Q. At 3-9 NP discusses its defined benefit pension plan. In 2016, NP provided (CA-NP-014) its consulting actuary's Capital Market Assumptions and Methodology (AON Hewitt) and Economic and Market Outlook (Mercer) related to these values. Please provide the latest equivalent reports and any other reports in its possession that deal with future equity and bond market returns on its pension plan assets.

A. Newfoundland Power's defined benefit pension plan (the "Plan") assumes an expected return on assets of 4.50% as at December 31, 2020. The Company's target asset mix is 40% equities and 60% bonds.

Table 1 shows the target mix of equities and bonds, together with the expected long-term rates of return assumed in calculating the expected return on assets of 4.50%.

Table 1:
Defined Benefit Pension Plan
Target Asset Mix and Expected Return
December 31, 2020

	Target Asset Mix	Expected Return
Equities	40%	7.3%
Bonds	60%	1.9%

Newfoundland Power observes that the long-term return on equities used by pension actuaries is a geometric return. The use of geometric values is appropriate to measure performance of pension assets over a long period. The use of geometric returns is, however, not appropriate for the estimation of a utility's cost of capital. Only *arithmetic* returns are appropriate for the estimation of a utility's cost of capital.[1]

Newfoundland Power requested that its actuary, Mercer (Canada) Ltd. ("Mercer"), provide the Company with an equivalent equity return to the 7.3% geometric value expressed on an arithmetic basis. Mercer has indicated that if the 7.3% equity return assumption used in the 4.50% overall return on assets in the Plan were expressed on an arithmetic basis, the return assumption for equity returns in the Plan would be 8.9%.[1]

Attachment A provides a letter from Mercer that includes: (i) the actuarial assumed long-term expected return for the Plan; and (ii) the translation of the equity return assumption from a geometric to an arithmetic return.

[1] The appropriateness of using arithmetic versus geometric means in estimating utilities' cost of capital is discussed in, amongst other places, Morin, *New Regulatory Finance*, p.133 *et. seq*.

Newfoundland Power does not believe it would be appropriate for the Board to use a pension assumption of a long-term equity market return as a basis for the allowed return on equity for the Company. Even if the long-term geometric return is translated to an arithmetic return, the proposition that pension fund return assumptions form a legitimate basis for establishing a utility's cost of equity has conceptual difficulties. One difficulty is that a pension assumption of a long-term equity market return reflects a diversified equity portfolio return, which is not necessarily comparable in risk to the equity of a utility in Newfoundland Power's circumstances. A second difficulty relates to the differing goals of pension fund management (to ensure availability of assets to fund employee retirement income) and utility regulation (to set a fair return).

Attachment B provides Mercer's report on Newfoundland Power's Retirement Income Plan titled *Report on the Actuarial Valuation for Funding Purposes as at December 31, 2019*.

Mercer (Canada) Ltd.
Newfoundland Power's Expected Return on
Defined Benefit Pension Plan Assets

Mercer

Armando Fernandes, FSA, FCIA
Principal

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Newfoundland Power
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St. John's, Newfoundland A1B 3P6
Canada

06 August 2021

Subject: Expected Return on Pension Plan Assets

Dear Daniel:

As requested in your email on August 6, 2021, the table below shows the development of Newfoundland Power's long term expected return on its defined benefit pension assets as at December 31, 2020:

Asset Class	Target Asset Mix	Weighted Geometric Average Expected Return	Weighted Average Return
Equities	40%*	7.34%	2.94%
Bonds	60%	1.94%	1.16%
			4.10%
		Diversification adjustment	0.50%
		Expenses	(0.10%)
			4.50%

*10% Canadian equity (large cap), 13% global equity (large cap), 6% global low volatility, 5% global equity (small cap), 6% emerging markets equity

If the 7.34% geometric expected return on equities, shown in the table above, were expressed on an arithmetic basis, the equivalent return expectation would be 8.87%.

Sincerely,

Armando Fernandes, FSA, FCIA
Principal

Report on the Actuarial Valuation
for Funding Purposes as at December 31, 2019

MERCER

NEWFOUNDLAND POWER INC. RETIREMENT INCOME PLAN

Report on the Actuarial Valuation for Funding Purposes as at December 31, 2019

SEPTEMBER 2020

Newfoundland and Labrador Pension Authorities Registration Number: 75241

Canada Revenue Agency Registration Number: 0486365

welcome to brighter

MERCER

Note to reader regarding actuarial valuations:

This valuation report may not be relied upon for any purpose other than those explicitly noted in the Introduction, nor may it be relied upon by any party other than the parties noted in the Introduction. Mercer is not responsible for the consequences of any other use. A valuation report is a snapshot of a plan's estimated financial condition at a particular point in time; it does not predict a pension plan's future financial condition or its ability to pay benefits in the future. If maintained indefinitely, a plan's total cost will depend on a number of factors, including the amount of benefits the plan pays, the number of people paid benefits, the amount of plan expenses, and the amount earned on any assets invested to pay the benefits. These amounts and other variables are uncertain and unknowable at the valuation date. The content of the report may not be modified, incorporated into or used in other material, sold or otherwise provided, in whole or in part, to any other person or entity, without Mercer's permission. All parts of this report, including any documents incorporated by reference, are integral to understanding and explaining its contents; no part may be taken out of context, used, or relied upon without reference to the report as a whole.

To prepare the results in this report, actuarial assumptions are used to model a single scenario from a range of possibilities for each valuation basis. The results based on that single scenario are included in this report. However, the future is uncertain and the Plan's actual experience will differ from those assumptions; these differences may be significant or material. Different assumptions or scenarios within the range of possibilities may also be reasonable, and results based on those assumptions would be different. Furthermore, actuarial assumptions may be changed from one valuation to the next because of changes in regulatory and professional requirements, developments in case law, plan experience, changes in expectations about the future, and other factors.

The valuation results shown in this report also illustrate the sensitivity to one of the three key actuarial assumptions, including the discount rate, and the sensitivity to three adverse scenarios. We note that the results presented herein rely on many assumptions, all of which are subject to uncertainty, with a broad range of possible outcomes, and the results are sensitive to all the assumptions used in the valuation.

Should the Plan be wound up, the going concern funded status and solvency financial position, if different from the wind-up financial position, become irrelevant. The hypothetical wind-up financial position estimates the financial position of the Plan assuming it is wound up on the valuation date. Emerging experience will affect the wind-up financial position of the Plan assuming it is wound up in the future. In fact, even if the Plan were wound up on the valuation date, the financial position would continue to fluctuate until the benefits are fully settled.

Decisions about benefit changes, granting new benefits, investment policy, funding policy, benefit security, and/or benefit-related issues should not be made solely on the basis of this valuation, but only after careful consideration of alternative economic, financial, demographic, and societal factors, including financial scenarios that assume future sustained investment losses.

Funding calculations reflect our understanding of the requirements of Pension Benefits Act *(Newfoundland and Labrador)*, the Income Tax Act, and related regulations that are effective as of the valuation date. Mercer is not a law firm, and the analysis presented in this report is not intended to be a legal opinion. You should consider securing the advice of legal counsel with respect to any legal matters related to this report.

Contents

1

Summary of Results

	31.12.2019	31.12.2017
Going Concern Financial Status		
Actuarial value of assets	$424,814,000	$408,808,000
Going concern funding liabilities	$357,240,000	$339,097,000
Funding excess (shortfall)	$67,574,000	$69,711,000
Funded ratio	118.9%	120.6%
Hypothetical Wind-up Financial Position		
Wind-up assets	$443,719,000	$421,391,000
Wind-up liability	$424,557,000	$412,745,000
Wind-up excess (shortfall)	$19,162,000	$8,646,000
Wind-up ratio	104.5%	102.1%
Funding Requirements in the Year Following the Valuation [1]		
Total current service cost	$3,502,000	$3,577,000
Estimated members' required contributions	($664,000)	($793,000)
Estimated employer's current service cost	$2,838,000	$2,784,000

[1] Provided for reference purposes only. Contributions must be remitted to the Plan in accordance with the Minimum Funding Requirements and Maximum Eligible Contributions sections of this report.

	31.12.2019	31.12.2017
Employer's current service cost expressed as a percentage of members' pensionable earnings	16.98%	14.37%
Minimum special payments	$0	$0
Estimated minimum employer contribution	$2,838,000	$2,784,000
Estimated maximum eligible employer contribution	$2,838,000	$2,784,000
Next required valuation date	December 31, 2022	December 31, 2020

2

Introduction

To Newfoundland Power Inc.

At the request of Newfoundland Power Inc., we have conducted an actuarial valuation of the Newfoundland Power Inc. Retirement Income Plan (the "Plan"), sponsored by Newfoundland Power Inc. (the "Company"), as at the valuation date, December 31, 2019. We are pleased to present the results of the valuation.

Purpose

The purpose of this valuation is to determine:

- The funded status of the Plan as at December 31, 2019 on going concern, hypothetical wind-up, and solvency bases;
- The minimum required funding contributions from 2020, in accordance with the *Pension Benefits Act (Newfoundland and Labrador)* (the "Act"); and
- The maximum permissible funding contributions from 2020, in accordance with the *Income Tax Act.*

The information contained in this report was prepared for the internal use of the Newfoundland Power Inc., and for filing with the Newfoundland and Labrador Pension Authorities and with the Canada Revenue Agency, in connection with our actuarial valuation of the Plan. This report will be filed with the Newfoundland and Labrador Pension Authorities and with the Canada Revenue Agency. This report is not intended or suitable for any other purpose.

In accordance with pension benefits legislation, the next actuarial valuation of the Plan will be required as at a date not later than December 31, 2022, or as at the date of an earlier amendment to the Plan depending on any funding implications.

Terms of Engagement

In accordance with our terms of engagement with the Newfoundland Power Inc., our actuarial valuation of the Plan is based on the following material terms:

- It has been prepared in accordance with applicable pension legislation and actuarial standards of practice in Canada.
- As instructed by the Newfoundland Power Inc., we have not reflected a margin for adverse deviations in the going concern valuation.
- We have reflected the Newfoundland Power Inc. decisions for determining the solvency funding requirements, summarized as follows:
  - The same Plan wind-up scenario was hypothesized for both hypothetical wind-up and solvency valuations.
  - The solvency financial position was determined on a market value basis.

See the Valuation Results – Solvency section of the report for more information.

Events since the Last Valuation at December 31, 2017

Pension Plan

There have been no special events since the last valuation date.

This valuation reflects the provisions of the Plan as at December 31, 2019. The Plan has not been amended since the date of the previous valuation, and we are not aware of any pending definitive or virtually definitive amendments coming into effect during the period covered by this report. The Plan provisions are summarized in Appendix F.

Assumptions

We have used the same going concern valuation assumptions and methods as were used for the previous valuation, except for the following:

	Current valuation	Previous valuation
Discount rate:	4.45%	4.95%
Interest on employee contributions:	4.45%	4.95%
Termination rates:	None	Age-related table

A summary of the going concern methods and assumptions is provided in Appendix C.

The hypothetical wind-up and solvency assumptions have been updated to reflect market conditions at the valuation date. A summary of the hypothetical wind-up and solvency methods and assumptions is provided in Appendix D.

Regulatory Environment and Actuarial Standards

There have been no changes to the Act, the relevant regulations or actuarial standards which impact the funding of the Plan.

Subsequent Events

On January 24, 2020, the Canadian Institute of Actuaries released the final standards for pension commuted values ("CIA CV Standard"). The new CIA CV Standard was scheduled to be effective August 1, 2020 with early adoption permitted for target pension arrangements. The CIA has since announced that the new CIA CV Standard will be effective December 1, 2020.

From the effective date, the new CIA CV Standard will affect the assumptions used to value the solvency and wind-up liabilities for benefits assumed to be settled through a lump sum transfer. The financial impact of those changes has not been reflected in this actuarial valuation and will be considered in a future actuarial valuation, after their effective date.

After checking with representatives of the Company, to the best of our knowledge there have been no other events subsequent to the valuation date that, in our opinion, would have a material impact on the results of the valuation as at December 31, 2019. However, since the valuation date, there have been significant fluctuations in the financial markets, which may have led to a deterioration of the funded position of the Plan after the valuation date. Our valuation reflects the financial position of the Plan as of the valuation date and does not take into account any experience after the valuation date.

Impact of Case Law

This report has been prepared on the assumption that all claims on the Plan after the valuation date will be in respect of benefits payable to members of the Plan determined in accordance with the Plan terms and that all Plan assets are available to provide for these benefits. It is possible that court and regulatory decisions and changes in legislation could give rise to additional entitlements to benefits under the Plan and cause the results in this report to change. By way of example, we bring your attention to the following decisions:

- The Ontario Court of Appeal's 2003 decision in *Aegon Canada Inc. and Transamerica Life Canada versus ING Canada Inc.* restricted the use of original plan surplus where two or more pension plans were merged.
- The Supreme Court of Canada's 2004 decision in *Monsanto Canada Inc. versus Superintendent of Financial Services* upheld the requirement, with retroactive effect, to distribute surplus on partial plan wind-up under the *Pension Benefits Act (Ontario).*

Although these decisions dealt with Ontario legislation, it is possible that they could have application to other provinces where the underlying language in the *Pension Benefits Act (Ontario)* is similar to language in the legislation of other provinces.

We are not in a position to assess the impact that such decisions or changes could have on the assumption that all plan assets on the valuation date are available to provide for benefits determined in accordance with the Plan terms. If such a claim arises subsequent to the date of this report, the consequences will be dealt with in a subsequent report. We are making no representation as to likelihood of such a claim.

3

Valuation Results – Going Concern

Financial Status

A going concern valuation compares the relationship between the value of Plan assets and the present value of expected future benefit cash flows in respect of accrued service, assuming the Plan will be maintained indefinitely.

The results of the current valuation, compared with those from the previous valuation, are summarized as follows:

	31.12.2019	31.12.2017
Assets		
Market value of assets	$443,969,000	$421,641,000
Asset smoothing adjustment	($19,155,000)	($12,833,000)
Smoothed value of assets	$424,814,000	$408,808,000
Going concern funding target		
Going concern liabilities:		
• Active members	$131,217,000	$136,543,000
• Pensioners and survivors	$223,607,000	$200,579,000
• Deferred pensioners	$1,103,000	$1,679,000
• Pending Settlement	$1,313,000	$296,000
Total	$357,240,000	$339,097,000
Funding excess (shortfall)	$67,574,000	$69,711,000

The going concern funding target is based on best-estimate assumptions and does not include a provision for adverse deviations.

Reconciliation of Financial Status

Funding excess (shortfall) as at previous valuation		$69,711,000
Interest on funding excess (shortfall) at 4.95% per year		$7,072,000
Employer's special payments, with interest		$0
Expected funding excess (shortfall)		$76,783,000
Net experience gains (losses)		
• Investment return	$9,130,000	
• Increases in pensionable earnings	$1,079,000	
• Increase in YMPE	($237,000)	
• Increase in maximum pension	$70,000	
• Mortality	$604,000	
• Retirement	$267,000	
• Termination	($264,000)	
Total experience gains (losses)		$10,649,000
Impact of changes in assumptions		
• Discount rate	($20,333,000)	
Total assumption changes impact		($20,333,000)
Data Correction		$627,000
Net impact of other elements of gains and losses		($152,000)
Funding excess (shortfall) as at current valuation		$67,574,000

Current Service Cost

The current service cost is an estimate of the present value of the additional expected future benefit cash flows in respect of pensionable service that will accrue after the valuation date, assuming the Plan will be maintained indefinitely.

The current service cost during the year following the valuation date, compared with the corresponding values determined in the previous valuation, is as follows:

	2020	2018
Total current service cost	$3,502,000	$3,577,000
Estimated members' required contributions	($664,000)	($793,000)
Total estimated employer's current service cost	$2,838,000	$2,784,000
Employer's current service cost expressed as a percentage of members' pensionable earnings[2]	16.98%	14.37%

The key factors that have caused a change in the employer's current service cost, since the previous valuation are summarized in the following table:

Employer's current service cost as at previous valuation	14.37%
Demographic changes	0.90%
Changes in assumptions	1.71%
Employer's current service cost as at current valuation	16.98%

Discount Rate Sensitivity

The following table summarizes the effect on the going concern liabilities and current service cost shown in this report of using a discount rate that is 1% lower than that used in the valuation.

[2] The pensionable earnings for this calculation does not include members who are no longer accruing pensionable service.

Scenario	Valuation Basis	Reduce Discount Rate by 1%
Going concern funding liabilities	$357,240,000	$404,746,000
Current service cost		
• Total current service cost	$3,502,000	$4,193,000
• Estimated members' required contributions	($664,000)	($664,000)
Estimated employer's current service cost	$2,838,000	$3,529,000

Plausible Adverse Scenarios

The financial impact on the going concern results of plausible adverse scenarios that would pose threats to the Plan's future financial condition is presented in Appendix G.

4

Valuation Results – Hypothetical Wind-up

Financial Position

When conducting a hypothetical wind-up valuation, we determine the relationship between the respective values of the Plan's assets and its liabilities assuming the Plan is wound up and settled on the valuation date, assuming benefits are settled in accordance with the Act and under circumstances consistent with the hypothesized scenario on the valuation date. More details on such scenario are provided in Appendix D.

The hypothetical wind-up financial position as of the valuation date, compared with that at the previous valuation, is as follows:

	31.12.2019	31.12.2017
Assets		
Market value of assets	$443,969,000	$421,641,000
Termination expense provision	($250,000)	($250,000)
Wind-up assets	$443,719,000	$421,391,000
Present value of accrued benefits for:		
• Active members	$156,818,000	$163,222,000
• Pensioners and survivors	$264,678,000	$246,576,000
• Deferred pensioners	$1,748,000	$2,651,000
• Pending Settlement	$1,313,000	$296,000
Total wind-up liability	$424,557,000	$412,745,000
Wind-up excess (shortfall)	$19,162,000	$8,646,000

Wind-up Incremental Cost

The wind-up incremental cost is an estimate of the present value of the projected change in the hypothetical wind-up liabilities from the valuation date until the next scheduled valuation date, adjusted for the benefit payments expected to be made in that period.

The hypothetical wind-up incremental cost determined in this valuation, compared with the corresponding value determined in the previous valuation, is as follows:

	31.12.2019	31.12.2017
Number of years covered by report	3 years	3 years
Total hypothetical wind-up liabilities at the valuation date (A)	$424,557,000	$412,745,000
Present value at the valuation date of projected hypothetical wind-up liability at the next required valuation (including expected new entrants) plus expected benefit payments until the next required valuation (B)	$447,360,000	$439,163,000
Hypothetical wind-up incremental cost (B – A)	$22,803,000	$26,418,000

The incremental cost is not an appropriate measure of the contributions that would be required to maintain the wind-up position of the Plan even if actual experience is exactly in accordance with the going concern valuation assumptions. For example, the expected return on plan assets (based on the going concern assumptions) is greater than the discount rate used to determine the hypothetical wind-up liabilities.

Discount Rate Sensitivity

The following table summarizes the effect on the hypothetical wind-up liabilities shown in this report of using a discount rate that is 1% lower than that used in the valuation:

Scenario	Valuation Basis	Reduce Discount Rate by 1%
Total hypothetical wind-up liability	$424,557,000	$486,847,000

5

Valuation Results – Solvency

Overview

The Act also requires the financial position of the Plan to be determined on a solvency basis. The financial position on a solvency basis is determined in a similar manner to the Hypothetical Wind-up Basis, except for the following:

Exceptions	Reflected in valuation based on the terms of engagement
The circumstance under which the Plan is assumed to be wound up could differ for the solvency and hypothetical wind-up valuations.	The same circumstances were assumed for the solvency valuation as were assumed for the hypothetical wind-up valuation.
The solvency financial position can be determined by smoothing assets and the solvency discount rate over a period of up to 5 years.	Solvency assets are set equal to the market value of assets.
The benefit rate increases coming into effect after the valuation date can be reflected in the solvency valuation.	Not applicable.

Financial Position

The financial position on a solvency basis is the same as the financial position on the Hypothetical Wind-up basis shown in the previous section. The ratio of solvency assets to solvency liabilities is 104.5%, compared to 102.1% at the previous valuation.

We have included the value of all benefits that may be contingent upon the circumstances of the plan wind-up.

We have determined the lump sum value payable to all members assumed to elect a lump sum transfer as the commuted value of their accrued benefits as defined under Section 14 of the Newfoundland Labrador Pension

Benefits Regulations. This assumes that the Superintendent of Pensions approves the payment of this amount under Paragraph 3 of Directive 9 issued under the Newfoundland Labrador Pension Benefits Act in the postulated plan wind-up. Had we determined the lump sum entitlements for those members as the estimated cost to purchase an annuity at a minimum, the solvency liabilities used would have not have changed.

6
Minimum Funding Requirements

The Act prescribes the minimum contributions that Newfoundland Power Inc. must make to the Plan. The minimum contributions in respect of a defined benefit component of a pension plan are comprised of going concern current service cost, the provision for adverse deviations in respect of the current service cost, and special payments to fund any funding shortfall or solvency shortfall that exceeds the level as set out under the Act.

There is a funding excess and no special payments are required for solvency purposes on the basis of the assumptions and methods described in this report. According to the Regulation 21 of the Pension Benefits Act (Newfoundland and Labrador), the Company may only take a contribution holiday if it does not reduce the solvency surplus to less than 10% of the value of the solvency liabilities. Since the solvency surplus is 4.5% of the solvency liabilities, no contribution holiday is permitted. Under these circumstances the Act requires the employer to contribute to the Plan the employer's current service cost.

On the basis of the assumptions and methods described in this report, the rule for determining the minimum required employer monthly contributions, as well as an estimate of the employer contributions, from the valuation date until the next required valuation are as follows:

	EMPLOYER'S CONTRIBUTION RULE		ESTIMATED EMPLOYER'S CONTRIBUTIONS		
Period beginning	Monthly current service cost[3]	Explicit monthly expense allowance	Monthly current service cost including expense allowance	Amount which can be used to reduce current service contribution	Minimum monthly contributions
January 1, 2020	16.98%	N/A	$236,500	$0	$236,500
January 1, 2021	16.98%	N/A	$230,333	$0	$230,333
January 1, 2022	16.98%	N/A	$227,500	$0	$227,500

[3] Expressed as a percentage of members' pensionable earnings for those members assumed to accrue benefits.

The estimated contribution amounts above are based on projected members' pensionable earnings. Therefore, the actual employer's current service cost and provision for adverse deviations in respect of the current service cost may be different from the above estimates and, as such, the contribution requirements should be monitored closely to ensure contributions resume in accordance with the Act.

Other Considerations

Differences between Valuation Bases

There is no provision in the minimum funding requirements to fund the difference between the hypothetical wind-up and solvency shortfalls, if any.

In addition, although minimum funding requirements do include a requirement to fund the going concern current service cost , there is no requirement to fund the expected growth in the hypothetical wind-up or solvency liability after the valuation date, which could be greater.

Timing of Contributions

Funding contributions are due on a monthly basis. Contributions for current service cost must be made within 30 days following the month to which they apply. Special payment contributions must be made in the month to which they apply.

Retroactive Contributions

The Company must contribute the excess, if any, of the minimum contribution recommended in this report over contributions actually made in respect of the period following the valuation date. This contribution, along with an allowance for interest, is due no later than 60 days following the date this report is filed.

Payment of Benefits

The solvency ratio shown in this report is not less than one. The Act imposes certain restrictions on the payment of lump sums from the plan when the solvency ratio revealed in an actuarial valuation is less than one.

Specifically, transfers out of the Plan may be made in full provided an amount equal to the transfer deficiency has been remitted to the pension fund in addition to the minimum special payments.

However, transfer deficiencies that are less than 5% of the Year's Maximum Pensionable Earnings ("YMPE") under the Canada/Quebec Pension Plan can be paid in full until such time as the sum of all such transfer deficiencies paid since the date of the last actuarial valuation exceeds 5% of the market value of the Plan assets at that date, at which time, this exemption no longer applies.

7

Maximum Eligible Contributions

The *Income Tax Act* (the "ITA") limits the amount of employer contributions that can be remitted to the defined benefit component of a registered pension plan. For purposes of this section on maximum eligible contributions only, any reference to the current service cost includes the provision for adverse deviations in respect of the current service cost.

In accordance with Section 147.2 of the ITA and *Income Tax Regulation* 8516, for a plan that is underfunded on either a going concern or on a hypothetical wind-up basis, the maximum permitted contributions are equal to the employer's current service cost, including the explicit expense allowance if applicable, plus the greater of the going concern funding shortfall and hypothetical wind-up shortfall.

For a plan that is fully funded on both going concern and hypothetical wind-up bases, the employer can remit a contribution equal to the employer's current service cost, including the explicit expense allowance if applicable, as long as the surplus in the plan does not exceed a prescribed threshold. Specifically, in accordance with Section 147.2 of the ITA, for a plan that is fully funded on both going concern and hypothetical wind-up bases, the plan may not retain its registered status if the employer makes a contribution while the going concern funding excess exceeds 25% of the going concern funding target.

Notwithstanding the above, any contributions that are required to be made in accordance with pension benefits legislation are eligible contributions in accordance with Section 147.2 of the ITA and can be remitted.

Schedule of Maximum Contributions

Since the surplus does not exceed 25% of the going concern funding target, the Company may make monthly contributions of up to 16.98% of pensionable earnings until the next valuation. The contribution requirements should be monitored closely to ensure compliance with the ITA.

8

Actuarial Opinion

In our opinion, for the purposes of the valuations,

- The membership data on which the valuation is based are sufficient and reliable.
- The assumptions are appropriate.
- The methods employed in the valuation are appropriate.

This report has been prepared, and our opinions given, in accordance with accepted actuarial practice in Canada. It has also been prepared in accordance with the funding and solvency standards set by the *Pension Benefits Act (Newfoundland and Labrador)*.

Armando Fernandes
Fellow of Society of Actuaries
Fellow of Canadian Institute of Actuaries

29 September 2020

Date

Scott Cushing
Fellow of Society of Actuaries
Fellow of Canadian Institute of Actuaries

29 September 2020

Date

Appendix A
Prescribed Disclosure

Definitions

The Act defines a number of terms as follows:

Defined Term	Description	Result
Solvency Ratio	The lesser of one and the fraction obtained by dividing the solvency assets of a pension plan by the liabilities of the plan calculated on a plan termination basis as of the latest review date and as required by the superintendent.	1.00
Solvency Assets	The market value of investments held by a pension plan plus any cash balances of the plan and accrued or receivable income items of the plan, less any amounts payable by the plan.[4]	$443,719,000
Solvency Liabilities	Liabilities of a pension plan determined on the basis that the plan is terminated or on a basis that is certified by an actuary to be reasonably approximate to that, taking into account any significant increases or decreases in pension benefits to the plan members as a result of the termination.	$424,557,000

[4] In accordance with accepted actuarial practice, for purposes of determining the financial position, the market value of plan assets was adjusted for any in-transit benefit payments, contributions, and other in transit cash flows, and reduced by a provision for estimated termination expenses payable from the Plan's assets that may reasonably be expected to be incurred in terminating the Plan and to be charged to the Plan.

Timing of Next Required Valuation

In accordance with the Act the next valuation of the Plan would be required at an effective date within three year of the current valuation date.

Accordingly, the next valuation of the Plan will be required as of December 31, 2022.

Special Payments

As the Plan does not have a funding shortall and there is a solvency excess, no special payments are required.

Appendix B
Plan Assets

The pension fund is managed by Blackrock Global Investors and held in trust with RBC Investor and Treasury Services ("RBC Investor Services").

In preparing this report, we have relied upon data provided by RBC Investor Services and Newfoundland Power Inc. for the period from December 31, 2017 to December 31, 2019. Customarily, this information would not be verified by a plan's actuary. We have reviewed the information for internal consistency and we have no reason to doubt its substantial accuracy.

Reconciliation of Market Value of Plan Assets

The pension fund transactions since the last valuation are summarized in the following table:

	2018	2019
January 1	$421,641,000	$400,714,000
PLUS		
Members' contributions	$720,000	$656,000
Company's contributions	$2,792,000	$2,770,000
Investment Income	($5,396,000)	$61,706,000
	($1,884,000)	$65,132,000
LESS		
Pensions paid	$18,034,000	$18,478,000
Lump-sums paid	$530,000	$2,789,000
Administration and investment fees	$479,000	$393,000
	$19,043,000	$21,660,000
December 31	$400,714,000	$444,186,000

	2018	2019
Gross rate of return[5]	(1.30%)	15.76%
Rate of return net of expenses[6]	(1.42%)	15.65%

The market value of assets shown in the above table is adjusted to reflect in-transit amounts as follows:

	Current Valuation	Previous Valuation
Market value of invested assets	$444,186,000	$421,641,000
In-transit amounts		
• Expenses	($110,000)	($0)
• Benefit payments	($107,000)	($0)
Market value of assets adjusted for in-transit amounts	$443,969,000	$421,641,000

We have tested the pensions paid, the lump-sums paid, and the contributions for consistency with the membership data for the Plan members who have received benefits or made contributions. The results of these tests were satisfactory.

Investment Policy

The plan administrator has adopted a statement of investment policy and procedures. This policy is intended to provide guidelines for the manager(s) as to the level of risk that is consistent with the Plan's investment objectives. A significant component of this investment policy is the asset mix.

The plan administrator is solely responsible for selecting the Plan's investment policies, asset allocations, and individual investments.

[5] Assuming mid-period cash flows.

[6] Assuming mid-period cash flows.

The constraints on the asset mix and the actual asset mix at the valuation date are provided for information purposes:

	Investment Policy			Actual asset Mix as at December 31, 2019
	Minimum	Target	Maximum	
Equities	35%	40%	45%	43%
Fixed Income	55%	60%	65%	57%
Cash and cash equivalents	0%	0%	5%	0%
		100%		100%

Appendix C
Methods and Assumptions – Going Concern

Valuation of Assets

For this valuation, we have used an adjusted market-value method to determine the smoothed value of assets. Under this method, investment gains (losses) arising during a given year are spread on a straight-line basis over three years. As a result, the asset value produced as at December 31, 2019 recognizes the following percentages of the investment gains (losses) that arose during the past years:

Year	Recognized	Deferred
2017 and before:	100%	0%
2018:	67%	33%
2019:	33%	67%

The asset values produced by this method are related to the market value of the assets, with the advantage that, over time, the market-related asset values will tend to be more stable than market values. To the extent that more investment gains than losses will arise over the long term, the smoothed value will tend to be lower than the market value.

The actuarial value of the assets, determined as at December 31, 2019 under the adjusted market value method, is $424,814,000.

The smoothed value of the assets at December 31, 2019 was derived as follows:

Market value of assets		$443,969,000
LESS		
Unrecognized investment	2018: ($26,373,000) × 33% =	($8,791,000)
gains/(losses)	2019: $41,919,000 × 67% =	$27,946,000
		$19,155,000
Smoothed value of assets		$424,814,000

Going Concern Funding Target

Over time, the real cost to the employer of a pension plan is the excess of benefits and expenses over member contributions and investment earnings. The actuarial cost method allocates this cost to annual time periods.

For purposes of the going concern valuation, we have continued to use the projected unit credit actuarial cost method. Under this method, we determine the present value of benefit cash flows expected to be paid in respect of service accrued prior to the valuation date, based on projected final average earnings. This is referred to as the funding target.

The funding excess or funding shortfall, as the case may be, is the difference between the market or smoothed value of assets and the funding target. A funding excess on a market value basis indicates that the current market value of assets and expected investment earnings are expected to be sufficient to meet the cash flows in respect of benefits accrued to the valuation date as well as expected expenses – assuming the plan is maintained indefinitely. A funding shortfall on a market value basis indicates the opposite – that the current market value of the assets is not expected to be sufficient to meet the plan's cash flow requirements in respect of accrued benefits, absent additional contributions.

As required under the Act, a funding shortfall must be amortized over no more than 15 years through special payments beginning one year after the valuation date. A funding excess may, from an actuarial standpoint, be applied immediately to reduce required employer current service contributions unless precluded by the terms of the plan or by legislation.

The actuarial cost method used for the purposes of this valuation produces a reasonable matching of contributions with accruing benefits. Because benefits are recognized as they accrue, the actuarial cost method provides an effective funding target for a plan that is maintained indefinitely.

Current Service Cost

The current service cost is the present value of projected benefits to be paid under the plan with respect to service expected to accrue during the period until the next valuation.

The employer's current service cost is the total current service cost reduced by the members' required contributions.

The employer's current service cost has been expressed as a percentage of the members' pensionable earnings to provide an automatic adjustment in the event of fluctuations in membership and/or pensionable earnings.

Under the projected unit credit actuarial cost method, the current service cost for an individual member will increase each year as the member approaches retirement. However, the current service cost of the entire group, expressed as a percentage of the members' pensionable earnings, can be expected to remain stable as long as the average age distribution of the group remains constant.

Given that the Newfoundland Power Retirement Income Plan is closed to new entrants, the average age of the group is expected to increase in the future and therefore, the current service cost of the group, expressed as a percentage of the member's pensionable earnings, can be expected to increase as well.

Actuarial Assumptions – Going Concern Basis

The present value of future benefit payment cash flows is based on economic and demographic assumptions. At each valuation we determine whether, in our opinion, the actuarial assumptions are still appropriate for the purposes of the valuation, and we revise them, if necessary. Emerging experience will result in gains or losses that will be revealed and considered in future actuarial valuations.

The table below shows the various assumptions used in the current valuation in comparison with those used in the previous valuation.

Assumption	Current valuation	Previous valuation
Discount rate:	4.45%	4.95%
Inflation:	2.00%	2.00%

Assumption	Current valuation	Previous valuation
ITA limit / YMPE increases:	3.00%	3.00%
Pensionable earnings increases:	3.50%[7]	3.50%[8]
Post-retirement pension increases:	None	None
Interest on employee contributions:	4.45%	4.95%
Retirement:	One year after the later of the date the member would obtain age 60 and age plus service would total 95 (unreduced eligible date) but not later than age 65.	One year after the later of the date the member would obtain age 60 and age plus service would total 95 (unreduced eligible date) but not later than age 65.
Termination rates:	None	Age-related table
Mortality rates:	100% of the rates of the 2014 Private Sector Canadian Pensioners Mortality Table (CPM2014Priv)	100% of the rates of the 2014 Private Sector Canadian Pensioners Mortality Table (CPM2014Priv)
Mortality improvements:	Fully generational using CPM Improvement Scale B (CPM-B)	Fully generational using CPM Improvement Scale B (CPM-B)
Disability rates:	None	None
Eligible spouse at retirement:	80%	80%
Spousal age difference:	Male 3 years older	Male 3 years older

The assumptions are best-estimates and do not include a margin for adverse deviations.

[7] 0.00% increase in Pensionable earnings assumed for disabled members

Pensionable Earnings

The benefits ultimately paid will depend on each member's final average earnings. To calculate the pension benefits payable upon retirement, death, or termination of employment, we have taken 2019 pensionable earnings and assumed that such pensionable earnings will increase at the assumed rate.

Rationale for Assumptions

A rationale for each of the assumptions used in the current valuation is provided below.

Discount Rate

We have discounted the expected benefit payment cash flows using the expected investment return on the market value of the fund net of fees and less a margin for adverse deviations. Other bases for discounting the expected benefit payment cash flows may be appropriate, particularly for purposes other than those specifically identified in this valuation report.

The discount rate is comprised of the following:

- An **assumed investment return** based on estimated returns for each major asset class that are consistent with market conditions on the valuation date modified to include a provision for increases in market interest rates to a level higher than current historically low levels, on the expected time horizon over which benefits are expected to be paid, and on the target asset mix specified in the Plan's investment policy.

- An **assumed passive investment management expense provision** which represents the hypothetical fees for passive investment management of assets based on estimated fees charged by index managers for balanced mandates.

- An **implicit non-investment management expense provision** determined as the average rate of non-investment expenses paid from the fund over the last 3 years.

- A **margin for adverse deviations** of 0.00% as per the terms of engagement

The discount rate was developed as follows:

Assumed investment return	4.55%
Assumed passive investment management expense provision	(0.05%)
Implicit non-investment management expense provision	(0.05%)
Margin for adverse deviations	(0.00%)
Net discount rate	4.45%

Inflation

The inflation assumption is based on the mid-point of the Bank of Canada's inflation target range of between 1% and 3%.

Income Tax Act Pension Limit and Year's Maximum Pensionable Earnings

The assumption is based on historical real economic growth and the underlying inflation assumption.

Pensionable Earnings

The assumption is based on general wage growth assumptions increased by our best estimate of future merit and promotional increases over general wage growth considering current economic and financial market conditions and company expectations.

Retirement Rates

Due to the size of the Plan, there is no meaningful retirement experience. The assumption is based on the Plan provisions and our experience with similar plans and employee groups.

Termination Rates

Due to the size of the Plan, there is no meaningful termination experience. Further, the assumption is not material to the valuation for this closed employee group given their age.

Mortality Rates

The assumption for the mortality rates is based on the Canadian Pensioners' Mortality (CPM) study published by the Canadian Institute of Actuaries in February 2014.

Due to the size of the Plan, specific data on plan mortality experience is insufficient to determine the mortality rates. It was determined to use the CPM mortality rates from the private sector without adjustment after considering plan-specific characteristics, such as the type of employment, the industry experience, the pension and employment income for the plan members, and data in the CPM study.

There is broad consensus among actuaries and other longevity experts that mortality improvement will continue in the future, but the degree of future mortality improvement is uncertain. Two mortality improvement scales were recently published by the Canadian Institute of Actuaries (CIA) and may apply to Canadian pension valuations:

- The Canadian Pensioners Mortality (CPM) study published in February 2014 included CPM Improvement Scale B (CPM-B).
- A report released by the Task Force on Mortality Improvement on September 20, 2017 includes an analysis of the rate of mortality improvement for the Canadian population and provides for mortality improvement scale MI-2017 to be considered for the purpose of reflecting future mortality improvement in Canadian actuarial work, while acknowledging that it might be appropriate to use alternative mortality improvement assumptions to reflect the nature of the work.

The CIA Committee on Pension Plan Financial Reporting published a revised version of the Educational Note on the Selection of Mortality Assumptions for Pension Plan Valuations on December 21, 2017. The Educational Note indicates that given the recent publication of the CPM-B and MI-2017 improvement scales and the similar data sets used in their development, it may be appropriate to use either scale in the absence of credible information to the contrary, such as the publication of a successor scale by the CIA.

For the present valuation, we have continued to use the CPM-B scale, which is a reasonable outlook for future mortality improvement.

Based on the assumption used, the life expectancy of a member age 65 at the valuation date is 21.8 years for males and 24.2 years for females.

Interest on Employee Contributions

The assumption is based on Plan terms and the underlying investment return assumption.

Disability Rates

Use of a different assumption would not have a material impact on the valuation.

Eligible Spouse

The assumption is based on an industry standard for non-retired members (actual status used for retirees).

Spousal Age Difference

The assumption is based on an industry standard showing males are typically 3 years older than their spouse.

Appendix D

Methods and Assumptions – Hypothetical Wind-Up and Solvency

Hypothetical Wind-up Basis

The Canadian Institute of Actuaries requires actuaries to report the financial position of a pension plan on the assumption that the plan is wound up on the effective date of the valuation, with benefits determined on the assumption that the pension plan has neither a surplus nor a deficit. For the purposes of the hypothetical wind-up valuation, the plan wind-up is assumed to occur in circumstances that maximize the actuarial liability.

To determine the actuarial liability on the hypothetical wind-up basis, we have valued those benefits that would have been paid had the Plan been wound up on the valuation date, with all members fully vested in their accrued benefits.

The Standards of Practice of the Canadian Institute of Actuaries require that the scenario upon which the hypothetical wind-up valuation is based be postulated. However, there are no benefits under the Plan contingent upon the circumstances of the plan wind-up or contingent upon other factors. Therefore, it was not necessary to postulate a scenario upon which the hypothetical wind-up valuation is made. No benefits payable on plan wind-up were excluded from our calculations. The plan wind-up is assumed to occur in circumstances that maximize the actuarial liability.

The circumstances in which the plan wind-up is assumed to have taken place are as follows:

- Total wind-up in conjunction with cessation of the plan sponsor's operations.
- No benefits payable on plan wind-up were excluded from our calculations.

Upon plan wind-up, members are given options for the method of settling their benefit entitlements. The options vary by eligibility and by province of employment, but in general, involve either a lump sum transfer or an immediate or deferred pension.

The value of benefits assumed to be settled through a lump sum transfer is based on the assumptions described in Section 3500 – *Pension Commuted Values* of the Canadian Institute of Actuaries' Standards of Practice applicable for December 31, 2019.

Benefits provided as an immediate or deferred pension are assumed to be settled through the purchase of annuities based on an estimate of the cost of purchasing annuities.

We have estimated the cost of settlement through purchase of annuities in accordance with the *Canadian Institute of Actuaries Educational Note: Assumptions for Hypothetical Wind-up and Solvency Valuations with Effective Dates Between December 31, 2019 and December 30, 2020 (the "Educational Note").*

The Educational Note provides guidance on estimating the cost of annuity purchases assuming a typical group of annuitants. That is, no adjustments for sub- or super-standard mortality are considered. However, it is expected that insurers will consider plan experience and certain plan-specific characteristics when determining the mortality basis for a particular group. The Educational Note states that the actuary would be expected to make an adjustment to the regular annuity purchase assumptions where there is demonstrated substandard or super-standard mortality or where an insurer might be expected to assume so. In such cases, the actuary would be expected to make an adjustment to the mortality assumption in a manner consistent with the underlying annuity purchase basis. Given the uncertainty surrounding the actual mortality basis that would be typical of a group annuity purchase, it is reasonable to assume that there is a range of bases that can be expected not to be materially different from the actual mortality basis. Therefore, an adjustment to the regular annuity purchase assumptions would be warranted when the plan's assumed basis falls outside that range.

In this context, we have determined that no adjustment to the mortality rates used in the regular annuity purchase assumptions is required.

We have not included a margin for adverse deviations in the solvency and hypothetical wind-up valuations.

The assumptions are as follows:

Form of Benefit Settlement Elected by Member	
Lump sum:	70% of active members under age 55, and 50% of active members over age 55, elect to receive their benefit entitlement in a lump sum
Annuity purchase:	All remaining members are assumed to elect to receive their benefit entitlement in the form of a deferred or immediate pension. These benefits are assumed to be settled through the purchase of deferred or immediate annuities from a life insurance company.

Basis for Benefits Assumed to be Settled through a Lump Sum	
Mortality rates:	100% of the rates of the 2014 Canadian Pensioners Mortality Table (CPM2014) with fully generational improvements using CPM Scale B
Interest rate:	2.40% per year for 10 years, 2.50% per year thereafter
Basis for Benefits Assumed to be Settled through the Purchase of an Annuity	
Mortality rates:	100% of the rates of the 2014 Canadian Pensioners Mortality Table (CPM2014) with fully generational improvements using CPM Scale B
Interest rate:	2.96% per year based on a duration of 11.83 years determined for the liabilities assumed to be settled through the purchase of an annuity.
Retirement Age	
Maximum value:	Members are assumed to retire at the age that maximizes the value of their entitlement from the Plan, based on the eligibility requirements that have been met at the valuation date
Other Assumptions	
Final average earnings:	Based on actual pensionable earnings over the averaging period
Family composition:	Same as for going concern valuation
Maximum pension limit:	$3,092.22 for 2020 and increasing at 2.20% per year for 9 years starting in 2019, 2.29% per year thereafter
Termination expenses:	$250,000

To determine the hypothetical wind-up position of the Plan, a provision has been made for estimated termination expenses payable from the Plan's assets in respect of actuarial and administration expenses that may reasonably be expected to be incurred in terminating the Plan and to be charged to the Plan.

Because the settlement of all benefits on wind-up is assumed to occur on the valuation date and is assumed to be uncontested, the provision for termination expenses does not include custodial, investment management, auditing, consulting, and legal expenses that would be incurred between the wind-up date and the settlement date or due to the terms of a wind-up being contested.

Expenses associated with the distribution of any surplus assets that might arise on an actual wind-up are also not included in the estimated termination expense provisions.

In determining the provision for termination expenses payable from the Plan's assets, we have assumed that the plan sponsor would be solvent on the wind-up date. We have also assumed, without analysis, that the Plan's terms as well as applicable legislation and court decisions would permit the relevant expenses to be paid from the Plan.

Although the termination expense assumption is a best estimate, actual fees incurred on an actual plan wind-up may differ materially from the estimates disclosed in this report.

Incremental Cost

In order to determine the incremental cost, we estimate the hypothetical wind-up liabilities at the next valuation date. We have assumed that the cost of settling benefits by way of a lump sum or purchasing annuities remains consistent with the assumptions described above. Since the projected hypothetical wind-up liabilities will depend on the membership in the Plan at the next valuation date, we must make assumptions about how the Plan membership will evolve over the period until the next valuation.

We have assumed that the Plan membership will evolve in a manner consistent with the going concern assumptions as follows:

- Members terminate, retire, and die consistent with the termination, retirement, and mortality rates used for the going concern valuation.
- Pensionable earnings, the Income Tax Act pension limit, and the Year's Maximum Pensionable Earnings increase in accordance with the related going concern assumptions.
- Active members accrue pensionable service in accordance with the terms of the Plan.

Solvency Basis

In determining the financial position of the Plan on the solvency basis, we have used the same assumptions and methodology as were used for determining the financial position of the Plan on the hypothetical wind-up basis.

The solvency position is determined in accordance with the requirements of the Act.

Appendix E
Membership Data

Analysis of Membership Data

The actuarial valuation is based on membership data as at December 31, 2019, provided by Newfoundland Power Inc.

We have applied tests for internal consistency, as well as for consistency with the data used for the previous valuation. These tests were applied to membership reconciliation, basic information (date of birth, date of hire, date of membership, gender, etc.), pensionable earnings, credited service, contributions accumulated with interest, and pensions to retirees and other members entitled to a deferred pension. Contributions, lump sum payments, and pensions to retirees were compared with corresponding amounts reported in financial statements. The results of these tests were satisfactory.

If the data supplied are not sufficient and reliable for its intended purpose, the results of our calculation may differ significantly from the results that would be obtained with such data. Although Mercer has reviewed the suitability of the data for its intended use in accordance with accepted actuarial practice in Canada, Mercer has not verified or audited any of the data or information provided.

Plan membership data are summarized below. For comparison, we have also summarized corresponding data from the previous valuation.

	31.12.2019	31.12.2017
Active Members		
Number	197	237
Total pensionable earnings for the following year	$19,767,059	$22,664,566
Average pensionable earnings for the following year	$100,340	$95,631
Average years of pensionable service	29.2 years	28.2 years
Average age	56.0 years	54.8 years
Accumulated contributions with interest	$16,734,440	$18,775,561

	31.12.2019	31.12.2017
Disabled Members		
Number	15	30
Total pensionable earnings for the following year	$1,086,897	$2,076,581
Average pensionable earnings for the following year	$72,460	$69,219
Average years of pensionable service	34.1 years	33.4 years
Average age	59.4 years	59.2 years
Accumulated contributions with interest	$937,617	$1,793,645
Deferred Pensioners		
Number	7	10
Total annual pension	$130,078	$220,233
Average annual pension	$18,583	$22,023
Average age	51.2 years	49.7 years
Pending		
Number	2	1
Pensioners and Survivors		
Number	773	761
Total annual lifetime pension	$16,273,847	$14,981,340
Total annual temporary pension	$2,155,721	$2,543,554
Average annual lifetime pension	$21,053	$19,686
Average age	73.0 years	72.3 years

The membership movement for all categories of membership since the previous actuarial valuation is as follows:

	Actives	Disabled Members	Deferred Pensioners	Pending	Pensioners	Survivors	Total
Total at 31.12.2017	237	30	10	1	606	155	1,039
To Disabled	(3)	3					
Return To Active	5	(5)					
Terminations:							
• Transfers/lump sums		(2)	(4)				(6)
• Deferred pensions	(2)	(1)	2	1			
Deaths	(2)				(29)	(23)	(54)
Retirements	(38)	(10)			48		
Beneficiaries						16	16
Data Correction			(1)				(1)
Total at 31.12.2019	197	15	7	2	625	148	994

The distribution of the active members by age and pensionable service as at the valuation date is summarized as follows:

		Years of Pensionable Service							
Age	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35+	Total
Under 20									
20 to 24									
25 to 29									
30 to 34									
35 to 39									
40 to 44				3	3				6
45 to 49				4	8	2			14
50 to 54				8	14	23	17	1	63
55 to 59				2	8	7	39	17	73
60 to 64				2	4	8	8	12	34
65 +						1	3	3	7
Total				19	37	41	67	33	197

The distribution of the inactive members by age as at the valuation date is summarized as follows:

	Deferred Pensioners			Pensioners and Survivors			
Age	Number	Average Pension		Number	Average Pension	Number	Average Bridge
< 45	1	$*					
45 – 49	1	$*					
50 – 54	4	$17,284					
55 – 59	1	$*		16	$35,527	14	$20,179
60 – 64				111	$35,852	99	$19,817
65 – 69				197	$27,774		
70 – 74				170	$16,408		
75 – 79				107	$12,882		
80 – 84				100	$12,338		
85 – 89				43	$12,447		
90 – 94				23	$8,942		
95 – 99				6	$18,626		
100 +							
Total	7	$18,583		773	$21,053	113	$19,862

*suppressed for confidentiality

Appendix F
Summary of Plan Provisions

Mercer has used and relied on the plan documents, including amendments and interpretations of plan provisions, supplied by Newfoundland Power Inc. If any plan provisions supplied are not accurate and complete, the results of any calculation may differ significantly from the results that would be obtained with accurate and complete information. Moreover, plan documents may be susceptible to different interpretations, each of which could be reasonable, and the results of estimates under each of the different interpretations could vary.

This valuation is based on the plan provisions in effect on December 31, 2019. Since the previous valuation, the Plan has not been amended.

The following is a summary of the main provisions of the Plan in effect on December 31, 2019. This summary is not intended as a complete description of the Plan.

Background	The Plan became effective April 1, 1984. Effective May 1, 2004, the plan was closed to new entrants.
Eligibility for Membership	Each employee hired before the effective date of this plan is eligible to participate. Each employee hired on or after the effective date shall become a member of the plan on the first day of employment. Membership was optional for employees transferred from an affiliated company, for employees hired or designated as manager or executive, and for non-bargaining unit employees hired on or after August 1, 2003.

Employee Contributions	The members are contributing to the plan at the rate of 3 1/3% of their salary up to the Year's Maximum Pensionable Earnings (YMPE) and 5% of their salary in excess of the YMPE. For 1984, the members were contributing at the rate of 60% (2%/3%) of their full rate starting on April 1st. No contributions shall be required to be made beyond 35 years of service. However, members may elect to make contributions beyond completion of 35 years, up to the maximum of $1,000, in order to attain higher final average earnings. Interest shall be credited on member contributions at a rate not less than the rate at issue of the last Canada Savings Bond issued prior to the start of the calendar year. Effective January 1, 1997, interest shall be credited based on the average of the yields on 5-year personal fixed term chartered bank deposits published in the Bank of Canada Review as CANSIM Series V122515. Additional voluntary contributions are not permitted after January 1, 1992. The Company is contributing the remaining cost for current service and the cost for past service. The YMPE, or Year's Maximum Pensionable Earnings, refers to the maximum annual amount of earnings upon which an employee and an employer contribute to the Canada/Québec Pension Plan (C/QPP).
Retirement Dates	Normal Retirement Date • The normal retirement date is the first day of the month coincident with or next following the member's 65th birthday.
Normal Retirement Pension	Upon normal retirement a member is entitled to an annual pension equal to 1 1/3% of the average of his best 36 months of earnings during which contributions were made up to the final average YMPE plus 2% of such best average earnings in excess of the average of the final 36 months YMPE for each year of credited service (up to a maximum of 35 years).

Normal Form Of Pension	**With Spouse:** The normal form of pension under the Plan is a Joint and Survivor pension, payable monthly for the life of the Member. Upon the death of the member, 55% of such pension is payable to the Member's Spouse for the Spouse's lifetime, with the minimum benefit being a refund of contributions with interest. The legislated form of pension without a spousal waiver is equal to 60% of the monthly pension paid to the Member. This joint and survivor pension will be the actuarial equivalent of the Joint and Survivor 55% pension. **Without Spouse:** The normal form of pension under the Plan is a life pension payable monthly for the life of the member, with the minimum benefit being a refund of contributions with interest.
Early Retirement Pension	An early retirement pension without reduction is payable if the member has both attained age 60 and has a combined total years of age plus service of 95. An early retirement pension with a subsidized reduction is permissible if the member's age plus service is 85 or greater. The amount of the reduction is: • if the member's years of age plus service total 95 or more – 1/4% for each month before age 60, and • if the member's years of age plus service total less than 95 - 1/3% for each month before the earliest date at which the member could have elected unreduced retirement. Early retirement is permitted after attaining age 55 with a pension that is actuarially reduced from age 65.

Maximum Pension

The total annual pension payable from the Plan upon retirement, death or termination of employment cannot exceed the lesser of:

- 2% of the average of the best three consecutive years of total compensation paid to the member by the Company, multiplied by total credited service; and
- $3,092.22 or such other maximum permitted under the Income Tax Act, multiplied by the member's total credited service.

Death Benefits	**Pre-retirement: Post-1996 Service** **With Spouse:** If a Member dies before the Member's pension commences, the Member's Spouse is entitled to a pension the Commuted Value of which is equal to the greater of (1) or (2) as follows: • the Commuted Value of an immediate pension in respect of Member's Credited Service on and after January 1, 1997 equal to 55% of the Member's pension accrued at the date of death; or, • the Commuted Value of the Member's pension accrued on and after January 1, 1997. **Minimum Death Benefit** Notwithstanding the foregoing, if a Member dies before the Member's pension commences but after becoming eligible for retirement, the death benefit payable to the Spouse will not be less than 60% of the pension accrued on and after January 1, 1997, that would have been paid to the Member pursuant to the minimum legislated form of pension benefits (determined as if the Member had retired the day before his death). **Without Spouse:** If a Member dies before the Member's pension commences and at the date of death, the Member does not have a Spouse, the death benefit payable under the Plan, in a lump sum to the Beneficiary, is equal to the Commuted Value of the pension accrued on and after January 1, 1997. **Pre-retirement: Pre-1997 Service** **With Spouse** If a Member dies before the Member's pension commences, the Member's Spouse is entitled to an immediate pension in respect of Member's Credited Service prior to January 1, 1997 equal to 55% of the Member's pension accrued as at January 1, 1997. **Minimum Death Benefit** Notwithstanding the foregoing, if a Member dies before the Member's pension commences but after becoming eligible for retirement, the death benefit

payable to the Spouse will not be less than 60% of the pension accrued before January 1, 1997, that would have been paid to the Member pursuant to the minimum legislated form of pension benefits (determined as if the Member had retired the day before his death).

Without Spouse

If a Member dies before the Member's pension commences and at the date of death, the Member does not have a Spouse, the death benefit payable under the Plan in a lump sum to the Beneficiary, is equal to the Member's required contributions made to the Plan before January 1, 1997, plus interest.

Post retirement:

The normal form of payment for a member with a spouse at retirement is a joint and survivor pension with 55% of the member's pension continuing to the surviving spouse. However, the member may elect to receive an optional form of pension on an actuarial equivalent basis.

The normal form of payment for a member without a spouse is pension payable for the member's lifetime. However, in no case shall the total of pension payments paid to the member prior to death be less than the member's accumulated contributions with interest at pension commencement.

Termination Benefits

Pension Benefit Accrued Prior to January 1, 1997

Prior to Completion of 5 Years of Service

A member who terminates his/her employment after December 31, 1996 but prior to completing 5 years of service will receive a refund of his/her accumulated contributions made prior to January 1, 1997 with interest.

After Completion of 5 Years of Service

A member terminates his/her employment after December 31, 1996 and after completing 5 years of membership service will receive the termination benefit equal to the greater of:

- 2 times his/her Pre 1997 Accumulated Member Contributions provided he/she has completed 5 years of service; and
- the actuarial value of his pension benefit accrued prior to January 1, 1997.

The member has the choice of receiving:

- a deferred pension with respect to his pension benefit accrued before December 31, 1996; or
- a refund of his/her Member Contributions and the balance of his/her termination benefit as determined above.

Notwithstanding the above, a member who has attained age 45 and has 10 years or more of service is entitled to either a deferred pension or a transfer to a locked-in RRSP of the value of his termination benefits, as determined above.

Pension Benefits Accrued After December 31, 1996

Prior to Completion of 2 Years of Membership Service

A member who terminates his/her employment after December 31, 1996 before completing 2 years of membership service will receive a refund of his/her accumulated contributions made after December 31, 1996 with interest ("Post 1996 Accumulated Member Contributions").

Completion of 2 Years of Membership Service

A member terminates his/her employment after December 31, 1996 with 2 years of membership service will receive the termination benefit equal to the greater of:

- 2 times his/her Post 1996 Accumulated Member Contributions provided he/she has completed 5 years of service; and
- The sum of:
  - the actuarial value of his pension benefit accrued after December 31, 1996.
  - the excess, if any, of the Post 1996 Accumulated Member Contributions over 50% of the actuarial value of his/her pension benefit accrued after December 31, 1996 ("Excess Member Contribution").

The member has the choice of receiving:

- a deferred pension with respect to his pension benefit accrued after December 31, 1996 plus a refund of his/her Excess Member Contribution; or
- a refund of his/her Excess Member Contributions plus a transfer of the balance of the termination benefit, as determined above, transferred to a locked-in RRSP.

Appendix G
Plausible Adverse Scenarios

In this Appendix, the financial impact on the Plan's going concern results (i.e., going concern financial position at the valuation date and current service cost from the valuation date to the next valuation date) of plausible adverse scenarios that would pose threats to the Plan's future financial condition is illustrated for the following risks:

- Interest rate risk, the potential that interest rates will be lower than expected;
- Deterioration of asset values; and
- Longevity risk, the potential that pension plan members will live longer than expected.

The following table summarizes the results, where we assumed for:

- Interest rate risk, an immediate parallel decrease in market interest rates of 90 basis points
- Deterioration of asset values, an immediate decrease of 14% in the market value of non-fixed income assets; and
- Longevity risk, that life expectancy from the valuation date at age 65 for a male and a female would increase by 1.5 years and 1.4 years, respectively.

	GOING CONCERN VALUATION RESULTS AS AT December 31, 2019	PLAUSIBLE ADVERSE SCENARIO RESULTS AS AT December 31, 2019		
		INTEREST RATE RISK	DETERIORATION OF ASSET VALUES	LONGEVITY RISK
Market value of assets	$443,969,000	$479,340,000	$417,222,000	$443,969,000
Going Concern Financial Status				
Smoothed value of assets	$424,814,000	$436,604,000	$415,898,000	$424,814,000
Going concern funding target	$357,240,000	$377,433,000	$357,240,000	$369,517,000
Funding excess (shortfall)	$67,574,000	$59,171,000	$58,658,000	$55,297,000

	GOING CONCERN VALUATION RESULTS AS AT December 31, 2019	PLAUSIBLE ADVERSE SCENARIO RESULTS AS AT December 31, 2019		
		INTEREST RATE RISK	DETERIORATION OF ASSET VALUES	LONGEVITY RISK
Estimated Employer's Current Service Cost				
January 1, 2020	$2,838,000	$3,127,000	$2,838,000	$2,994,000
January 1, 2021	$2,764,000	$3,045,000	$2,764,000	$2,916,000
January 1, 2022	$2,730,000	$3,008,000	$2,730,000	$2,880,000

The balance of this Appendix provides details of the plausible adverse scenarios selected and the determination of their impact on valuation results.

Interest Rate Risk

The purpose of this scenario is to illustrate the sensitivity of the Plan's valuation results to the potential that interest rates will be lower than expected. For this purpose, we have assumed an immediate parallel decrease in market interest rates underlying fixed income investments, where fixed income investments include the following categories as shown in the investment policy summarized in Appendix B.

Using a methodology consistent with the one used to determine the going concern discount rate, we have determined that a parallel decrease in market interest rates of 90 basis points would have a non-trivial probability (between 1 in 10 and 1 in 20) of occurring within the year following the valuation date. For purpose of this scenario, we have assumed that such a decrease in market interest rates would occur immediately on the valuation date and would have the following impact on the value of assets and going concern assumptions:

Defined Term	Description
Market value of assets	The decrease in market interest rates has been assumed to affect only the market value of the fixed income investments. The decrease is assumed to have occurred immediately on the valuation date.

Defined Term	Description
Smoothed value of assets	For purposes of determining the smoothed value of assets, 33% of the change in the market value of asset has been recognized in the smoothed value of assets.
Discount rate assumption	It was assumed that the decrease in market interest rates affects only the expected return on assets for the fixed income portion of assets. The same margin for adverse deviations was used. The discount rate assumption was therefore decreased from 4.45% to 3.90%.
Other assumptions	Except as mentioned above, all assumptions used were the same as those used for this valuation.

Deterioration of Asset Values

The purpose of this scenario is to illustrate the sensitivity of the Plan's valuation results to a deterioration of asset values. For this purpose, we assumed an immediate reduction in the market value of the Plan's non-fixed income assets, where non-fixed income investments include the following categories as shown in the investment policy summarized in Appendix B.

Using a methodology consistent with the one used to determine the going concern discount rate, we have determined that a decrease of 14% in the market value of value of non-fixed income assets would have a non-trivial probability (between 1 in 10 and 1 in 20) of occurring within the year following the valuation date. For purpose of this scenario, we have assumed that such a decrease would occur immediately on the valuation date and would have the following impact on the value of assets and valuation assumptions:

Market value of assets	The decrease in the market value of the non-fixed income portion of assets is assumed to have occurred immediately on the valuation date.
Smoothed value of assets	For purposes of determining the smoothed value of assets, 33% of the change in the market value of assets has been recognized in the smoothed value of assets.
Going concern assumptions	This scenario is assumed to have no impact on the assumptions used for this valuation.

Longevity Risk

The purpose of this scenario is to illustrate the sensitivity of the Plan's valuation results to the potential that pension plan members will live longer than expected. For this purpose, we have determined that a plausible adverse scenario would be to assume that future mortality improvements[8] will be in line with the average improvements experienced by the Canadian population over the most recent 15-year period available, with uniform improvement rates for all future years but varying by age[9] and gender.

The table below summarizes the improvement rates under the plausible adverse scenario compared to those currently assumed under the CPM-B scale and is based on Canadian population experience from the Human Mortality Database (HMD) from 2002 to 2016.

	males				Females			
	CPM-B			Adverse	CPM-B			Adverse
Age	2020	2025	2030+	Scenario	2020	2025	2030+	Scenario
20	1.59%	1.20%	0.80%	1.68%	0.98%	0.89%	0.80%	1.47%
30	1.88%	1.34%	0.80%	1.68%	0.98%	0.89%	0.80%	1.47%
40	1.80%	1.30%	0.80%	1.68%	1.17%	0.98%	0.80%	1.47%
50	1.17%	0.98%	0.80%	1.76%	0.98%	0.89%	0.80%	1.34%
55	1.47%	1.13%	0.80%	1.67%	1.11%	0.96%	0.80%	1.14%
60	1.77%	1.28%	0.80%	1.75%	1.24%	1.02%	0.80%	1.34%
65	2.06%	1.43%	0.80%	2.11%	1.36%	1.08%	0.80%	1.65%
70	2.06%	1.43%	0.80%	2.48%	1.36%	1.08%	0.80%	1.77%
75	2.01%	1.41%	0.80%	2.66%	1.36%	1.08%	0.80%	1.93%

[8] i.e. starting one year after the valuation in this context

[9] improvement rates below age 45 are set to those at age 45

	males				Females			
	CPM-B			Adverse	CPM-B			Adverse
Age	2020	2025	2030+	Scenario	2020	2025	2030+	Scenario
80	1.96%	1.38%	0.80%	2.63%	1.36%	1.08%	0.80%	2.03%
85	1.38%	1.03%	0.68%	2.32%	1.31%	0.99%	0.68%	1.98%
90	0.75%	0.62%	0.48%	1.68%	0.75%	0.62%	0.48%	1.60%
95	0.16%	0.25%	0.34%	1.04%	0.16%	0.25%	0.34%	1.12%
100	0.14%	0.22%	0.30%	0.64%	0.14%	0.22%	0.30%	0.80%
105	0.14%	0.22%	0.30%	0.38%	0.14%	0.22%	0.30%	0.55%

Appendix H
Employer Certification

With respect to the Report on the Actuarial Valuation for Funding Purposes as at December 31, 2019 of the Newfoundland Power Inc. Retirement Income Plan, I hereby certify that, to the best of my knowledge and belief:

- The valuation reflects the terms of the Newfoundland Power Inc.'s engagement with the actuary described in Section 2 of this report, particularly the requirement to not reflect a margin for adverse deviations in the going concern valuation and the Company's decisions in regards to determining the going concern and solvency funding requirements.
- A copy of the official plan documents and of all amendments made up to December 31, 2019 was provided to the actuary and is reflected appropriately in the summary of plan provisions contained herein.
- The asset information summarized in Appendix B is reflective of the Plan's assets.
- The membership data provided to the actuary included a complete and accurate description of every person who is entitled to benefits under the terms of the Plan for service up to December 31, 2019.
- All events subsequent to December 31, 2019 that may have an impact on the Plan have been communicated to the actuary.

September 29/2020
Date

Signed

Paige London
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