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January 31, 2024

Board of Commissioners of Public Utilities
Prince Charles Building
120 Torbay Road, P.O. Box 21040
St. John's, NL A1A 5B2

Attention: Jo-Anne Galarneau
Executive Director and Board Secretary

Re: Quarterly Report on Performance of Generating Units for the Twelve Months Ended December 31, 2023

Please find enclosed Newfoundland and Labrador Hydro's Quarterly Report on Performance of Generating Units for the Twelve Months Ended December 31, 2023.

Should you have any questions, please contact the undersigned.

Yours truly,

NEWFOUNDLAND AND LABRADOR HYDRO

Shirley A. Walsh
Senior Legal Counsel, Regulatory
SAW/nk

Encl.

ecc:

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Quarterly Report on Performance of Generating Units

For the Twelve Months Ended December 31, 2023

January 31, 2024

A report to the Board of Commissioners of Public Utilities

newfoundland labrador hydro

Contents

1.0 Introduction

In this report, Newfoundland and Labrador Hydro ("Hydro") provides data on forced outage rates of its generating facilities. The data provided pertains to historical forced outage rates and assumptions Hydro uses in its assessments of resource adequacy. This report covers the performance of Hydro's generating units for the current 12-month reporting period of January 1, 2023 to December 31, 2023 ("current period").

This report contains forced outage rates for the current period for individual generating units at regulated hydraulic facilities[1] as well as the Holyrood Thermal Generating Station ("Holyrood TGS") and Hydro's gas turbines. In addition, this report contains forced outage rates for the non-regulated Muskrat Falls Hydroelectric Generating Facility ("Muskrat Falls Facility"). This report also provides, for comparison purposes, the individual generating unit data on forced outage rates for the 12-month reporting period of January 1, 2022 to December 31, 2022 ("previous period"), and also total asset class data is presented based on the calendar year for the ten most recent years—2013 to 2022—with the exception of the Muskrat Falls Facility.[2]

The forced outage rates of Hydro's generating units are calculated using two measures:

1) Derated adjusted forced outage rate ("DAFOR") for the continuous (base-loaded) units; and

2) Derated adjusted utilization forced outage probability ("DAUFOP") for the standby units.

DAFOR is a metric that measures the percentage of time that a unit or group of units is unable to generate at its maximum continuous rating due to forced outages or unit deratings. The DAFOR for each unit is weighted to reflect differences in generating unit sizes to provide a company total and reflect the relative impact a unit's performance has on overall generating performance. This measure is applied to hydraulic units and, historically, was used for the thermal units; however, it is not applicable to gas turbines because of their operation as standby units and their relatively low operating hours.

[1] Regulated hydraulic facilities include the Bay d'Espoir Hydroelectric Generating Facility ("Bay d'Espoir Facility" or "BDE"), the Cat Arm Hydroelectric Generating Station ("Cat Arm Station" or "CAT"), the Hinds Lake Hydroelectric Generating Station ("Hinds Lake Station" or "HLK"), the Upper Salmon Hydroelectric Generating Station ("Upper Salmon Station" or "USL"), the Granite Canal Hydroelectric Generating Station ("Granite Canal Station" or "GCL"), and the Paradise River Hydroelectric Generating Station ("Paradise River Station" or "PRV").

[2] The final generating unit at the Muskrat Falls Facility was released for commercial operation on November 25, 2021. Annual DAFOR performance data is available beginning in 2022.

DAUFOP is a metric that measures the percentage of time that a unit or group of units will encounter a forced outage and not be available when required. DAUFOP is a measure primarily used for gas turbines; however, this measure will be applicable to the thermal units as their operation moves towards standby operation in the future. This metric includes the impact of unit deratings.

The forced outage rates include outages that remove a unit from service completely as well as instances when units are derated. If a unit's output is reduced by more than 2%, the unit is considered derated under Electricity Canada guidelines. These guidelines require that the derated levels of a generating unit be calculated by converting the operating time at the derated level into an equivalent outage time.

In addition to forced outage rates, this report provides details for those outages that contributed materially to forced outage rates exceeding those used in Hydro's generation planning analysis for both the near and long term.

2.0 Assumptions Used in Hydro's Assessment of System Reliability and Resource Adequacy

Hydro continually assesses the reliability of its system and its ability to meet customer requirements, filing both near- and long-term assessments with the Board of Commissioners of Public Utilities ("Board").[3]

As part of the ongoing *Reliability and Resource Adequacy Study Review* ("*RRA Study Review*") proceeding, Hydro detailed the process undertaken for determining the forced outage rates most appropriate for use in its near-term reliability assessments and long-term resource adequacy analysis. Table 1 summarizes the most recent forced outage rate assumptions, as calculated using the forced

[3] Hydro currently files an assessment of near-term system reliability and resource adequacy annually in November, the Near-Term Reliability Report. Hydro also files an assessment of longer-term system reliability and resource adequacy. The most recent filing was the "Reliability and Resource Adequacy Study – 2022 Update," Newfoundland and Labrador Hydro, October 3, 2022 ("RRA Study 2022 Update").
<http://pub.nl.ca/applications/NLH2018ReliabilityAdequacy/correspondence/From%20NLH%20-%20Reliability%20and%20Resource%20Adequacy%20Study%20-%202022%20Update%20-2022-10-03.PDF>.

Hydro's next update, the 2024 Resource Adequacy Plan, is scheduled to be filed in the second quarter of 2024.

outage rate methodology.[4] Forced outage rate assumptions will be re-evaluated on an annual basis to incorporate the most recent data available.

Table 1: Hydro's Reliability and Resource Adequacy Study Analysis Values (%)

Unit Type	Measure	Near-Term Analysis Value	Resource Planning Analysis Value
Hydraulic: Regulated and Muskrat Falls	DAFOR	3.90	2.30
Thermal	DAUFOP	20.00[5]	20.00
Gas Turbines			
Happy Valley	DAUFOP	4.70	7.60
Hardwoods and Stephenville	DAUFOP	30.00	N/A
Holyrood	DAUFOP	4.90	4.90

A three-year, capacity-weighted average was applied to the regulated hydraulic units (Bay d'Espoir Facility, Cat Arm Station, Hinds Lake Station, Granite Canal Station, Upper Salmon Station, and Paradise River Station) for a near-term analysis, resulting in a DAFOR of 3.90%, while a ten-year, capacity-weighted average was applied for use in the resource planning model, resulting in a DAFOR of 2.30%. The DAFOR value was based on historical data reflective of Hydro's maintenance program over the long term.

For the Muskrat Falls Facility, the same analysis values for near-term and resource planning were used, as it is assumed that these assets will be maintained to the same standards as the remainder of the hydraulic fleet. Once historical operational data from the Muskrat Falls Facility is available, the DAFOR applied will be re-evaluated.

Historically, forced outage rates for the three units at the Holyrood TGS have been reported using the DAFOR metric, which is predominately used for units that operate in a continuous (base load) capacity. As presented in Hydro's RRA Study 2022 Update, there are reliability concerns associated with the operation of the units at the Holyrood TGS in a standby capacity. When considering standby or peaking operations of units at the Holyrood TGS, DAFOR is no longer the most appropriate measure of forced

[4] Values indicated for Hydro's near-term analysis reflect those used in the "Reliability and Resource Adequacy Study Review– 2023 Near-Term Reliability Report – November Report," Newfoundland and Labrador Hydro, November 15, 2023 ("November 2023 Near-Term Report").
<http://www.pub.nl.ca/applications/NLH2018ReliabilityAdequacy/reports/From%20NLH%20-%20Near-Term%20Reliability%20Report%20-%20November%20%202023%20-%202023-11-15.PDF>.

[5] The Holyrood TGS base assumption is 20.00%. The sensitivity assumption is 34%. A sensitivity value of 34% was chosen to reflect actual performance at the Holyrood TGS for the 2021–2022 winter operating period.

outage rates; instead, UFOP[6] and DAUFOP should be considered. Given the frequency of deratings historically experienced by these units, DAUFOP is a more appropriate measure.

Analyses performed for a range of Holyrood TGS DAUFOP assumptions indicate the sensitivity of supply adequacy to changes in the availability of the Holyrood TGS. From this analysis, a DAUFOP of 20% was recommended in the near term, with a sensitivity value of 34%. Hydro will continue to analyze the operational data to ensure that forced outage rate assumptions for the Holyrood TGS are appropriate.

At present time, the operation of the units at the Holyrood TGS remains base-loaded to ensure the availability of capacity for the power system, as the Labrador-Island Link ("LIL") is recently commissioned and in the early operational stages. This will remain the case as Hydro continues to monitor LIL performance and reliability. If the LIL is found to perform well for an extended period and system conditions permit, Hydro may have the opportunity to incrementally remove the Holyrood TGS units from service. To ensure alignment with the assumptions used in the resource planning model (PLEXOS)[7] while appropriately reporting on current period performance versus historical, Hydro will continue to use the DAFOR performance measure and the 20.00% forced outage rate for the units at the Holyrood TGS.

As the gas turbines in the existing fleet are in varied conditions, each was considered on an individual basis rather than applying a weighted average across all units. For the Happy Valley Gas Turbine, a three-year, capacity-weighted average was applied to the unit for the near-term analysis, resulting in a DAUFOP of 4.70%, while a ten-year, capacity-weighted average was applied for use in the resource planning model resulting in a DAUFOP of 7.60%. The DAUFOP values were based on historical data founded upon the unit's past reliable performance. For the Holyrood Gas Turbine, a scenario-based approach was used to estimate an appropriate value for the near-term analysis, resulting in a DAUFOP of 4.90%. For the Hardwoods and Stephenville Gas Turbines, a DAUFOP of 30.00% was used for the near-term analysis, consistent with the metrics that were considered in the November 2023 Near-Term Report. As the Hardwoods and Stephenville Gas Turbines are approaching end-of-life, there is no resource planning analysis value listed for these facilities and the near-term assumption will remain for the remaining life of each facility. As of the most recent update, the Hardwoods Gas Turbine is proposed

[6] Utilization forced outage probability ("UFOP").
[7] The resource planning model does not differentiate between DAFOR and DAUFOP metrics; rather, it applies a forced outage rate only.

for retirement in 2030. Due to reliability concerns in the near term, the Stephenville Gas Turbine, originally proposed for retirement in 2024, is now being considered for operation potentially beyond 2024 should the 2024 Resource Adequacy Plan analysis determine it is necessary.

3.0 Current Period Overview

Table 2: DAFOR and DAUFOP Overview (%)

Unit Type	Measure	1-Jan-2022 to 31-Dec-2022	1-Jan-2023 to 31-Dec-2023	Near-Term Planning Analysis Value	Resource Planning Analysis Value
Hydraulic: Regulated	DAFOR	2.01	6.64	3.90	2.30
Hydraulic: Muskrat Falls Facility	DAFOR	4.12	2.49	3.90	2.30
Thermal	DAFOR/DAUFOP[8]	7.09	32.08	20.00	20.00
Gas Turbines					
Hardwoods/Stephenville	DAUFOP	6.88	28.19	30.00	N/A
Happy Valley	DAUFOP	0.00	22.54	4.70	7.60
Holyrood	DAUFOP	0.00	4.51	4.90	4.90

As shown in Table 2, regulated hydraulic DAFOR and thermal DAFOR performance declined for the current period, while the Muskrat Falls Facility DAFOR performance improved for the current period when compared to the previous period. The DAUFOP[9] performance for the Hardwoods and Stephenville Gas Turbines, the Happy Valley Gas Turbine, and the Holyrood Gas Turbine have all declined in the current period compared to the previous period.

4.0 Hydraulic Unit DAFOR Performance – Regulated Hydro

Detailed results for the current period and the previous period are presented in Table 3 and Chart 1. These results are compared to Hydro's near-term and resource planning analysis values for forced outage rates, as used in the RRA Study 2022 Update and the November 2023 Near-Term Report. Any individual unit with performance that does not meet the established near-term and/or resource planning analysis values is discussed herein.

[8] The resource planning model does not differentiate between DAFOR and DAUFOP; rather, it requires the selection of a forced outage rate percentage.
[9] Hydro began reporting DAUFOP performance in January 2018 for its gas turbines.

Table 3: Hydraulic Weighted DAFOR – Regulated Hydro

Generating Unit	Maximum Continuous Unit Rating (MW)	12 Months Ended Dec 2022 (%)	12 Months Ended Dec 2023 (%)	Near-Term Analysis Value (%)	Resource Planning Analysis Value (%)
All Hydraulic Units – Weighted	**954.4**	**2.01**	**6.64**	**3.90**	**2.30**
Hydraulic Units					
BDE Unit 1	76.5	0.00	0.00	3.90	2.30
BDE Unit 2	76.5	0.00	0.16	3.90	2.30
BDE Unit 3	76.5	0.06	0.00	3.90	2.30
BDE Unit 4	76.5	0.22	0.21	3.90	2.30
BDE Unit 5	76.5	27.87	0.00	3.90	2.30
BDE Unit 6	76.5	0.61	29.04	3.90	2.30
BDE Unit 7	154.4	0.00	0.00	3.90	2.30
CAT Unit 1	67	0.14	0.09	3.90	2.30
CAT Unit 2	67	0.05	0.18	3.90	2.30
HLK Unit	75	0.35	0.92	3.90	2.30
USL Unit	84	0.00	63.78	3.90	2.30
GCL Unit	40	3.10	2.55	3.90	2.30
PRV Unit	8	0.00	0.00	3.90	2.30

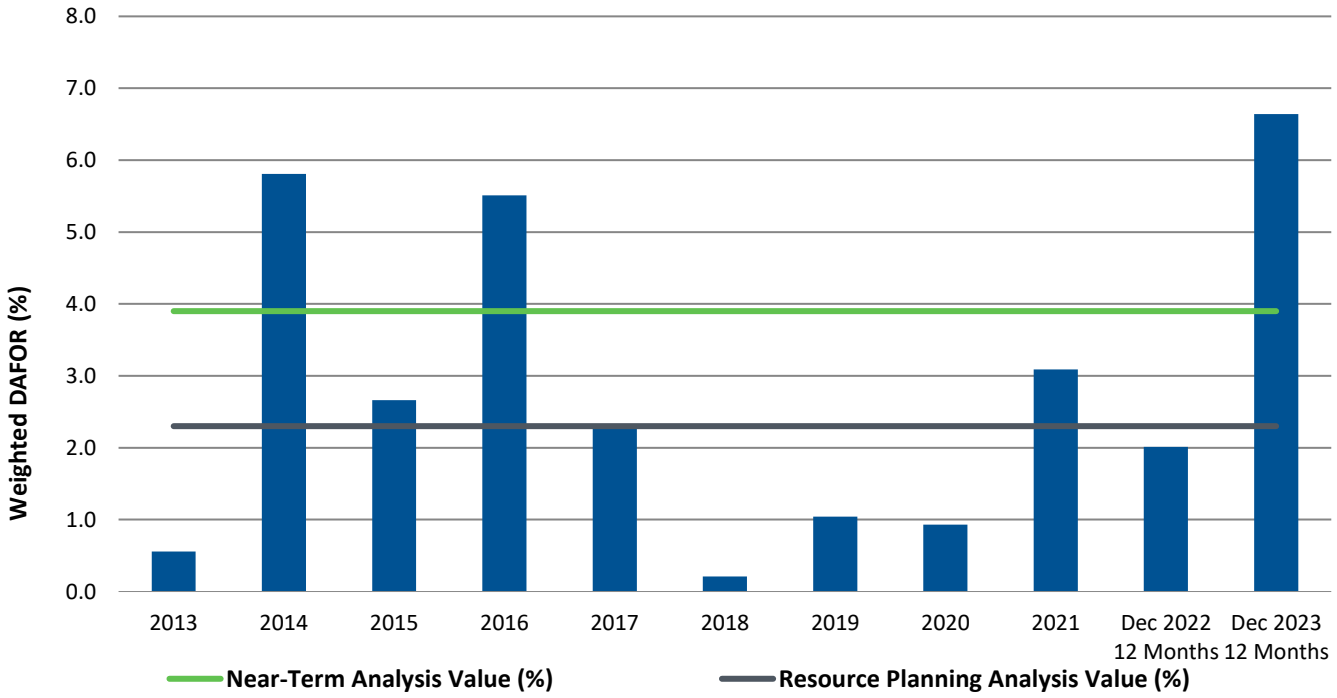

Chart 1: Hydraulic Weighted DAFOR – Regulated Hydro

4.1 Bay d'Espoir Facility

Considering individual hydraulic unit performance, the Bay d'Espoir Unit 6 DAFOR of 29.04% is above the resource planning analysis value of 2.30% and is above the near-term planning analysis value of 3.90% for an individual hydraulic unit. This increase in DAFOR was the result of a forced outage on July 25, 2023, as a result of the failure of a bushing on Transformer T6. This transformer was removed and a suitable spare transformer was installed in its place. The unit was successfully synchronized to the system for testing and released for normal service on October 7, 2023. The investigation into the cause of the transformer failure is ongoing.

4.2 Upper Salmon Station

The Upper Salmon Station unit DAFOR of 63.78% is above the resource planning analysis value of 2.30% and is above the near-term planning analysis value of 3.90% for an individual hydraulic unit. This increase in DAFOR was the result of a forced extension of a planned outage that occurred on March 10, 2023. Hydro has previously reported, in the November 2023 Near-Term Report, that this unit has experienced ongoing issues with the rotor rim keys and guidance block assemblies and that life extension activities were required to be completed prior to the unit returning to service.

An application was approved to undertake additional work to address the required life extension activities;[10] this work commenced in May 2023 and progressed well with all work completed and the unit successfully returned to service on December 12, 2023.

4.3 Granite Canal Station

The Granite Canal Station unit DAFOR of 2.55% is above the resource planning analysis value of 2.30%; however, it is below the near-term planning analysis value of 3.90% for an individual hydraulic unit and is showing improvement in performance over the previous period. In the current period, the DAFOR was primarily impacted by three forced outages. First, on July 2, 2023, the Granite Canal Station unit failed to start; alarms indicated that the governor oil head did not have sufficient pressure. Investigation revealed that although the operating pressure was set at the correct value during the annual maintenance outage one week prior, it had since experienced a deviation in set point—likely as a result of oil temperature increase as the unit operated. The pressure was readjusted and maintenance instructions were revised

[10] The "Application for Approval for Rotor Rim Shrinking and Stator Recentering at the Upper Salmon Hydroelectric Generating Station," Newfoundland and Labrador Hydro, April 26, 2022 was approved as per *Public Utilities Act,* RSNL 1990, c P-47, Board Order No. P.U. 18(2022), Board of Commissioners of Public Utilities, May 20, 2022.

to ensure that final settings are confirmed after the unit has operated for sufficient time for temperatures to stabilize.

On August 14, 2023, the unit experienced a forced outage when the governor accumulator pressure dropped below the shut down switch setting. Investigation revealed that the pressure was momentarily dropping below the set-point during start-up, when higher demand is placed on the accumulator rack. A temporary solution was implemented, which will allow the governor lag pump to support the required pressure during start-up until a planned inspection can be completed at the next scheduled maintenance interval to determine the root cause of the intermittent low pressure.

On November 8, 2023, the Granite Canal Station unit was removed from service after the failure of a generator bearing cooler was discovered. A leak developed in the cooler and water entered the oil-filled bearing, displacing the oil. A crew was dispatched to site and the failed cooler was identified, removed and replaced. The generator bearing assembly was thoroughly cleaned and the lubricating oil was replaced. The unit was successfully returned to service on November 13, 2023.

5.0 Hydraulic Unit DAFOR Performance – Muskrat Falls

Detailed results for the current period and the previous period are presented in Table 4 and Chart 2. These results are compared to Hydro's near-term and resource planning analysis values for forced outage rates, as used in the RRA Study 2022 Update and the November 2023 Near-Term Report. Any individual unit with performance that does not meet the established near-term and/or resource planning analysis values is discussed herein. Overall, the plant performance for Muskrat Falls Facility shows improvement over the previous period.

Table 4: Hydraulic Weighted DAFOR – Muskrat Falls

Generating Unit	Maximum Continuous Unit Rating (MW)	12 Months Ended Dec 2022 (%)	12 Months Ended Dec 2023 (%)	Near-Term Analysis Value (%)	Resource Planning Analysis Value (%)
Muskrat Falls Units - weighted	**824**	**4.12**	**2.49**	**3.90**	**2.30**
Muskrat Falls Units					
Muskrat Falls Unit 1	206	4.18	6.62	3.90	2.30
Muskrat Falls Unit 2	206	10.82	1.06	3.90	2.30
Muskrat Falls Unit 3	206	1.59	2.56	3.90	2.30
Muskrat Falls Unit 4	206	2.29	0.01	3.90	2.30

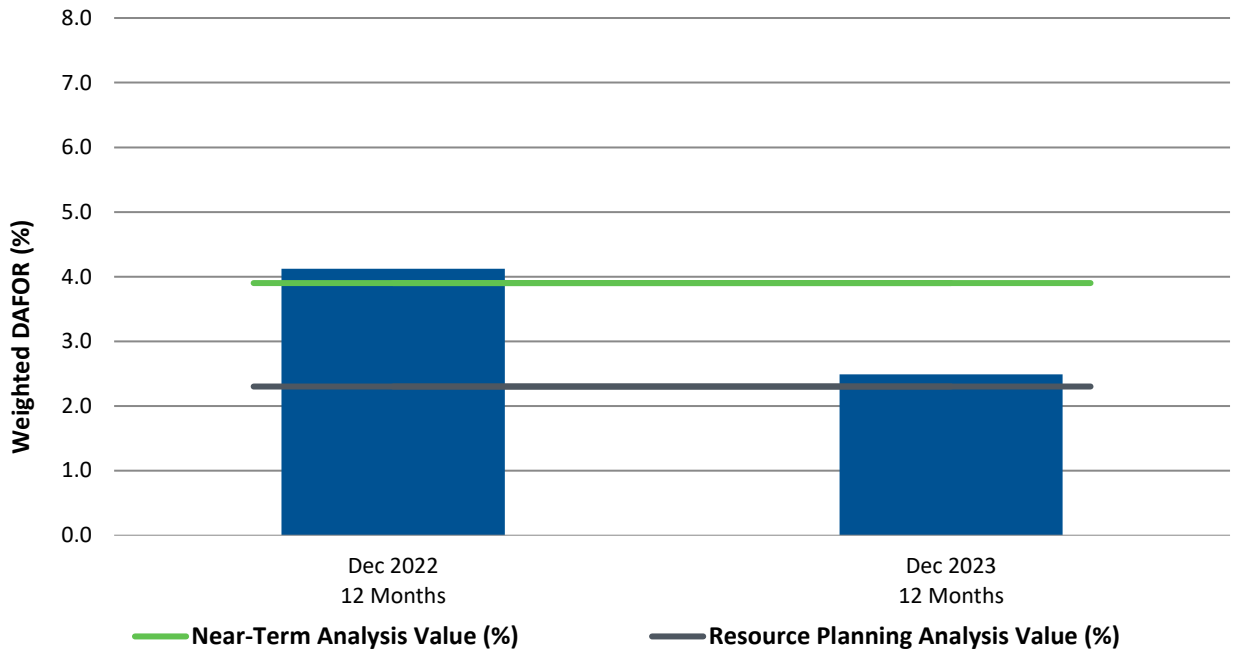

Chart 2: Hydraulic Weighted DAFOR – Muskrat Falls

5.1 Muskrat Falls Unit 1

The Muskrat Falls Unit 1 DAFOR of 6.62% is above the resource planning analysis value of 2.30% and is above the near-term planning analysis value of 3.90% for an individual hydraulic unit. The DAFOR performance was materially impacted as a result of a forced outage which occurred on March 21, 2023, due to the discovery of a crack in the discharge ring flange. The forced outage ended following the implementation of temporary repairs on March 31, 2023; however, the unit was derated to 140 MW

until permanent repairs were completed during a planned outage in April 2023. The unit was returned to service, and rated for full output, on May 12, 2023.

5.2 Muskrat Falls Unit 3

The Muskrat Falls Unit 3 DAFOR of 2.56% is above the resource planning analysis value of 2.30% but is below the near-term planning analysis value of 3.90% for an individual hydraulic unit. The DAFOR performance was materially impacted as a result of a forced outage from February 4, 2023 to February 11, 2023 caused by a fault in the excitation system. Since this event, following the return to service, the excitation system has performed as designed.

6.0 Thermal Unit DAFOR Performance

Detailed results for the current period and the previous period are presented in Table 5 and Chart 3. These results are compared to Hydro's near-term and resource planning analysis values for forced outage rates, as used in the RRA Study 2022 Update and the November 2023 Near-Term Report.

For the current period, the weighted DAFOR for all thermal units of 32.08% is above the 20.00% near-term and resource planning analysis values. The individual unit DAFOR outcome for the current period of 19.39% for Unit 1 at the Holyrood TGS is below the 20.00% analysis value. The performance of Unit 2 and Unit 3 at the Holyrood TGS are further discussed in Sections 6.1 and 6.2, respectfully.

Table 5: Thermal DAFOR

Generating Unit	Maximum Continuous Unit Rating (MW)	12 Months Ended Dec 2022 (%)	12 Months Ended Dec 2023 (%)	Near-Term Analysis Value (%)	Resource Planning Analysis Value (%)
All Thermal Units – Weighted	**490**	**7.09**	**32.08**	**20.00**	**20.00**
Thermal Units					
Holyrood TGS Unit 1	170	9.27	19.39	20.00	20.00
Holyrood TGS Unit 2	170	5.86	46.04	20.00	20.00
Holyrood TGS Unit 3	150	6.10	27.48	20.00	20.00

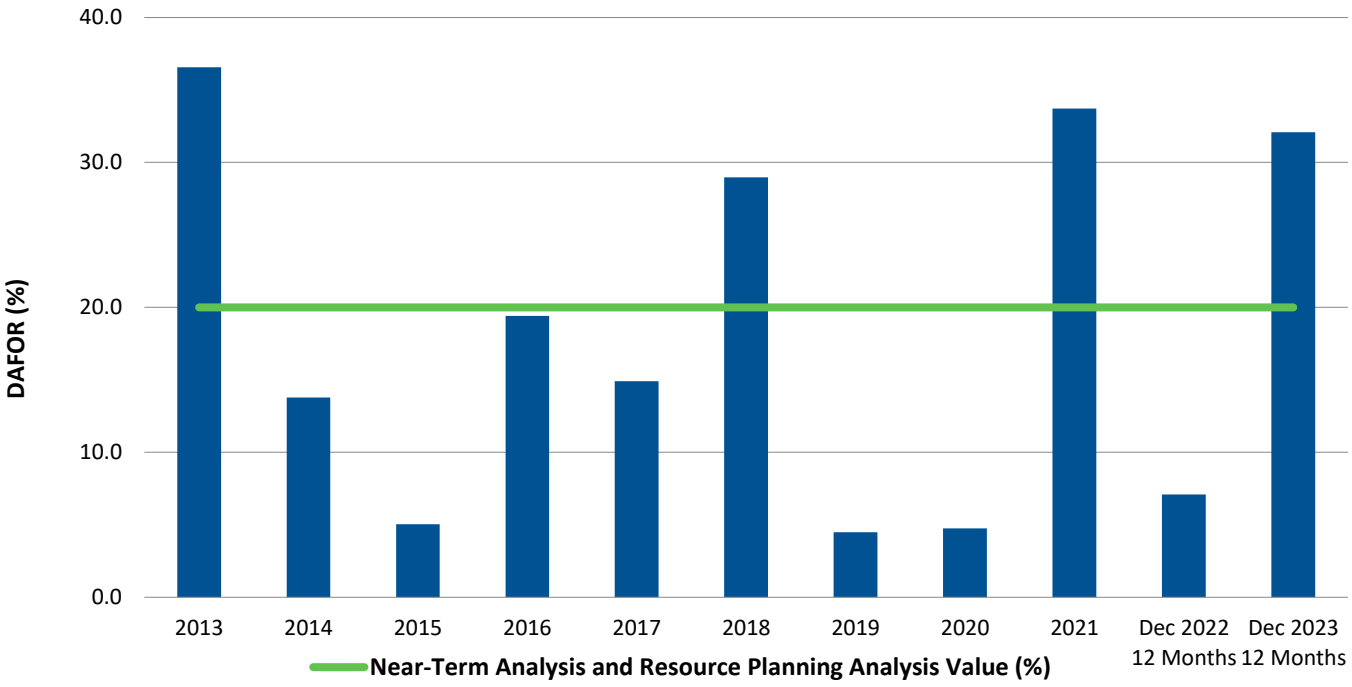

Chart 3: Thermal DAFOR

6.1 Holyrood TGS Unit 2

Considering individual thermal unit performance, the DAFOR of 46.04% for Unit 2 at the Holyrood TGS is above the near-term and resource planning analysis value of 20.00% for a unit at the Holyrood TGS, and shows a decline in performance over the previous period. This elevated DAFOR is a result of a forced extension to the planned unit outage to overhaul the Unit 2 turbine and replace the L-0 blades at the GE[11] shop in the United States.[12] Subsequent turbine rotor inspection at the GE shop identified additional and unexpected cracking on the L-1 blades, resulting in the required replacement of that set of blades.[13] The blades have been installed, and the rotor shipped back to Holyrood TGS, arriving on site in late December 2023. Re-assembly work is ongoing and the anticipated return to service date for the unit is March 2024.

[11] General Electric ("GE").
[12] Approved in *Public Utilities Act*, RSNL 1990, c P-47, Board Order No. P.U. 17(2022), Board of Commissioners of Public Utilities, May 20, 2022.
[13] These are the low pressure next-to-last stage ("L-1") blades, a separate stage of blades from the last stage ("L-0") blades.

6.2 Holyrood TGS Unit 3

Considering individual thermal unit performance, the DAFOR of 27.48% for Unit 3 at the Holyrood TGS is above the near-term and resource planning analysis value of 20.00% for a unit at the Holyrood TGS; and shows a decline in performance over the previous period. This elevated DAFOR was primarily the result of one forced outage and two forced deratings experienced in the current period.

On February 6, 2023, the unit was taken offline due to a boiler tube leak; repairs were made and the unit was returned to service on February 18, 2023 with full capability.

On October 24, 2023 during start-up activities, following the changeover from synchronous condenser to generation mode, the east forced draft fan motor failed. The motor was sent to be refurbished and the unit was returned to service, but operated with a forced derating to 50 MW until November 25, 2023 when the refurbished motor was returned to service.

On December 16, 2023, a small boiler tube leak was identified on Unit 3. The leak was assessed by site personnel and, given the location and nature of the leak, it was agreed that the unit could remain online, with a precautionary forced derating to 70 MW with close monitoring by Operations. This derating remained in effect through the end of the current period. Unit 3 was removed from service on January 9, 2024 to facilitate the planned investigation and repair of this leak. Repairs were made and the unit was returned to service on January 17, 2024 with full capability.

7.0 Gas Turbine DAUFOP Performance

The combined DAUFOP for the Hardwoods and Stephenville Gas Turbines was 28.19% for the current period, as shown in Table 6 and Chart 4. This is below the near-term planning analysis value of 30.00%. The Stephenville Gas Turbine DAUFOP for the current period is 49.08%, which is above the near-term planning assumption of 30.00%. The Hardwoods Gas Turbine DAUFOP for the current period is 6.94%, which is below the near-term planning assumption of 30.00%. On a per-unit basis, both the Stephenville and Hardwoods Gas Turbines have declined in performance when compared to the previous period. The performance of the Stephenville Gas Turbine is discussed in Section 7.1.

Table 6: Hardwoods/Stephenville Gas Turbine DAUFOP

Gas Turbine Units	Maximum Continuous Unit Rating (MW)	12 Months Ended Dec 2022 (%)	12 Months Ended Dec 2023 (%)	Near-Term Planning Analysis Value (%)
Gas Turbines	**100**	**6.88**	**28.19**	**30.00**
SVL	50	10.89	49.08	30.00
HWD	50	1.29	6.94	30.00

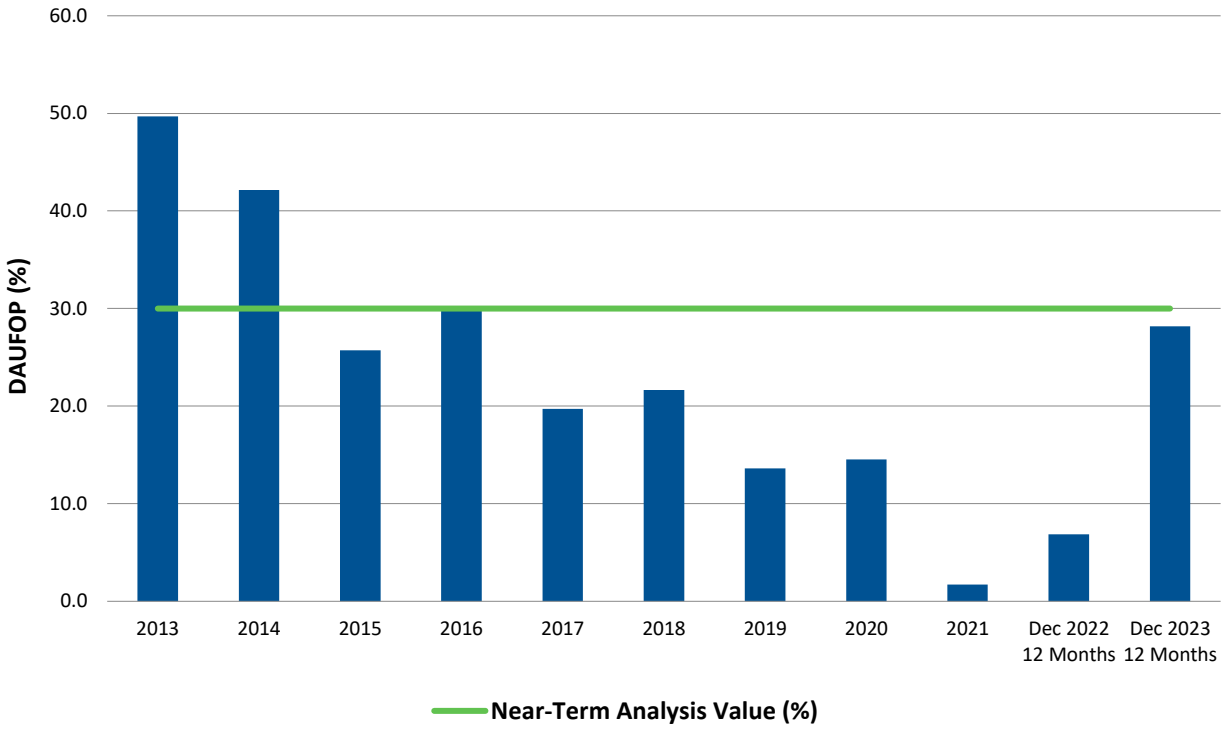

Chart 4: Gas Turbine DAUFOP: Hardwoods/Stephenville Units

The DAUFOP for the Happy Valley Gas Turbine was 22.54% for the current period, as shown in Table 7 and Chart 5. This is above both the near-term analysis value of 4.70% and the resource planning analysis value of 7.60% and indicates a decline in performance over the previous period. The performance of the Happy Valley Gas Turbine is discussed in Section 7.2.

Table 7: Happy Valley Gas Turbine DAUFOP

Gas Turbine Unit	Maximum Continuous Unit Rating (MW)	12 Months Ended Dec 2022 (%)	12 Months Ended Dec 2023 (%)	Near-Term Analysis Value (%)	Resource Planning Analysis Value (%)
Happy Valley	25	0.00	22.54	4.70	7.60

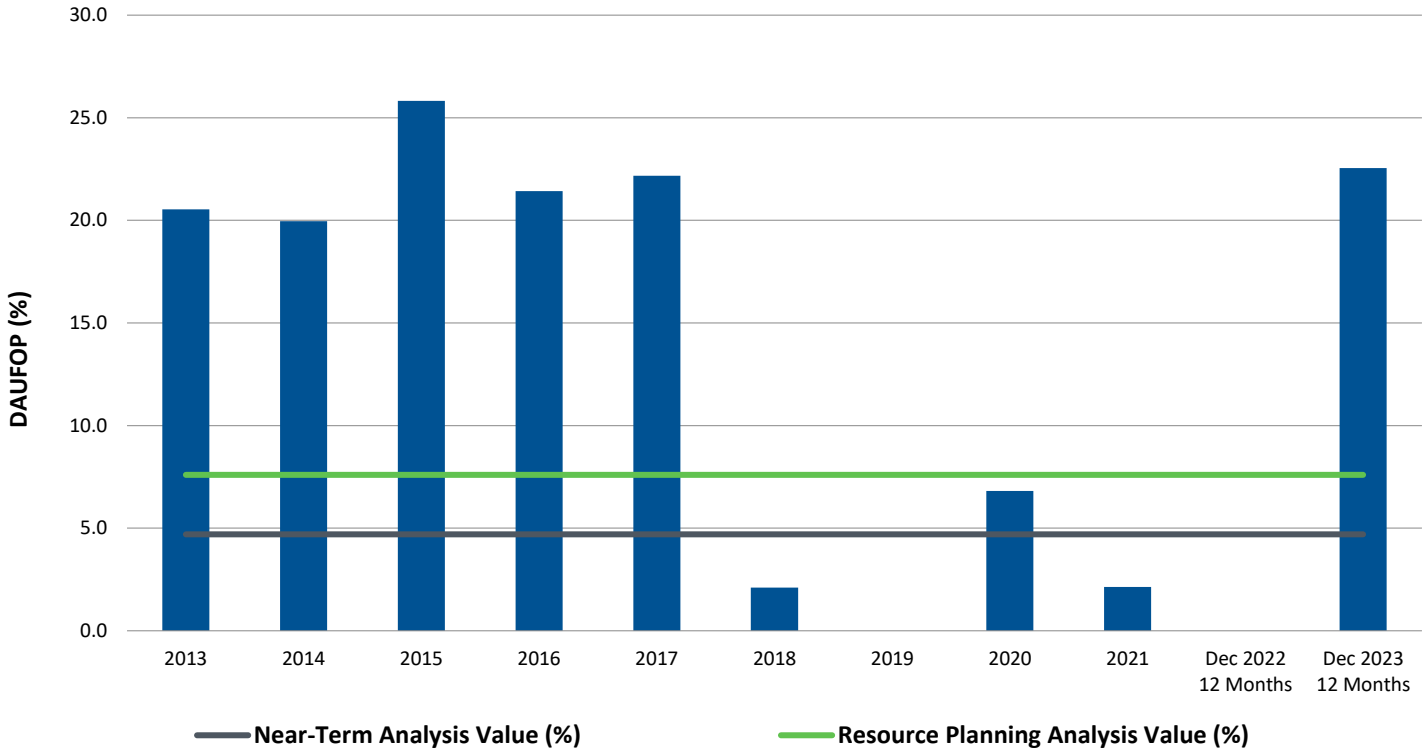

Chart 5: Gas Turbine DAUFOP: Happy Valley Unit

The Holyrood Gas Turbine DAUFOP of 4.51% for the current period is below the near-term and resource planning analysis value of 4.90%, as shown in Table 8 and Chart 6, and indicated a decline in performance when compared to the previous period.

Table 8: Holyrood Gas Turbine DAUFOP

Gas Turbine Unit	Maximum Continuous Unit Rating (MW)	12 Months Ended Dec 2022 (%)	12 Months Ended Dec 2023 (%)	Near-Term Analysis Value (%)	Resource Planning Analysis Value (%)
Holyrood	123.5	0.00	4.51	4.90	4.90

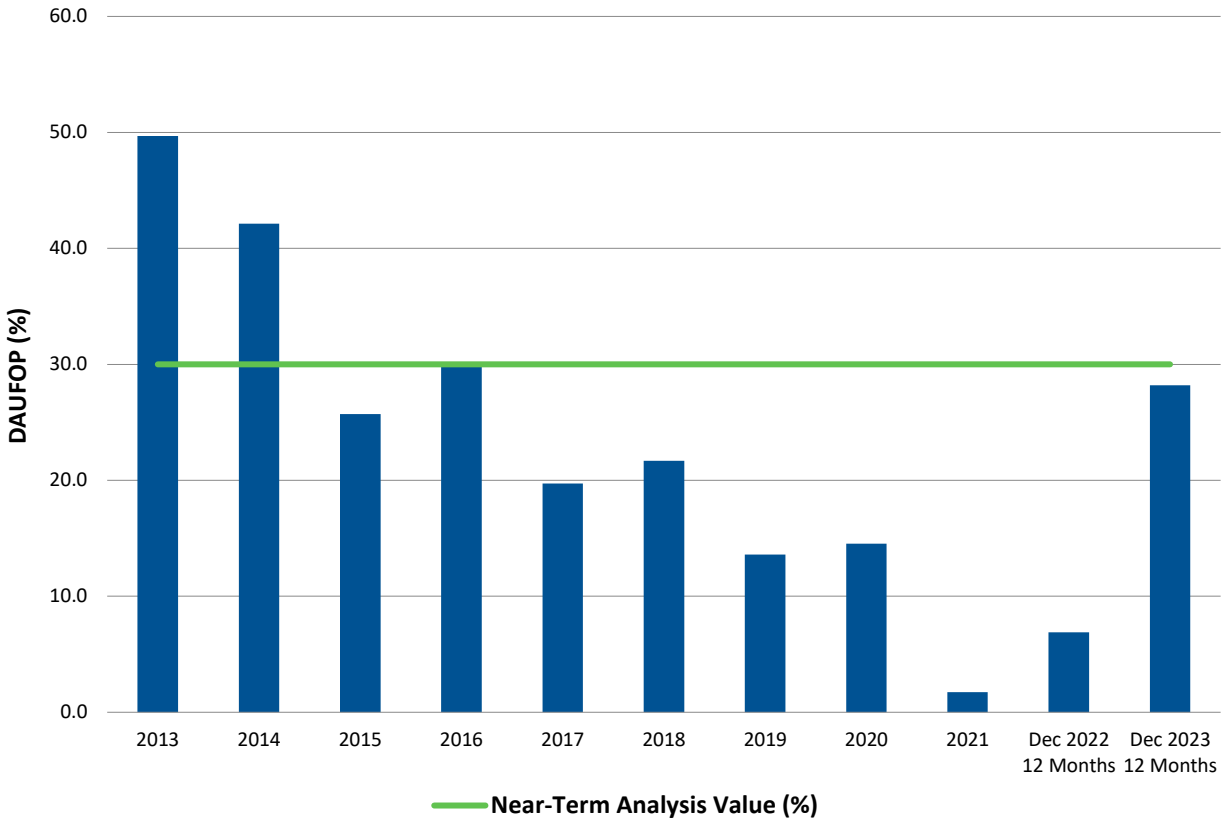

Chart 6: Gas Turbine DAUFOP: Holyrood Unit

7.1 Stephenville Gas Turbine

The Stephenville Gas Turbine DAUFOP was 49.08% for the current period, which is above the near-term analysis value of 30.00%. This decline in performance is a result of the failure of the alternator cooling fan, which occurred on July 14, 2023.[14]

An inspection was completed by the original equipment manufacturer ("OEM") who recommended that the alternator be removed from the unit. The rotor was removed from the alternator and sent to the OEM's facility in the United States for testing, inspection, and repair on December 6, 2023. Due to the results of the tests and inspections, additional repairs are required in January 2024. The rotor is now expected to be returned to site in early February 2024, and the unit returned to service in March 2024.

[14] Additional information was provided in the "2023–2024 Winter Readiness Planning Report," Newfoundland and Labrador Hydro, December 11, 2023, sec. 2.2, p. 8 and sec. 7.4.1, p. 38.

7.2 Happy Valley Gas Turbine

The Happy Valley Gas Turbine DAUFOP was 22.54% for the current period, which is above the near-term analysis value of 4.70% and the resource planning analysis value of 7.60%. This decline in performance is a result of four forced outages, which occurred in the second and third quarters of 2023 and were previously reported.[15]

[15] "Quarterly Report on Performance of Generating Units for the Twelve Months Ended September 30, 2023," Newfoundland and Labrador Hydro, October 30, 2023, sec. 6.2, pp. 14–15. <http://www.pub.nl.ca/indexreports/12month/From%20NLH%20-%20Q3%202023%20Report%20on%20the%20Rolling%2012%20Month%20Performance%20of%20Hydros%20Generating%20Units%20-%202023-10-30.PDF>.