796	12	Capital
11/22/2023	65V-302	10:15	11:29	73.8	17.22	14	Capital
11/22/2023	2H-424	13:38	14:29	50.58	21.918	26	Capital
11/22/2023	3S-309	13:51	15:29	97.86	39.144	24	Capital
11/22/2023	2H-424	8:16	8:32	16.14	6.994	26	Capital
11/22/2023	23W-301	11:57	12:32	34.86	1.162	2	Reliability
11/22/2023	65V-303	12:16	12:34	18.72	1.872	6	Reliability
11/22/2023	48H-301	14:10	14:35	25.74	5.577	13	Capital
11/22/2023	104H-411	14:15	14:39	24.6	6.15	15	Capital
11/22/2023	129H-412	9:34	9:43	9.48	1.106	7	Reliability
11/22/2023	40H-304	8:28	8:46	18.36	4.896	16	Reliability
11/22/2023	54H-304	13:24	13:47	23.4	4.29	11	Capital
11/22/2023	12V-304	16:47	17:48	60.24	6.024	6	Capital
11/22/2023	113H-443	14:31	14:49	18.12	4.832	16	Capital
11/22/2023	82V-422	8:38	8:51	13.38	4.46	20	Capital
11/22/2023	56N-414	14:37	14:52	15.48	0.516	2	Capital
11/22/2023	40H-401	9:39	9:52	13.14	1.533	7	Capital
11/22/2023	64V-301	14:39	14:54	14.7	1.715	7	Capital
11/22/2023	13V-303	10:27	10:56	28.56	0.952	2	Reliability
11/22/2023	58H-421	14:46	15:56	70.26	9.368	8	Capital
11/22/2023	126H-312	12:50	13:56	65.94	5.495	5	Capital
11/22/2023	64V-301	9:36	9:57	21.72	2.534	7	Capital
11/22/2023	77V-401	11:24	11:58	34.38	1.146	2	Capital
11/23/2023	87H-313	14:38	15:01	22.5	1.875	5	Capital
11/23/2023	101H-423	7:35	8:03	27.36	5.472	12	Capital
11/23/2023	113H-444	18:41	19:03	22.2	2.96	8	Capital
11/23/2023	2H-421	13:51	15:03	72	16.8	14	Capital
11/23/2023	88W-312	15:41	16:04	23.04	1.536	4	Reliability
11/23/2023	113H-441	10:02	10:05	2.88	0.384	8	Capital
11/23/2023	104H-423	8:48	9:05	16.86	5.62	20	Capital
11/23/2023	87H-311	11:49	12:05	16.14	2.421	9	Capital
11/23/2023	21W-312	8:54	9:06	12.24	0.816	4	Reliability
11/23/2023	82V-402	9:53	10:10	16.08	1.34	5	Reliability
11/23/2023	48H-302	16:52	17:11	19.68	3.936	12	Capital
11/23/2023	48W-204	10:08	12:13	125.28	6.264	3	Reliability
11/23/2023	55V-314	9:10	10:13	63.3	5.275	5	Capital
11/23/2023	48H-302	11:42	12:14	32.4	6.48	12	Reliability
11/23/2023	131H-422	11:56	12:15	18.9	2.205	7	Reliability
11/23/2023	126H-312	15:59	16:17	18.12	4.832	16	Capital
11/23/2023	131H-422	11:01	12:19	77.52	7.752	6	Reliability
11/23/2023	113H-441	18:07	18:19	12.3	1.845	9	Capital

Date	Feeder	Start Time (24-hour clock)	Restore Time (24- hour clock)	Duration (Minutes)	Customer Hours of Interruption	Customers Interrupted	CEA Subcause
11/23/2023	129H-413	10:55	11:23	28.44	3.318	7	Capital
11/23/2023	2H-421	7:55	8:27	31.86	7.434	14	Capital
11/23/2023	126H-312	9:51	13:28	217.44	7.248	2	Capital
11/23/2023	22W-312	15:55	16:28	32.82	10.393	19	Reliability
11/23/2023	48H-301	13:08	13:29	20.82	2.776	8	Capital
11/23/2023	131H-422	12:36	13:29	53.28	3.552	4	Capital
11/23/2023	108H-413	14:40	15:29	48.12	9.624	12	Capital
11/23/2023	101H-421	9:12	9:30	18.3	1.83	6	Capital
11/23/2023	129H-412	8:16	8:30	13.98	1.631	7	Reliability
11/23/2023	2H-411	8:22	8:30	8.46	1.128	8	Reliability
11/23/2023	127H-411	13:44	14:31	46.68	2.334	3	Capital
11/23/2023	88W-312	9:06	9:33	26.88	4.48	10	Capital
11/23/2023	4N-312	12:10	12:35	24.72	3.296	8	Capital
11/23/2023	93V-313	12:02	12:36	34.44	1.148	2	Capital
11/23/2023	104H-423	15:16	15:37	20.7	6.555	19	Reliability
11/23/2023	54H-304	13:17	13:37	19.68	2.624	8	Capital
11/23/2023	54H-303	12:24	12:37	12.54	2.09	10	Capital
11/23/2023	21W-312	14:52	15:38	46.14	3.076	4	Reliability
11/23/2023	104H-423	12:53	13:38	44.46	11.115	15	Capital
11/23/2023	4S-321	13:53	14:39	46.8	6.24	8	Capital
11/23/2023	88W-312	9:25	9:44	19.08	1.272	4	Reliability
11/23/2023	127H-411	14:53	15:44	51.06	1.702	2	Reliability
11/23/2023	2H-411	14:18	14:46	28.02	3.736	8	Capital
11/23/2023	101H-413	14:27	14:46	18.6	3.41	11	Capital
11/23/2023	88W-312	9:43	9:47	4.2	0.7	10	Capital
11/23/2023	76V-301	9:06	10:48	101.82	15.273	9	Capital
11/23/2023	113H-443	17:33	17:48	14.4	2.16	9	Capital
11/23/2023	48H-301	7:37	7:48	11.1	1.48	8	Reliability
11/23/2023	2H-413	14:03	14:49	45.96	3.064	4	Capital
11/23/2023	101H-423	15:34	15:50	16.38	3.276	12	Capital
11/23/2023	113H-433	10:32	10:52	19.62	0.981	3	Capital
11/23/2023	137H-411	9:48	10:52	63.66	7.427	7	Reliability
11/23/2023	70W-313	11:49	12:53	64.14	3.207	3	Reliability
11/23/2023	50W-411	12:14	15:55	220.92	29.456	8	Capital
11/23/2023	88W-312	16:06	17:57	111.24	7.416	4	Reliability
11/23/2023	40H-304	12:31	13:57	85.44	27.056	19	Capital
11/23/2023	101H-413	8:56	9:57	61.08	10.18	10	Capital
11/23/2023	113H-441	9:51	9:59	7.5	1.125	9	Reliability
11/24/2023	79V-402	17:46	18:01	14.76	3.69	15	Capital
11/24/2023	89W-303	9:47	10:01	14.28	0.476	2	Capital
11/24/2023	37W-202	3:01	3:03	2.76	21.528	468	Planned Transmission
11/24/2023	36W-301	3:01	3:03	2.76	54.418	1183	Planned Transmission
11/24/2023	104H-431	10:48	11:03	15.42	6.939	27	Capital
11/24/2023	99V-312	14:22	17:05	162.78	10.852	4	Capital
11/24/2023	20H-305	13:55	14:05	9.96	1.66	10	Reliability
11/24/2023	101H-423	8:54	10:08	73.92	32.032	26	Capital
11/24/2023	104H-441	14:39	15:09	30.12	9.036	18	Capital
11/24/2023	40H-302	10:54	11:09	14.64	1.708	7	Capital
11/24/2023	20H-302	8:59	9:09	10.2	2.21	13	Capital
11/24/2023	20H-303	10:00	10:10	10.08	2.184	13	Reliability
11/24/2023	1H-419	7:13	8:10	56.76	6.622	7	Capital
11/24/2023	101H-421	8:07	8:11	3.84	0.256	4	Capital
11/24/2023	2H-411	13:40	14:11	30.66	4.088	8	Capital

Date	Feeder	Start Time (24-hour clock)	Restore Time (24- hour clock)	Duration (Minutes)	Customer Hours of Interruption	Customers Interrupted	CEA Subcause
11/24/2023	50N-410	9:51	12:18	146.28	19.504	8	Capital
11/24/2023	11S-305	9:59	10:19	19.62	1.308	4	Capital
11/24/2023	113H-441	9:57	10:21	24.36	2.842	7	Capital
11/24/2023	46W-303	3:01	5:22	141.18	2922.426	1242	Planned Transmission
11/24/2023	126H-313	13:05	13:22	17.58	2.93	10	Capital
11/24/2023	127H-411	12:28	13:22	54.66	9.11	10	Capital
11/24/2023	3S-307	9:18	9:24	6.18	0.618	6	Capital
11/24/2023	20H-303	10:13	10:25	11.34	3.591	19	Reliability
11/24/2023	131H-422	10:06	10:26	20.22	2.022	6	Capital
11/24/2023	57W-401	14:01	14:27	26.4	1.32	3	Capital
11/24/2023	57S-401	9:43	10:27	44.52	10.388	14	Capital
11/24/2023	50N-415	14:14	14:28	13.5	1.575	7	Capital
11/24/2023	82V-422	14:04	14:30	25.26	1.263	3	Capital
11/24/2023	1H-415	13:47	14:31	43.44	60.816	84	Capital
11/24/2023	101H-423	15:19	16:33	74.46	7.446	6	Capital
11/24/2023	20H-305	14:27	14:35	7.56	0.63	5	Reliability
11/24/2023	139H-414	9:27	10:35	68.1	2.27	2	Reliability
11/24/2023	20H-302	14:29	14:37	8.22	0.137	1	Capital
11/24/2023	48H-301	10:33	13:37	183.42	24.456	8	Capital
11/24/2023	1H-454	11:31	11:39	8.16	6.936	51	Capital
11/24/2023	104H-413	13:19	13:40	20.1	4.02	12	Capital
11/24/2023	50V-402	14:32	14:40	7.32	0.854	7	Capital
11/24/2023	36V-302	10:44	14:40	235.32	50.986	13	Capital
11/24/2023	55V-314	11:33	13:41	127.62	14.889	7	Capital
11/24/2023	70W-311	13:07	14:45	97.98	3.266	2	Capital
11/24/2023	104H-423	15:14	15:45	31.62	5.27	10	Capital
11/24/2023	20H-305	13:37	13:45	7.68	0.64	5	Reliability
11/24/2023	131H-423	8:54	14:45	351.18	17.559	3	Capital
11/24/2023	57S-401	13:09	14:48	98.52	22.988	14	Reliability
11/24/2023	57S-401	10:28	14:48	260.4	34.72	8	Capital
11/24/2023	20H-302	13:20	13:50	30.96	8.256	16	Reliability
11/24/2023	113H-434	12:05	13:52	107.76	14.368	8	Capital
11/24/2023	22C-403	11:29	11:52	22.68	60.48	160	Reliability
11/24/2023	73W-412	14:40	14:55	14.46	0.964	4	Capital
11/24/2023	20H-305	10:49	10:55	5.46	0.819	9	Reliability
11/24/2023	88W-312	13:23	13:56	33.3	6.105	11	Reliability
11/24/2023	50N-412	13:45	13:57	12.18	0.609	3	Capital
11/24/2023	4S-333	10:39	10:59	20.82	6.94	20	Capital
11/25/2023	129H-412	14:12	15:05	53.04	2.652	3	Reliability
11/25/2023	1H-403	7:57	12:10	252.96	3402.312	807	Switching
11/25/2023	1H-405	7:57	8:13	16.38	30.576	112	Switching
11/25/2023	55V-323	14:02	14:18	16.68	3.058	11	Capital
11/25/2023	1H-403	7:57	16:23	505.92	33.728	4	Switching
11/25/2023	20H-306	18:29	19:34	65.28	10.88	10	Capital
11/25/2023	1N-402	9:57	10:38	40.32	0.672	1	Tree Trimming
11/25/2023	113H-434	21:09	21:53	44.34	10.346	14	Capital
11/25/2023	1H-405	7:57	11:54	237.36	23.736	6	Switching
11/25/2023	81S-301	13:21	15:56	154.38	15.438	6	Reliability
11/26/2023	50N-412	10:50	11:07	16.5	1.925	7	Reliability
11/26/2023	104H-421	10:15	11:11	56.16	12.168	13	Capital
11/26/2023	1H-427	13:22	23:13	591.24	3478.462	353	Reliability
11/26/2023	1C-411	10:07	15:21	313.92	1883.52	360	Capital
11/26/2023	1C-411	10:06	15:22	315.9	26.325	5	Capital

Date	Feeder	Start Time (24-hour clock)	Restore Time (24- hour clock)	Duration (Minutes)	Customer Hours of Interruption	Customers Interrupted	CEA Subcause
11/26/2023	1C-411	10:07	15:22	314.52	131.05	25	Capital
11/26/2023	63V-311	10:53	11:26	33.3	4.995	9	Capital
11/26/2023	3S-307	15:29	16:33	64.38	9.657	9	Reliability
11/26/2023	62N-414	16:42	17:35	53.16	12.404	14	Capital
11/26/2023	101H-413	9:19	10:36	76.44	2.548	2	Capital
11/26/2023	11S-412	9:05	9:38	32.76	6.006	11	Reliability
11/26/2023	73W-411	14:34	15:42	67.44	4.496	4	Capital
11/26/2023	73W-411	14:35	15:42	67.08	5.59	5	Capital
11/26/2023	40H-302	10:39	15:42	303.12	90.936	18	Reliability
11/26/2023	73W-411	16:31	16:48	17.52	1.168	4	Reliability
11/26/2023	1H-415	12:08	12:49	41.16	12.348	18	Capital
11/26/2023	50N-412	9:42	10:51	68.7	14.885	13	Reliability
11/27/2023	70W-321	10:04	10:11	7.26	0.968	8	Reliability
11/27/2023	50W-412	13:27	14:13	46.08	3.072	4	Reliability
11/27/2023	131H-422	12:01	12:14	12.54	0.627	3	Reliability
11/27/2023	2C-402	11:31	13:15	104.7	5.235	3	Reliability
11/27/2023	87W-311	8:26	10:16	109.98	318.942	174	Capital
11/27/2023	129H-412	9:56	10:17	21.12	2.112	6	Capital
11/27/2023	87W-311	9:04	11:19	135.06	4.502	2	Capital
11/27/2023	113H-433	8:08	9:25	76.98	7.698	6	Reliability
11/27/2023	58C-403	14:29	14:33	3.72	1.798	29	Capital
11/27/2023	87W-311	9:06	14:36	329.64	32.964	6	Capital
11/27/2023	56N-401	10:28	10:54	25.98	3.031	7	Capital
11/27/2023	103H-432	9:47	10:58	70.74	149.733	127	Capital
11/28/2023	82V-422	8:47	11:02	135.78	33.945	15	Reliability
11/28/2023	113H-441	10:40	17:10	390	26	4	Capital
11/28/2023	4N-312	12:12	13:22	70.56	8.232	7	Capital
11/28/2023	2H-422	8:14	8:25	11.1	2.775	15	Reliability
11/28/2023	104H-433	10:03	14:30	266.64	53.328	12	Capital
11/28/2023	2H-422	13:42	14:31	48.6	12.15	15	Capital
11/28/2023	20H-306	8:59	9:38	39.06	7.161	11	Capital
11/28/2023	70W-311	11:45	12:39	54.06	3.604	4	Reliability
11/28/2023	76V-301	9:04	14:41	337.08	78.652	14	Capital
11/28/2023	59C-402	8:32	8:44	12.18	0.406	2	Switching
11/28/2023	103W-311	9:52	10:46	53.52	7.136	8	Reliability
11/28/2023	22C-404	13:15	13:50	34.8	5.8	10	Capital
11/28/2023	99V-314	9:07	11:57	170.34	363.392	128	Capital
11/28/2023	57S-401	9:56	13:57	241.86	36.279	9	Switching
11/29/2023	2H-411	7:43	8:00	17.16	1.43	5	Capital
11/29/2023	101H-422	9:28	10:05	37.02	3.085	5	Capital
11/29/2023	127H-411	10:08	10:19	11.82	0.394	2	Capital
11/29/2023	2H-413	8:48	9:24	35.64	6.534	11	Capital
11/29/2023	70W-322	15:12	15:34	21.9	9.855	27	Capital
11/29/2023	58C-405	10:03	12:35	151.98	5.066	2	Capital
11/29/2023	22C-402	12:40	14:35	114.84	7.656	4	Capital
11/29/2023	1H-454	9:25	9:42	16.98	11.32	40	Capital
11/29/2023	2H-413	8:36	8:47	11.52	1.536	8	Capital
11/29/2023	1H-403	20:03	22:49	166.32	8.316	3	Reliability
11/29/2023	12V-303	12:48	13:49	60.72	4.048	4	Capital
11/29/2023	12V-303	12:49	13:49	60.84	1.014	1	Capital
11/30/2023	12V-303	17:19	18:00	41.4	3.45	5	Capital
11/30/2023	82V-423	9:01	9:20	18.6	1.55	5	Capital
11/30/2023	103H-432	11:09	11:22	12.72	0.212	1	Capital

Date	Feeder	Start Time (24-hour clock)	Restore Time (24- hour clock)	Duration (Minutes)	Customer Hours of Interruption	Customers Interrupted	CEA Subcause
11/30/2023	127H-411	11:11	15:22	250.98	12.549	3	Capital
11/30/2023	70W-311	7:58	9:27	89.4	4.47	3	Capital
11/30/2023	15N-404	12:17	14:39	142.14	4.738	2	Capital
11/30/2023	2C-402	8:02	12:41	279.72	181.818	39	Capital
11/30/2023	1N-403	10:27	11:41	73.56	7.356	6	Capital
11/30/2023	16N-301	12:47	13:42	54.12	0.902	1	Capital
12/1/2023	2H-411	12:12	14:00	108.42	25.298	14	Reliability
12/1/2023	20H-302	10:32	12:09	97.26	32.42	20	Reliability
12/1/2023	137H-413	9:54	10:13	18.6	2.17	7	Reliability
12/1/2023	104H-433	10:03	10:24	20.28	2.028	6	Reliability
12/1/2023	L-3202	10:47	14:30	223.44	33.516	9	Planned Transmission
12/1/2023	88W-312	13:08	13:45	37.2	4.96	8	Capital
12/2/2023	19C-204	22:02	0:56	173.76	1358.224	469	Capital
12/3/2023	23H-304	7:19	8:01	42	11.2	16	Reliability
12/4/2023	2H-411	14:24	14:30	5.76	386.592	4027	Switching
12/5/2023	4C-441	8:13	10:14	121.26	60.63	30	Reliability
12/5/2023	129H-413	16:02	18:19	136.32	9.088	4	Capital
12/6/2023	2C-402	9:57	13:01	184.56	12.304	4	Capital
12/6/2023	101H-421	8:33	11:06	153	12.75	5	Capital
12/6/2023	74N-411	13:12	14:07	54.96	3.664	4	Capital
12/6/2023	4C-441	14:35	16:08	92.28	10.766	7	Reliability
12/6/2023	74N-412	11:09	11:15	5.46	27.118	298	Reliability
12/6/2023	70W-313	12:57	14:21	83.46	8.346	6	Reliability
12/6/2023	4N-311	13:03	13:24	21.24	33.276	94	Capital
12/6/2023	62N-413	5:18	5:30	11.76	0.196	1	Switching
12/6/2023	4S-322	13:14	13:32	17.58	7.325	25	Capital
12/6/2023	70W-313	10:31	12:32	120.96	6.048	3	Capital
12/6/2023	3S-309	12:18	14:35	137.16	18.288	8	Reliability
12/6/2023	59C-402	10:21	13:53	211.44	42.288	12	Capital
12/7/2023	70W-321	12:12	14:07	115.02	28.755	15	Reliability
12/7/2023	59C-402	9:35	13:08	212.52	49.588	14	Reliability
12/7/2023	54H-301	17:11	17:22	10.68	2.492	14	Reliability
12/7/2023	4C-441	9:13	12:24	191.58	22.351	7	Reliability
12/7/2023	40H-302	15:04	16:29	84.3	5.62	4	Reliability
12/7/2023	22N-402	13:11	15:33	141.96	35.49	15	Reliability
12/7/2023	70W-313	7:49	9:34	104.7	6.98	4	Reliability
12/7/2023	12V-303	9:53	13:42	229.32	11.466	3	Capital
12/7/2023	131H-423	14:10	14:51	41.04	8.892	13	Reliability
12/7/2023	70W-313	9:42	10:54	71.4	5.95	5	Reliability
12/7/2023	7N-301	10:40	10:59	18.54	1.236	4	Reliability
12/8/2023	103W-311	11:02	13:25	143.58	741.83	310	Capital
12/8/2023	30N-411	10:55	11:53	58.02	1.934	2	Reliability
12/9/2023	93V-313	12:15	14:25	130.8	4.36	2	Capital
12/9/2023	62N-415	9:42	11:57	135.48	2230.904	988	Reliability
12/10/2023	50N-412	9:04	9:11	6.84	35.796	314	Reliability
12/10/2023	50N-412	9:04	12:16	192.36	913.71	285	Reliability
12/12/2023	108H-413	16:26	17:32	65.88	111.996	102	Switching
12/12/2023	22N-401	16:31	16:34	3	372.75	7455	Planned Transmission
12/12/2023	62N-412	9:41	9:55	13.8	239.2	1040	Switching
12/13/2023	73W-411	4:50	13:00	489.9	236.785	29	Switching
12/13/2023	4S-322	12:58	14:14	75.72	31.55	25	Reliability
12/13/2023	113H-434	8:50	9:20	29.22	4.383	9	Switching
12/13/2023	23H-302	11:58	12:31	32.64	2.72	5	Reliability

Date	Feeder	Start Time (24-hour clock)	Restore Time (24- hour clock)	Duration (Minutes)	Customer Hours of Interruption	Customers Interrupted	CEA Subcause
12/13/2023	70V-311	10:42	12:38	116.58	40.803	21	Switching
12/14/2023	4C-424	1:23	12:00	636.36	233.332	22	Switching
12/14/2023	101H-413	12:22	14:28	125.52	20.92	10	Switching
12/14/2023	73W-411	4:42	11:32	409.2	54.56	8	Switching
12/14/2023	6N-302	9:56	10:34	37.74	3.145	5	Reliability
12/14/2023	89W-303	12:45	13:38	52.56	9.636	11	Switching
12/14/2023	89W-303	12:30	12:44	14.22	0.948	4	Switching
12/15/2023	59C-403	17:08	18:03	55.08	13.77	15	Reliability
12/15/2023	93V-313	22:07	0:04	117.42	11.742	6	Switching
12/15/2023	87H-313	11:45	12:04	18.84	2.826	9	Reliability
12/15/2023	113H-443	10:37	14:10	213.48	113.856	32	Reliability
12/15/2023	67C-411	10:38	13:22	164.28	8.214	3	Reliability
12/15/2023	82V-423	11:28	12:34	66.24	3.312	3	Capital
12/17/2023	4N-312	13:12	14:05	52.86	3.524	4	Reliability
12/17/2023	65V-303	9:10	11:17	127.02	74.095	35	Reliability
12/17/2023	L-3202	10:20	11:41	80.94	12.141	9	Reliability
12/18/2023	93V-311	10:01	10:22	21	399.7	1142	Reliability
12/19/2023	57S-401	14:00	14:07	6.48	449.172	4159	Planned Transmission
12/20/2023	3S-307	9:30	10:05	34.5	5.75	10	Capital
12/20/2023	56N-414	11:54	17:26	332.4	99.72	18	Capital
12/20/2023	50N-412	10:13	10:50	36.66	45.214	74	Tree Trimming
12/20/2023	4C-441	15:03	15:54	50.4	1876.56	2234	Switching
12/21/2023	13V-303	18:17	8:46	868.5	14.475	1	Switching
12/21/2023	23H-303	9:23	10:54	91.44	3712.464	2436	Switching
12/22/2023	85S-401	3:29	6:01	151.98	303.96	120	Switching
12/23/2023	2C-402	12:43	14:00	76.74	15.348	12	Switching
12/27/2023	103W-312	10:54	12:31	97.38	201.252	124	Reliability
12/27/2023	65V-302	12:43	15:54	190.92	15.91	5	Reliability
12/28/2023	57S-401	0:00	0:02	1.8	124.71	4157	Planned Transmission
12/28/2023	62N-411	14:22	16:06	104.1	15.615	9	Reliability
12/28/2023	50V-402	9:25	15:06	340.62	5.677	1	Reliability
12/29/2023	1N-404	12:02	13:00	57.54	11.508	12	Switching
12/29/2023	87H-313	11:26	12:24	58.08	3.872	4	Capital
12/30/2023	104H-421	5:04	6:40	96.42	4698.868	2924	Switching
12/30/2023	1N-405	11:26	11:52	26.46	3.087	7	Tree Trimming

Appendix L

Percentage of Customers Restored Within 48 Hours

Major Event Days

Date (YYYY-MM-DD)	Number of Customers Restored in First 48 Hours	Percentage of Customers Restored in First 48 Hours
2017-02-13	51,484	97.61
2017-03-14	44,683	100.00
2017-11-23	44,271	99.99
2017-12-26	38,249	99.64
2018-01-05	181,079	100.00
2018-01-31	36,018	100.00
2018-03-08	67,053	100.00
2018-03-13	101,372	99.30
2018-03-14	78,573	99.98
2018-11-03	54,218	99.62
2019-07-21	55,177	100.00
2019-09-09	52,662	79.95
2019-09-10	44,337	91.40
2019-09-11	15,588	86.70
2019-11-28	65,408	99.51
2019-12-10	106,801	100.00
2020-02-07	100,039	95.78
2020-02-08	41,652	99.56
2020-02-27	72,874	100.00
2022/07/01	170,993	99.09
2022/08/01	43,200	100.00
2022/01/14	22,619	99.92
2022/01/15	90,181	99.57
2022/02/03	40,551	100.00
2022/02/04	87,979	94.19
2022/02/05	86,366	93.88
2022/02/18	112,679	100.00
2022/09/26	26,069	86.39
2022/09/27	16,047	74.88
2022/09/28	15,443	77.53
2022/09/29	24,370	90.20
2022/12/01	115,779	99.97
2022/12/13	46,228	95.16
2022/12/23	81,302	100.00
2022/12/24	58,036	100.00
2023/01/26	81,868	99.99

Date (YYYY-MM-DD)	Number of Customers Restored in First 48 Hours	Percentage of Customers Restored in First 48 Hours
2023/02/04	109,424	100.00
2023/07/21	30,645	99.49
2023/07/22	95,706	99.42
2023/09/17	45,639	94.87
2023/12/11	132,148	98.67
2023/12/18	92,057	97.26
2023/12/19	52,470	99.72
2023/12/21	99,092	99.88
Average		96.57
Standard Deviation		6.23
Average - Standard Deviation		90.34
2023 Target		91.98
2024 Target		**91.98**

Extreme Event Days

Date (YYYY-MM-DD)	Number of Customers Restored in First 48 Hours	Percentage of Customers Restored in First 48 Hours
2017-12-25	180,396	98.41
2018-01-04	231,445	99.88
2018-11-29	362,453	99.90
2019-09-07	319,988	79.72
2019-09-08	50,778	72.39
2022/09/23	113,932	65.42
2022/09/24	222,526	60.98
2022/09/25	52,439	82.67
2023/09/16	421,550	96.40
Average		83.97
Standard Deviation		14.52
Average - Standard Deviation		69.46
2023 Target		78.38
2024 Target		**78.38**

Significant Event Day (Following a Major or Extreme Event Day)

Date (YYYY-MM-DD)	Number of Customers Restored in First 48 Hours	Percentage of Customers Restored in First 48 Hours
2017/03/15	32,482	100.00
2018/03/09	30,365	99.95
2018/11/04	26,346	100.00
2019/09/12	10,780	91.77
2019/11/29	24,785	99.95
2022/09/30	10,654	85.48
Average		96.19
Standard Deviation		5.65
Average - Standard Deviation		90.54
2023 Target		95.05
2024 Target		**95.05**

Appendix M

Summary of Performance Standards Results by Category

1. Reliability Standards 2023 Results

Standard	Target	2023 Result	Outcome
SAIDI	≤4.29	5.21	Not Achieved
SAIFI	≤2.05	2.18	Not Achieved
CKAIDI	≤16.98	22C-402: 8.11	Achieved
		11S-411: 16.87	Achieved
CKAIFI	≤5.81	22C-402: 2.97	Achieved
		11S-411: 5.32	Achieved
		62N-413: 4.77	Achieved

2. Customer Service Response Standards 2023 Results

Standard	Target	2023 Result	Outcome
Regular Business Call Answer Rate	A minimum of 70 % of calls shall be answered within 30 seconds at NS Power Customer Care Centre.	76.30%	Achieved
Percent Estimated Bills	No more than 2% of customer bills shall be estimated annually.	0.7%	Achieved
Customer Notification of Outages	Notify all customers of an outage as soon as NS Power has knowledge of an outage event.	Target Met	Achieved
New Service Connection Times	Service Installation No Pole: ≤3.0 days.	3.39 days	Not Achieved
	Service Installation Pole or Transformer: ≤4.9 days.	5.67 days	Not Achieved
	Service Installation Temporary to Permanent: ≤3.2 days.	3.86 days	Not Achieved
	Service Installation Line Extension <10 Poles: ≤6.2 days.	7.68 days	Not Achieved
	Service Installation Line Extension ≥ 10 Poles: ≤18.1 days.	14.12 days	Achieved

3. Adverse Weather Response Standards 2023 Results

Standard	Target	2023 Result	Outcome
Notification of EOC Opening	NS Power to notify customers of the decision to open the EOC within 4 hours of the decision to open.	Target Met	Achieved
Outage Call Answer Rate	A minimum of 85% of calls answered within 45 seconds at Customer Care Centre during severe outage events.	Jan 26-28: 97.74% Feb 4-7: 96.76% July 21-25: 96.20% Sept 16-21: 99.8% Dec 11-14: 99.75% Dec 18-21: 98.09% Dec 21-23: 99.30%	Achieved
Polite Disconnects	10% or less annually.	1.61%	Achieved
ETR Updates without delay	ETR updates provided without delay.	Target Met	Achieved
Percent Customers restored in 48 hours	Extreme Event Days: ≥78.38% of customer restored within 48 hours Major Event Days: ≥91.98% of customers restored within 48 hours. Significant Event Days (Following an EED or MED): ≥95.05% of customers restored within 48 hours	EED: September 16: 96.40% MED: January 26: 99.99% February 4: 99.99% July 21: 99.49% July 22: 99.42% September 17: 94.87% December 11: 98.67% December 18: 97.26% December 19: 99.72% December 21: 99.88%	Achieved
Outage Report for Events Impacting ≥ 30,000 Customers	File Report Within 45 days of the event, or within 75 in the case of a MED or EED	Jan 16 SED: Target Met Jan 26-28 MED: Target Met Feb 4-7 MED: Target Met July 21-25 MED: Target Met Sept 16-21 EED/MED:Target Met Nov 27-28 SED: Target Met Dec 11-14 MED: Target Met Dec 18-21 MED: Target Met Dec 21-23 MED: Target Met	Achieved

Appendix N

Comparison of Major and Extreme Event Days in 2023

Table 1 - Summary of Performance Standards Results for Major and Extreme Event Days in 2023

	Jan 26	Feb 4	Jul 21	Jul 22	Sep 16	Sep 17	Dec 11	Dec 18	Dec 19	Dec 21
Event Type	MED	MED	MED	MED	EED	MED	MED	MED	MED	MED
Reliability										
# of Customers Impacted	81,878	100,028	30,803	96,262	437,287	48,107	133,926	94,649	52,615	99,213
CHI	267,179	260,162	268,438	470,492	4,053,376	352,762	872,912	896,947	243,377	371,998
SAIFI	0.15	0.19	0.057	0.173	0.81	0.09	0.25	0.18	0.10	
SAIDI	0.50	0.49	0.499	0.875	7.54	0.66	1.62	1.67	0.45	
Adverse Weather										
% Customers Restored in 48 hours (Target 91.98%)	99.99	99.99	99.49	99.42	96.40	94.87	98.67	97.26	99.72	99.81
Notification of EOC Opening	n/a	Yes	n/a	n/a	Yes		Yes	Yes		Yes
% Outage Calls Answered in 45 Seconds (target 85%)	97.74	96.76	96.20		99.8		99.75	98.09		99.30
% Polite Disconnects (target ≤ 2%)	0.53	0.23	0.06		0.31		24.33*	0.06		0.10
ETRs Updated Without Delay	Yes	Yes	Yes		Yes		Yes	Yes		Yes
Customer Service										
Total Outage Calls Received	19,638	37,353	25,369		101,584		40,868	44,763		24,123
HVCA Self-Service Satisfied	15,824	30,277	21,085		83,619		33,940	37,302		19,204
Agent Answered (Voice)	3,588	6,541	3,555		17,624		5,282	6,818		4,781
% HVCA Satisfied	80.58	81.06	83.11		82.32		83.05	83.33		79.61
# of Polite Disconnects	19	15	2		55		1,698	4		5
Average Answer Speed (in seconds)	18	29	55		2		4	25		7
Service Level % of Calls Answered in 30 Seconds or Less (target 70%)	97.74	96.76	96.2		99.80		99.75	98.09		99.30
Outage Report Filed (Matter Number)	M11086	M10987	M11370		M11446		M11579	M11590		M11593

Table 2 - Summary of Crew Information for Major and Extreme Event Days in 2023

Crew Type	Region	Jan 26	Feb 4	July 21-22	Sep 17	Sep 18	Sep 19	Sep 20	Dec 11	Dec 18-19	Dec 21
		Individual Resources (Workers)									
NS Power Powerline Technicians	Cape Breton	36	34	24	30	30	36	36	34	34	34
	Metro	50	18	34	50	50	50	30	44	26	36
	Northeast	28	30	20	30	30	30	30	34	34	46
	West	40	40	46	44	44	50	50	42	64	40
External (Contractor) PLTs	Cape Breton	42	30	2	6				22	28	108
	Metro	20	10	114	60	102	90	12	8		12
	Northeast	36	28	28	90	98	26		80	126	26
	West	4	16	16	152	222	246	208	66	142	136
Forestry Workers	Cape Breton	21	6		14	14	1	1	46	27	27
	Metro	21			28	40	42	43	30	47	30
	Northeast	42	8		61	61	39	24	32	67	67
	West	24	12		85	85	83	49	32	65	76
Transmission Line PLTs & Operators	Cape Breton	6	6							12	12
	Metro				6	6	6	6		6	6
	Northeast	6	6		6	6	6	6	6	6	6
	West	6	6	12	18	18	18	18	6	6	6
Distribution Damage Assessors	Cape Breton								3	4	
	Metro				6	4	2		7	7	
	Northeast				14	12	2		5	10	
	West				22	22	5		7	8	
Transmission Damage Assessors	Cape Breton		2		2	2	2	2	2	2	2
	Metro				2	2	2	2	2	2	2
	Northeast		2		4	4	4	4	3	3	3
	West		2		4	4	4	4	4	4	4
Total Number of Resources Deployed		382	256	296	734	856	744	525	515	730	679

Table 3 - Summary of Peak Wind Gusts by Major or Extreme Event Day 2023

Region	Jan 26	Feb 4	Jul 21-22	Sep 16-17	Dec 11	Dec 18-19	Dec 21
Valley	78	76	35	93	89	107	65
South Shore	89	87	35	80	87	93	85
Northern	78	59	46	61	87	89	72
Northeast	82	85	35	n/a	91	96	83
Metro	91	76	31	107	91	94	89
Eastern Shore	100	85	39	102	81	93	102
Cape Breton West	115	95	48	72	93	111	94
Cape Breton East	102	78	43	69	91	91	96

Appendix O

Proposed Performance Standards for 2024

In its Decision on the proposed revisions to the Performance Standards the Board approved the following metrics for the 2022 to 2026 period.

1. Reliability Standards

(i) System Average Interruption Frequency Index ("SAIFI")
(ii) System Average Interruption Duration Index ("SAIDI")
(iii) Circuit Average Interruption Frequency Index ("CKAIFI")
(iv) Circuit Average Interruption Duration Index ("CKAIDI")

Exclusions: These reliability performance metrics are to be estimated for normal conditions, i.e., excluding: (i) major event days (MEDs) and above, as defined by the established MED and extreme event day (EED) thresholds* utilizing the IEEE 1366-2012 Standard 2.5 Beta methodology; and (ii) planned outages; and (iii) adverse weather-associated outages occurring in the second 24-hour period after a MED or EED.

Only those outages occurring in the second 24-hour period after a MED or EED severe event which can be attributed to the same storm system as precipitated the original MED or EED and meet Significant Event Day (SED**) thresholds are to be excluded from the metric calculation. The second 24-hour event, if excluded, will be considered a severe weather event, and be subject to adverse weather response standards.

These exclusions will apply to outage data effective January 1, 2022.

Compliance: NS Power's compliance across all reliability metrics will be assessed on an annual basis.

* The provincial MED and EED thresholds will be calculated utilizing the IEEE 1366-2012 Standard methodology, with the outage data associated with Hurricane Dorian (September 7, 8 and 9, 2019) excluded. Specifically, the events associated with the EEDs on September 7 and 8 and the MED on September 9, 2019 will be excluded.

** The provincial SED threshold for the second 24-hour period after a severe outage event will be calculated utilizing the IEEE 1366-2012 Standard 2.0 Beta methodology.

Standards 1 & 2 – SAIFI and SAIDI

SAIFI and SAIDI are system-wide reliability metrics, commonly used by electric power utilities.

Metrics:

- SAIFI measures the average number of times that a system customer experiences an outage during the specific time period of a study. SAIFI is estimated using the following formula:

  $$\text{SAIFI} = \frac{\text{Total Number of Customers Interruptions}}{\text{Total Number of Customers Served}}$$

- SAIDI measures the total duration of an interruption for the average customer, during a given time period. SAIDI is estimated using the following formula:

  $$\text{SAIDI} = \frac{\text{Sum of All Customer Interruption Durations}}{\text{Total Number of Customers Served}}$$

Benchmarks:

The SAIFI and SAIDI benchmarks/targets for NS Power will be set based on a 5-year rolling average plus 1 standard deviation ("SD") approach and reset each year. However, within a 5-year review period (i.e., 2022-2026), targets for any subsequent year (e.g. 2023 target) must be equal to or better than the prior year's target (e.g. 2022 target).

Figure 1 below identifies the SAIDI and SAIFI targets applicable for 2024, based on NS Power's historical data for the period from 2019 to 2023.

Figure 1 – 2024 Targets for SAIDI and SAIFI

Metric	2019	2020	2021	2022	2023	2019-2023 Average	Std. Dev	2023 Target	Calculated Target	2024 Target
SAIDI	5.99	3.98	5.23	5.16	5.21	5.11	0.64	4.29	5.76	4.29
SAIFI	2.58	2.05	2.27	2.19	2.18	2.25	0.18	2.05	2.43	2.05

The SAIDI and SAIFI values beginning January 1, 2024 will reflect the updated MED thresholds and allow for the removal of the second 24-hour period after a severe event per the established parameters.

Standards 3 & 4 – CKAIFI and CKAIDI

CKAIDI and CKAIFI are linked to circuit level reliability. The goal of these metrics is to mitigate problem circuits that would not normally be captured by system level performance metrics (i.e., SAIDI and SAIFI).

Metrics:

CKAIFI is related to the ***frequency*** of interruptions experienced, which may be tied to a given circuit. CKAIFI is estimated using the following formula:

$$\text{CKAIFI} = \frac{\text{Total Number of Customers Interruptions by Circuit}}{\text{Total Number of Customers Served by Circuit}}$$

CKAIDI is related to the ***duration*** of interruptions experienced, which may be tied to a given circuit. CKAIDI is estimated using the following formula:

$$\text{CKAIDI} = \frac{\text{Sum of All Customer Durations of Interruption by Circuit}}{\text{Total Number of Customers Served by Circuit}}$$

Benchmarks: The benchmarking methodology for CKAIFI and CKAIDI is as follows:

Any circuit or feeder that is among the worst 5 percent of all NS Power's circuits or feeders for two consecutive years shall be labeled as a problem circuit. Any problem circuit that is among the worst 5 percent of all NS Power's circuits or feeders for the third consecutive reporting year shall be labeled a chronic circuit. If the CKAIFI or CKAIDI values of the chronic circuits in a given year is greater than the average CKAIDI or CKAIFI values plus two standard deviations across all NS Power circuits in the same year, NS Power would have not met the benchmark, and shall be subject to a penalty.

Figure 2 identifies NS Power's circuits that appear among the worst 5 percent of all NS Power's circuits in both 2022 and 2023.

Figure 2 – CKAIDI and CKAIFI 2024 Problem Feeders

Metric	Feeders				
CKAIDI	91W-411	57S-401	11S-411	4N-413	1W-411
CKAIFI	57S-401	85S-401			

If any of the problem circuits identified above are among the worst 5 percent of the company's circuits for the third consecutive reporting year (i.e., 2023) for CKAIFI and CKAIDI respectively, those will be labeled the "chronic circuits" in 2024.

At the end of 2024, NS Power will file and compare the following data:

(i) the CKAIFI and CKAIDI of the chronic circuits in 2024, and
(ii) the average CKAIFI and CKAIDI plus 2 standard deviations of all circuits in 2024.

The comparison of (i) and (ii) will assist the Board in assessing compliance for the year 2024.

2. Adverse Weather Response Standards

The Board has approved the following metrics associated with adverse weather response standards:

(i) Customer notification of an oncoming severe weather event within a specific time frame
(ii) Percentage of calls answered within 45 seconds during a severe outage event
(iii) Polite disconnect rate for all outage calls
(iv) Estimated Time to Restore ("ETR") updates communicated to customers during an outage
(v) Percentage of customers restored within the first 48 hours of a severe weather event – separately for Major Event Days ("MEDs") and Extreme Event Days ("EEDs")[1] and Significant Event Days ("SEDs")[2] if the SEDs were excluded from normal conditions as the second 24-hour event, as discussed in Exclusions associated with reliability performance standards
(vi) Outage Report for adverse weather events impacting ≥ 30,000 customers.

Compliance: NS Power's compliance across all adverse weather response metrics will be assessed on an annual basis.

Standard 5 – Customer notification of an oncoming severe weather event

Metric: All NS Power customers shall be notified of an oncoming severe weather event within a specified number of hours of NS Power having knowledge of the oncoming inclement weather. The notifications shall be provided to all customers using multiple channels, such as the NS Power website, social media and automated messaging.

Benchmark: NS Power shall notify all its customers within 4 hours of NS Power's decision to open the NS Power Emergency Operations Centre. This benchmark shall be fixed for the 2022 to 2026 period.

Standard 6 – Percentage of calls answered within 45 seconds

Metric: Calls answered refers to telephone calls that are answered by a customer service representative after a caller asks to speak to a representative. The wait time associated with the "calls answered" metric is from the time the customer asks to speak to a representative to the time that the call is answered by a representative.

Calls answered using an automated system are not included in the estimation of the metric if a customer chooses to speak to a customer representative. Alternatively, if a customer chooses an automated system, those calls are included in the calculation of this metric.

[1] MEDs and EEDs are defined using the IEEE 1366-2012 Standard 2.5 and 3.5 Beta methodology, respectively, with the outage data associated with Hurricane Dorian (September 7, 8 and 9, 2019) excluded in accordance with the NSUARB's Decision dated February 22, 2022 (M10279).

[2] SEDs are defined using the IEEE 1366-2012 Standard 2.0 Beta methodology, with the outage data associated with Hurricane Dorian (September 7, 8 and 9, 2019) excluded in accordance with the NSUARB's Decision dated February 22, 2022 (M10279).

Benchmark: A minimum 85 percent of telephone calls answered within 45 seconds at NS Power's Customer Care Centre during each severe outage event (i.e., MEDs and above, as defined by the IEEE 1366-2012 Standard). This benchmark shall be fixed for the 2022 to 2026 period.

Standard 7 – Polite disconnect rate for all outage calls

Metric: A polite disconnect results when a customer on hold waiting for a customer service agent is disconnected after receiving a brief disconnect message. A polite disconnect can result when call lines are very busy, and call volumes may be too high to keep customers on hold.

Benchmark: A 10 percent or less polite disconnect rate will be targeted annually for all outage calls. This benchmark shall be fixed for the 2022 to 2026 period.

Standard 8 – Estimated Time to Restore (ETR) updates

Metric: The performance standard around estimated restoration times shall aim to promptly provide customers with accurate information based on information available with NS Power.

Benchmark: NS Power shall provide ETR updates to all customers with ***no delay***, once new restoration time estimates are known.[3] This benchmark shall be fixed for the 2022 to 2026 period.

Standard 9 – Percentage of customers restored within the first 48 hours of a severe weather event

Metric: This metric has been approved to reasonably quantify the promptness of restoration following a severe weather event and will be estimated separately for (i) MEDs, (ii) EEDs and (iii) SEDs, if the SEDs were excluded from normal conditions as the second 24-hour event, as discussed in Exclusions associated with Reliability Performance Standards.

Benchmark: The targets for this metric shall be based on NS Power's respective historical averages (since 2017) minus one standard deviation. The benchmarks will be updated annually by including the most recent data available at the time of benchmark updating.

With the data provided from 2017 to 2023, there are 6 data points for SEDs, 44 data points for MEDs, and 9 data points for EEDs. **Figure 3** below shows benchmarks to be set for the percentage of customers restored within first 48 hours for MEDs, EEDs and SEDs in 2024.

Figure 3 – 2024 Benchmarks for Percentage of Customers Restored within 48 hours of a MED/EED

Percentage of customers restored with 48 hours of:			
	MEDs	**EEDs**	**SEDs**
2017-2023 Average	96.57	83.97	96.19
Standard Deviation	6.23	14.52	5.65

[3] For the Board to assess whether ETR updates were provided to customers without delay, as part of its annual reports, NS Power shall submit a compliance statement stating this was achieved, and note any exceptions with reasons.

Percentage of customers restored with 48 hours of:			
	MEDs	**EEDs**	**SEDs**
2024 Target	91.98	78.38	95.05

Figure 4 provides the 2024 benchmarks for the event day thresholds for SEDs, MEDs and EEDs.

Figure 4 – 2024 Event Day Thresholds (Customer Hours of Interruption)

SED (CHI)	MED (CHI)	EED (CHI)
99,206	251,987	1.625 million

Standard 9A – Outage Report for events impacting > 30,000 customers

Metric/Benchmark: *NS Power shall submit a report for weather-related outages impacting 30,000 or greater customers. The outage report shall be in the form approved by the NSUARB (Matter M09524). NS Power shall file the outage report within 45 days of the event, or within 75 days in the case of a MED or EED with those impacts.*

3. Customer Service Standards

The Board has approved the following metrics associated with customer service standards:

(i) Percentage of calls answered within 30 seconds
(ii) Percentage of customer bills that can be estimated
(iii) Customer notification of outages
(iv) New service connection times

Compliance: NS Power's compliance across all customer service metrics will be assessed on an annual basis.

Standard 10 - Percentage of calls answered within 30 seconds

Metric: Calls answered refers to telephone calls that are answered by a customer service representative after a caller asks to speak to a representative. The wait time associated with the "calls answered" metric is from the time the customer asks to speak to a representative to the time that the call is answered by a representative. Calls answered using an automated system are not included in the estimation of the metric if a customer chooses to speak to a customer representative. Alternatively, if a customer chooses an automated system, those calls are included in the calculation of this metric.

Benchmark: A minimum of 70 percent of telephone calls shall be answered within 30 seconds at NS Power's Customer Care Centre (under normal conditions – i.e., excluding severe weather conditions, where the adverse weather response benchmark will apply). This benchmark shall be fixed for the 2022 to 2026 period.

Standard 11 – Customer bills estimated

Metric: NS Power may on occasion need to estimate a customer's bill if the customer's meter cannot be accessed and accurately read. For example, during winter months, snowfall and icy conditions create difficulties getting access to meters. This causes NS Power to estimate the bill for the customer or facility whose meter they could not access. When NS Power crews can access the meters, the customer's bill is then adjusted retrospectively to reflect the actual meter reading.

Benchmark: As a percentage of total bills, no more than 2 percent of customer bills shall be estimated annually. This benchmark shall be fixed for the 2022 to 2026 period.

Standard 12 – Customer notifications of outages

Metric/Benchmark: NS Power shall notify all customers of an outage event as soon as NS Power has knowledge of the outage event. This notification shall be followed up with prompt updates on restoration status of the outages. Channels used to communicate this information shall include NS Power's live outage map, social media and automated messaging.

Standard 13 – New service connection times

Metric: The amount of time taken to establish a new service connection provides a valuable gauge of NS Power's customer service and its ability to provide/establish electrical service within a reasonable time frame. There are 5 different types of service level metrics that are measured, and each of these has a specific target for NS Power to meet.

Benchmark: The targets for this metric will be set based on a 5-year rolling average plus 1 SD approach and reset each year. This metric includes a two-day service delivery floor (i.e. no service delivery time will be due less than 48 hours from the time of the request). However, within a 5-year review period (i.e., 2022-2026), targets for any subsequent year (e.g. 2023 target) must be equal to or better than the prior year's target (e.g. 2022 target).

Similar to reliability metrics such as SAIDI and SAIFI, benchmarks for new service connections will also be set for normal conditions, i.e., excluding data for MEDs and EEDs.

Figure 5 identifies the targets for new service connection times (under normal conditions) applicable for 2024, based on NS Power's historical data for the period 2019 to 2023.

Figure 5 – 2024 New Service Connection Time Targets

Service Type	Service Install – No Poles	Service Install – Pole or Transformer	Service Install – Temporary to Permanent	Service Install – Line Ext <10 poles	Service Install – Line Ext ≥10 poles
2019	3.0	4.9	3.1	6.6	21.5
2020	2.9	4.7	3.2	5.9	14.7
2021	3.0	4.8	3.1	5.9	10.2
2022	3.7	5.6	4.4	6.8	12.5
2023	3.39	5.67	3.86	7.68	14.12
2019-2023 Average	3.2	5.1	3.5	6.6	14.6
Standard Deviation	0.30	0.41	0.52	0.66	3.78
2024 Target	3.0	4.9	3.2	6.2	18.1

Exclusion: *When NS Power experiences MEDs and EEDs (as defined using the established MED and EED thresholds via the IEEE 1366-2012 Standard 2.5 and 3.5 Beta methodology respectively with the exclusion of outage data associated with Hurricane Dorian on September 7-9, 2019) in assessing new service connection times, NS Power shall be allowed to exclude: (i) MEDs and 7 days following MEDs; and (ii) EEDs and 14 days following EEDs, to allow for time needed to return to normal conditions.*