



ALBERTA GRID RISK SHARING POOL

JANUARY 2020 OPERATIONAL REPORT

ACTUARIAL HIGHLIGHTS

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ACTUARIAL HIGHLIGHTS

RSP ALBERTA GRID

OPERATIONAL REPORT

JANUARY 2020

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1 Summary

Key Points

- (a) At its Feb. 18, 2020 meeting, the FA Board appointed Mr. Cosimo Pantaleo of Ernst & Young LLP (EY) for fiscal year-end 2019. Recall that Mr. Pantaleo was Acting Appointing Actuary following the resignation of Mr. Liam McFarlane in October 2019. Mr. Pantaleo’s appointment was approved by FA Members for fiscal year 2020 at the FA Annual General Meeting held on February 20, 2020.
- (b) The month’s claims activities were generally aligned with projections from last month.

1.1 Valuation Schedule (Fiscal Year 2020)

The January 2020 Operational Report leverages actuarial assumptions consistent with last month (that is, it does not reflect the results of an updated valuation). The table below summarizes the implemented valuations for fiscal year 2020.

ALBERTA GRID RISK SHARING POOL FISCAL YEAR 2020 – SCHEDULE OF VALUATIONS			
Valuation Date	Discount Rate (per annum)	Operational Report	Description of Changes
Sep. 30, 2019 (completed)	1.44% mfad 25 bp	Oct. 2019	updated valuation (roll forward): accident year 2019 loss ratio <u>d</u> ecreased 2.4 points to 84.4%; discount rate <u>i</u> ncreased 3 basis points; no change to selected margins for adverse deviations
Dec. 31, 2019	% mfad -- bp	Mar. 2020	update valuation
Mar. 31, 2020	% mfad -- bp	May 2020	update valuation (roll-forward)
Jun. 30, 2020	% mfad -- bp	Aug. 2020	update valuation
Sep. 30, 2020	% mfad -- bp	Oct. 2020	update valuation (roll-forward)

Under the proposed schedule for fiscal year 2020, the off-half valuation quarters ending March 31, 2020 and September 30, 2020 would not reflect a full valuation update of assumptions, but would rather roll-forward key assumptions from the previous valuation.

1.2 Appointed Actuary and Hybrid Actuarial Services Model

Mr. Cosimo Pantaleo of Ernst & Young LLP (EY) was appointed as Actuary by the FA Board at its February 18, 2020 meeting.

Facility Association operates under a hybrid model in relation to the management and provision of actuarial services. Under this model, actuarial services are performed by both Facility Association’s

internal staff and its external actuarial consulting firm. The hybrid model approach maximizes the efficiency of resource allocation while providing access to additional expertise and capacity as needed.

1.3 Consideration of Recent Legal Decisions and Changes in Legislation / Regulation¹

There have been no changes in these descriptions since last month's Highlights, other than clarification that recent refers to events within the last five years.

Consideration and assessment of potential impacts of legal decisions and changes in legislation / regulation constitutes a regular part of the valuation process. Descriptions of some of the more recent (i.e. within the last five years) changes are provided below.

In the **Alberta Treasury Board and Finance Notice 04-2018** (Clarification of Minor Injury Regulation), dated **May 17, 2018**, the Alberta Superintendent of Insurance advised that clarifying amendments have been made to the definition of minor injuries under the Minor Injury Regulation (MIR). With the **most recent** valuation (September 30, 2019), reform adjustments related to changes in the definition of minor injuries under the MIR, were included with the updated industry trend analysis (completed using industry data as at December 31, 2018), impacting the selection of ultimates.

The **Minister of Treasury Board and Finance issued Ministerial Order 14/2018**, on **October 31, 2018**, which states unless otherwise directed by the Minister, the AIRB may not approve filings from insurers for cumulative rate increases on private passenger vehicles greater than +5.0% during the period between December 1, 2018 and August 31, 2019. **This order lapsed in August 2019**. At the current time, no explicit adjustments have been made to our valuation estimates or views based on this order.

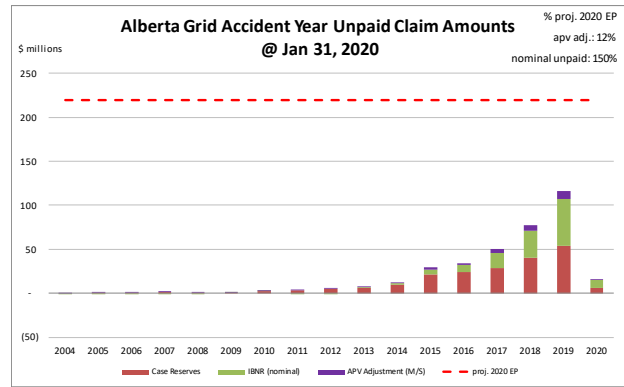
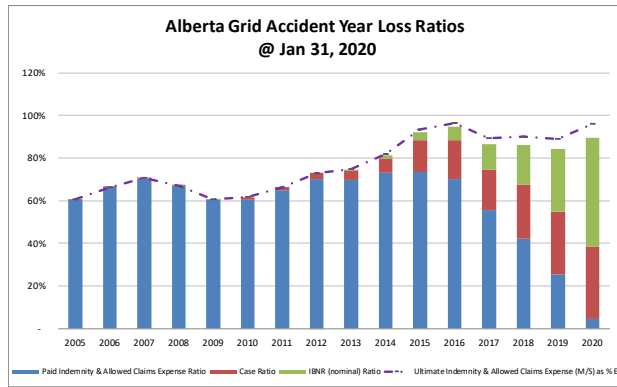
1.4 Current Provision Summary

The charts at the top of the next page show the current levels of claim liabilities² booked by accident year³. The left chart displays life-to-date payments, case reserves, IBNR, and the total including actuarial present value adjustments against accident year earned premium. The right chart shows the associated dollar amounts for the components of the claim liabilities and the current projected amount of 2020 full year earned premium (the red hash-mark line) to provide some perspective.

¹This url to a pdf is to a helpful guide on how bills become laws: <https://www.ola.org/sites/default/files/common/how-bills-become-law-en.pdf>.

²Claim liabilities refer to provision for unpaid indemnity and allowed claims expenses. Allowed claims expenses are first party legal and other expenses as listed in the RSP Claims Guide. Claims expenses paid through the member company expense allowance are NOT included in this discussion.

³Accident year 2004 was an incomplete year and therefore has been excluded from the loss ratio chart.



“M/S” refers to “Member Statement” values – that is, actuarial present value adjustments at the selected discount rate.

The current actuarial present value adjustments balance (\$26.7 million – see table below) represents 12% of the earned premium projected for the full year 2020 (see the upper right corner of the right chart above). If our current estimates of the nominal unpaid amounts prove to match actual claims payments, the actuarial present value adjustments will be released into the net operating result over future periods.

claim liabilities (\$000s)	amt	%
case	203,605	57.2%
ibnr	125,697	35.3%
M/S apv adjust.	26,729	7.5%
M/S total	356,031	100.0%

The table to the left breaks down the Member Statement (M/S) claim liabilities total into component parts, showing that the majority of the claim liabilities for this RSP is in case reserves. Approximately 50% of the IBNR balance relates to accident years 2019 and 2020 (see Exhibit B). Approximately 82% of the M/S total claim

liabilities are related to accident years 2016–2020 inclusive (i.e. the most recent 5 accident years), and approximately 2% is related to accident years 2010 and prior (i.e. prior to the most recent 10 accident years).

The tables below summarize the premium liabilities and the total policy liabilities.

premium liabilities (\$000s)	amt	%
unearned prem	109,714	104.0%
prem def/(dpac)	(11,171)	(10.6%)
M/S apv adjust.	6,955	6.6%
M/S total	105,498	100.0%

policy liabilities (\$000s)	amt	%
claim	329,302	71.4%
premium	98,543	21.4%
M/S apv adjust.	33,684	7.3%
M/S total	461,529	100.0%

2 Activity During the Month of January 2020

2.1 Recorded Premium and Claims Activity

The table at the top of the next page summarizes the extent to which premiums and claims amounts recorded during the month differ from projections reflected in the prior month’s Operational Report⁴.

⁴There may be rounding differences in values in this document compared with the associated Bulletin and/or Operational Report.

Alberta Grid RSP Actual vs Projected Summary: Recorded Transaction Amounts (\$ thousands)

Table 01 Accident Year	Earned Premium		Paid Indemnity & Allowed Claims Expense		Case increase / (decrease)		Recorded increase / (decrease)	
	Actual	Actual less Projected	Actual	Actual less Projected	Actual	Actual less Projected	Actual	Actual less Projected
Prior	2	2	2,706	399	(443)	709	2,263	1,108
2018	(47)	(47)	856	137	887	644	1,743	781
2019	(160)	(160)	5,088	(2,796)	1,135	4,236	6,223	1,440
2020	17,626	(437)	779	(29)	5,988	(156)	6,767	(185)
TOTAL	17,421	(642)	9,428	(2,290)	7,567	5,433	16,995	3,143

(Recorded transaction amounts exclude IBNR & other actuarial provisions)

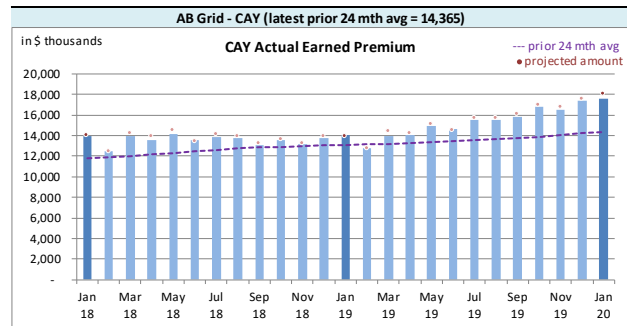
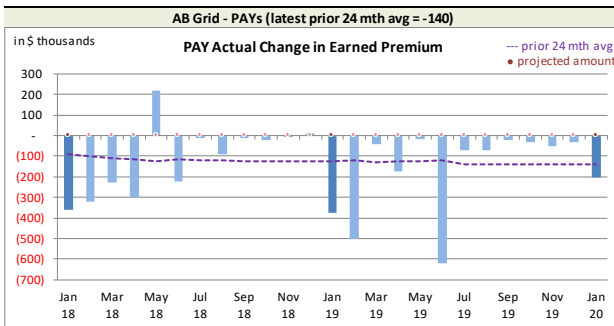
It is unusual to see actual earned premium transactions affecting prior accident years beyond the first prior at this time in the calendar year –prior accident years changes in the month include activity undertaken by a member reflecting recent audit findings.

Claims transaction activity is generally volatile and changes from one month to the next are anticipated due to this natural “process variance” (i.e. random variation). Each month, the projection variances are reviewed for signs of projection bias and to identify potential ways to reduce the level of the variance. Commentary from our review is provided in the sub-sections that follow.

2.1.a Actual vs. Projected (AvsP): Earned Premium

The charts below show actual **earned premium**⁵ activity in each of the most recent 25 calendar months, along with a “prior 24-month average” to show how each month’s actual compares with the average amount of the preceding 24 calendar months.

Alberta Grid RSP Actual Earned Premium by Calendar Month



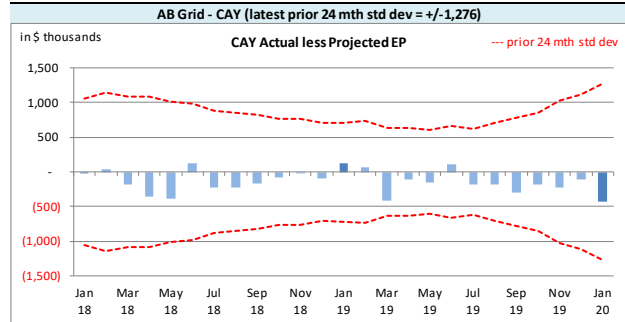
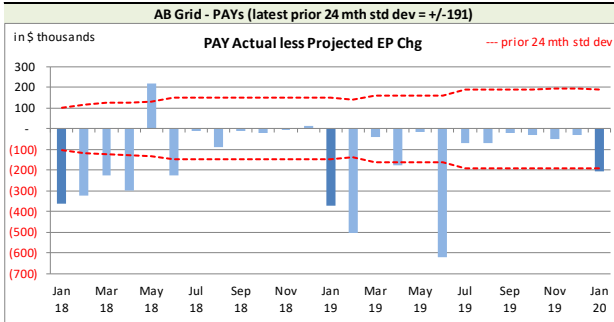
Earned premium changes during a given calendar month in relation to prior accident years tend to be at modest levels, although relatively high levels generally occur at the beginning of each year.

The associated variances between the actual changes and the projections from the previous month are shown in the charts at the top of the next page. **Earned premium** change projections are all attributed to the current accident year as the projection upload does not accept earned premium changes for other accident years. We do not see this limitation as being significant for our purposes, but it does mean that the actual less projection variance will equal the actual **earned premium** change in relation to

⁵Premium is earned on a daily basis based on the transaction term measured in days. As a result, months with 31 days earned relatively more than those with 30 days, and February earns the least.

prior accident years.

Alberta Grid RSP Actual vs. Projected Summary: Earned Premium Variances by Calendar Month



On Latest \$ thousands			
Earned Premium	PAYs	CAY	
Mthly Avg EP Chg (prior 24 mths)	(140)	14,365	
std dev	191	1,276	
A-P <> std dev	11	-	
% <> std dev	44.0%	0.0%	
norm <> std dev	31.7%	31.7%	
performance vs 24-mth avg:	worse	better	

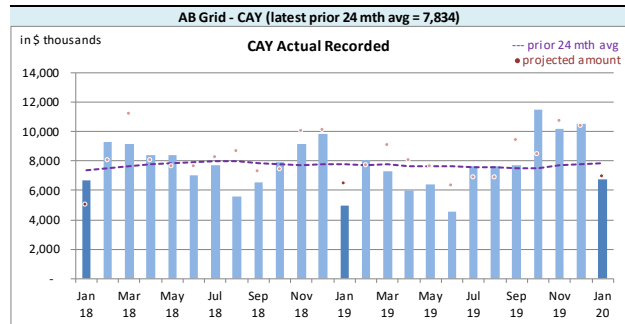
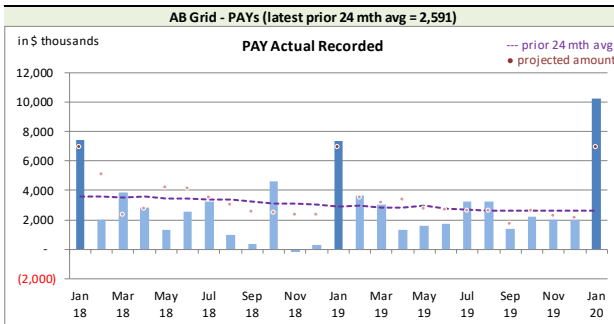
We project **earned premium** changes from known unearned premium and projected written premium levels, but upload the total projections as current accident year (CAY). This process has generated prior accident years’ (PAYs) bias⁶, with actuals generally lower than projected, although the magnitude is not high relative to monthly premium. In addition to the PAYs’ bias, the CAY

has also shown bias⁷, with actuals being generally lower than projected, and while we modified our projections processes in response, bias still exists. Over time, we may consider other projection approaches to narrow monthly variance levels further, but it is not currently deemed a priority.

2.1.b AvsP: Recorded Indemnity & Allowed Claims Expense

The charts below show actual **recorded** activity (**paid** and case reserve changes), in each of the most recent 25 calendar months, along with a “prior 24-month average” to show how each month’s actual compares with the average amount of the preceding 24 calendar months.

Alberta Grid RSP Actual Recorded by Calendar Month

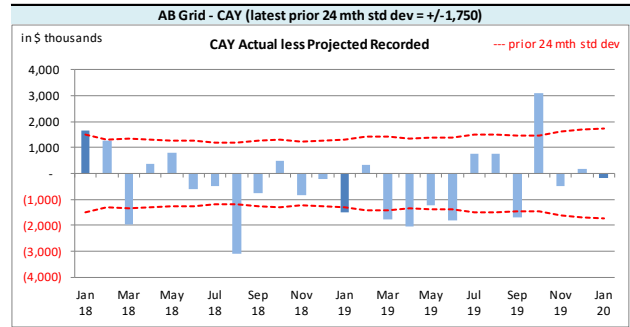
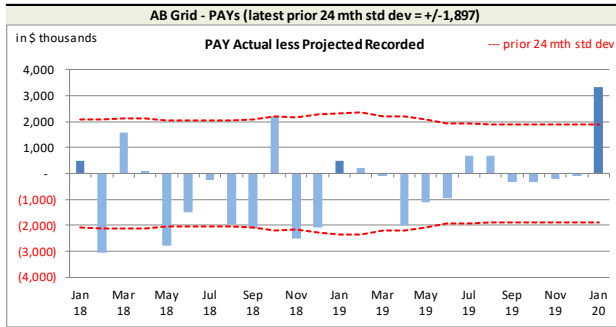


⁶The PAYs’ variances will show bias as the projection upload forces all earned premium projections to be attributed to the CAY.

⁷We measure bias based on a 95% confidence range for a binominal distribution with trials based on the range being considered (25 in this case) and 50% probability of success. The rolling 25-month CAY variances at January 2020 has only 5 months where the actuals were higher than projected, and as the 95% confidence range is 8 to 17, bias continues to be indicated.

Recorded activity variances from the previous month’s projections are shown in the charts below, including the “prior 24-month standard deviation” levels to show how the variances from projection compare with historical standard deviations.

*Alberta Grid RSP Actual vs Projected Summary: **Recorded** Variances by Calendar Month*



On Latest \$ thousands			
Recorded	PAYs	CAY	
Mthly Avg Recorded (prior 24 mths)	2,591	7,834	
std dev	1,897	1,750	
A-P <> std dev	6	9	
% <> std dev	24.0%	36.0%	
norm <> std dev	31.7%	31.7%	
performance vs 24-mth avg:	better	no better	

With respect to **recorded** indemnity & allowed claims expense activity, 24% of the prior accident years’ (PAYs) variances over the last 25 calendar months have fallen outside of one standard deviation of the actual **recorded** amounts (see table on left), suggesting the projection process has performed better than simply projecting the prior 24-month average amount (assuming it

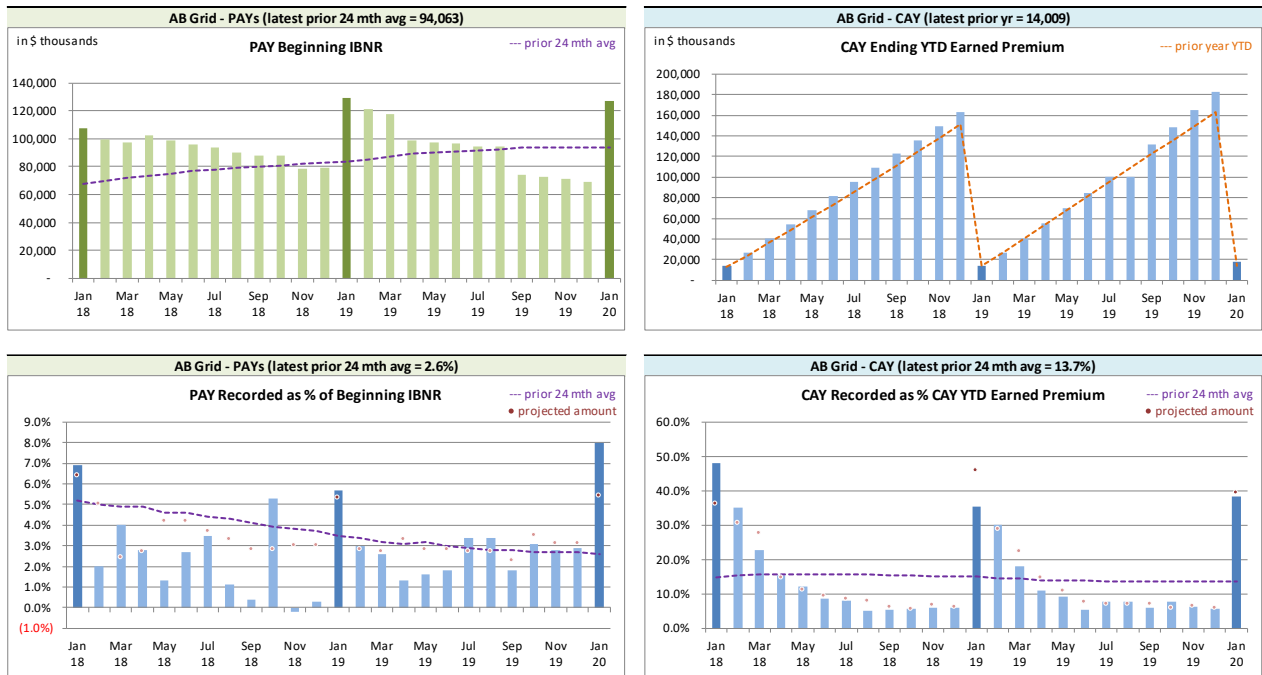
follows a normal distribution). Bias has not been indicated at a 95% confidence level on a rolling 25-month basis (9 of 25 variances were positive).

The PAYs **recorded** variance was outside of the one standard deviation band this month (see left chart above). The activity was reviewed and verified, and attributed to process variance.

The current accident year (CAY) **recorded** variances fell outside of one standard deviation 36% of the time over the last 25 calendar months (see table above), suggesting that the projection process has performed no better than simply projecting the prior 24-month average amount. Bias has not been indicated at a 95% confidence level on a lagging 24-month basis (10 of 25 variances were positive).

The method for establishing IBNR adjusts automatically for changes in **earned premium** and **recorded** claims activity level (see sections 2.2 and 3).

We have included, for reference, additional charts at the top of the next page related to levels influencing **recorded** activity. Note in particular the changes in the level of PAY beginning IBNR over the months, as a response to valuations and showing up as a beginning IBNR change one month after the valuation is implemented (i.e. April, June, September, and November).

Alberta Grid RSP Levels that influence⁸ Recorded activity by Calendar Month


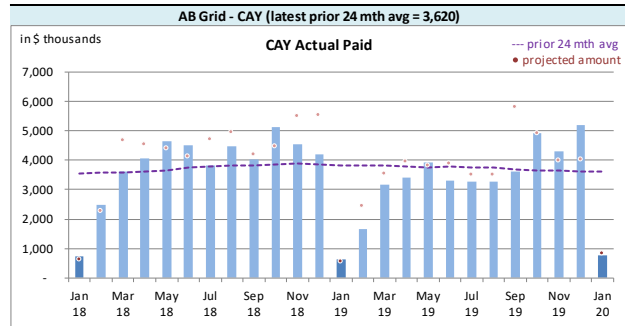
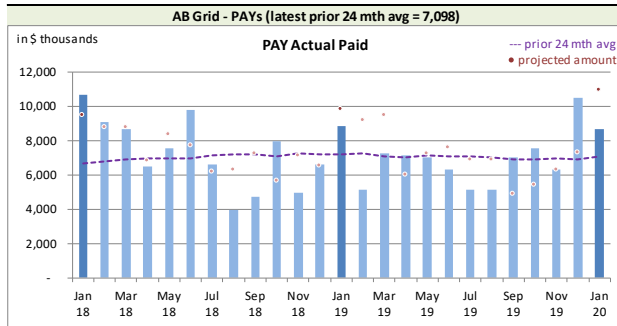
We track PAY beginning IBNR as **recorded** activity comes out of IBNR. Changes in the PAY beginning IBNR (see upper left chart above) occur for several possible reasons:

- to offset actual **recorded** activity (through loss ratio matching);
- the annual switchover as a CAY becomes a PAY (occurs in January); and
- when a new valuation is implemented, where the valuation resulted in changes to the selection of PAYs’ ultimates (will show up as a beginning IBNR change one month after the valuation is implemented, i.e. the change will generally show in April, June, September, and November).

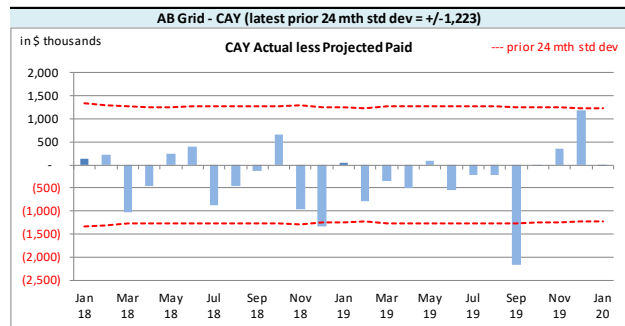
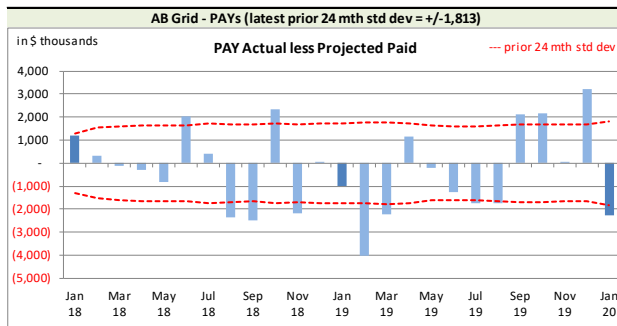
2.1.c AvsP: Paid Indemnity & Allowed Claims Expense

The charts at the top of the next page show actual **paid** activity in each of the most recent 25 calendar months, along with a “prior 24-month average” to show how each month’s actual compares with the average amount of the preceding 24 calendar months.

⁸Our recorded activity projections for the prior accident years are based on selected ratios of recorded activity to beginning unpaid balances, whereas the current accident year projections are based on selected ratios of year-to-date IBNR to year-to-date selected ultimate (i.e. selected LR x earned premium), deriving year-to-date recorded as selected ultimate less IBNR. In both cases, the ratio selection is based on our review of the more recent recorded activity and recent AvsP analyses.

Alberta Grid RSP Actual *Paid* activity by Calendar Month


Paid activity variances from the previous month’s projections are shown in the charts below, including the prior 24-month standard deviation levels to show how the variances from projection compare with historical standard deviations.

Alberta Grid RSP Actual vs Projected Summary: *Paid* Variances by Calendar Month


On Latest \$ thousands			
Paid	PAYs	CAY	
Mthly Avg Paid (prior 24 mths)	7,098	3,620	
std dev	1,813	1,223	
A-P <> std dev	13	2	
% <> std dev	52.0%	8.0%	
norm <> std dev	31.7%	31.7%	
performance vs 24-mth avg:	worse	better	

With respect to **paid** indemnity & allowed claims expense, 52% of the prior accident years’ (PAYs) variances over the last 25 calendar months have fallen outside of one standard deviation of the actual **paid** amounts (see table on left), suggesting the projection process has performed worse than simply projecting the prior 24-month average amount (assuming it follows a normal

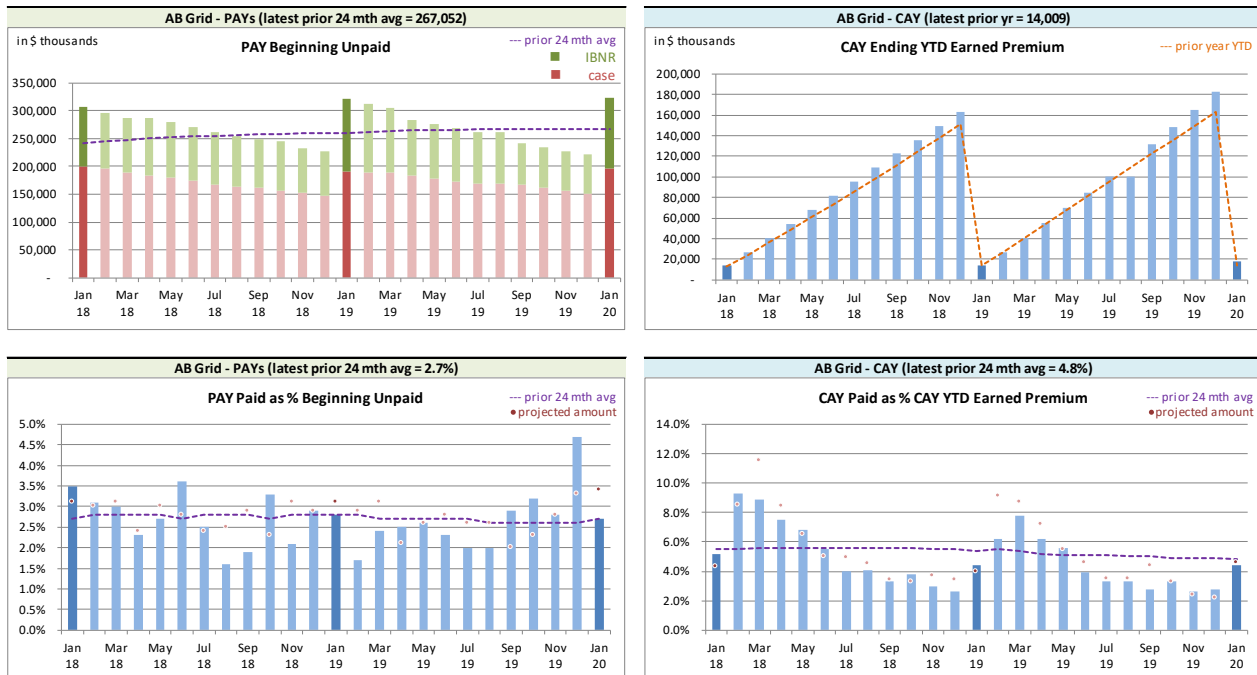
distribution), and we are actively looking into the projection process for means of improving this result. Bias has not been indicated at a 95% confidence level on a rolling 25-month basis (11 of 25 variances are positive).

The PAYs **paid** variances were outside of the one standard deviation band this month (see left chart above). The activity was reviewed and attributed to process variance.

The current accident year (CAY) **paid** variances fell outside one standard deviation 8% of the time over the last 25 calendar months (see table above), suggesting the projection process has performed better than simply projecting the prior 24-month average amount. Bias has not been indicated at a 95% confidence level on a rolling 25-month basis (9 of 25 variances are positive).

We have included, for reference, additional charts at the top of the next page related to levels influencing **paid** activity.

Alberta Grid RSP Levels that influence⁹ Paid activity by Calendar Month



We track the PAY beginning unpaid balance (case and IBNR) as **paid** activity comes out of the unpaid balance. Changes in the PAY beginning unpaid balance (see upper left chart above) occur for several possible reasons:

- to offset actual **paid** activity (may reduce case or IBNR or both);
- the annual switchover as a CAY becomes a PAY (occurs in January); and
- when a new valuation is implemented, where the valuation resulted in changes to the selection of PAYs’ ultimates (will show up as a beginning unpaid balance change one month after the valuation is implemented, i.e. the change will generally show in April, June, September, and November).

2.2 Actuarial Provisions

An ultimate loss ratio matching method (described in section 3) is used to determine the month’s IBNR¹⁰, and factors are applied to the nominal unpaid claims liability (case plus IBNR) to determine the discount amount (shown as a negative value to indicate its impact of reducing the liability) and the Provisions for Adverse Deviations. The loss ratios and the factors used to determine the projections and actuals were based on the applicable valuation.

The table at the top of the next page summarizes variances in provisions included in this month’s

⁹Our paid projections for the prior accident years are based on selected ratios of paid to beginning unpaid balances, whereas the current accident year projections are based on selected ratios of year-to-date paid to year-to-date selected ultimate indemnity (i.e. selected LR x earned premium). In both cases, the ratio selection is based on our review of the more recent recorded activity and recent AvsP analyses.

¹⁰For ease of discussion, “IBNR” is used in place of “provisions for incurred but not recorded (IBNR) and development”.

Operational Report and the associated one-month projections from last month’s Report.

Alberta Grid RSP Actual vs Projected Summary: IBNR and APV Amounts (\$ thousands)

Table 02

Accident Year	actuarial present value adjustments							
	IBNR		Discount Amount		Provisions for Adverse Deviations		IBNR + actuarial present value adjustments	
	Actual	Actual less Projected	Actual	Actual less Projected	Actual	Actual less Projected	Actual	Actual less Projected
Prior	32,970	(1,109)	(4,152)	7	14,951	(48)	43,769	(1,150)
2018	30,293	(822)	(2,696)	7	8,958	(22)	36,555	(837)
2019	53,425	(1,575)	(4,511)	(112)	12,996	322	61,910	(1,365)
2020	9,009	(206)	(645)	15	1,828	(44)	10,192	(235)
TOTAL	125,697	(3,712)	(12,004)	(83)	38,733	208	152,426	(3,587)

The IBNR provision is \$3.7 million lower than projected from last month, counterbalancing the recorded claims activity and adjusting for the earned premium variance impacts indicated in section 2.1.

Exhibit G shows the accident year IBNR amount change from last month to this month broken down into:

- (i) the change projected last month;
- (ii) the additional change due to variances in earned premium (because we apply a loss ratio to earned premium in determining ultimate level) and/or recorded claims (as IBNR is calculated as ultimate less recorded) differences; and
- (iii) the additional change due to valuation implementation impacts (as applicable)

The variances associated with (ii) above are discussed in sections 2.1.a and 2.1.b.

The table below summarizes the variances in the provisions for premium deficiency liability / (deferred policy acquisition cost asset) included in this month’s Operational Report and the one-month projections from last month’s Report. This RSP is in a deferred policy acquisition cost asset position (shown as a negative amount) prior to and after actuarial present value adjustments. Actuarial present value adjustments decrease the asset value as the adjustments increase the expected future policy obligations (costs) associated with the unearned premium. The variances noted are mainly driven by the unearned premium variance.

Alberta Grid RSP Actual vs Projected Summary: Premium Deficiency / (DPAC) Amounts (\$ thousands)

Table 03

	Premium Deficiency / (Deferred Policy Acquisition Costs)		actuarial present value adjustments		Premium Deficiency / (DPAC) including actuarial present value adjustments	
	Actual	Actual less Projected	Actual	Actual less Projected	Actual	Actual less Projected
balance:	(11,171)	286	6,955	(176)	(4,216)	110
balance as % unearned premium:	(10.2%)	-	6.3%	-	(3.8%)	-
actual unearned premium:	109,714					
less projected:	(2,782)					

3 Ultimate Loss Ratio Matching Method

An “ultimate loss ratio matching method” continues to be applied to the current month and two projected months shown in the Operational Reports, with IBNR determined by accident year as follows:

- (a) Earned premium to-date
- (b) Ultimate loss¹¹ ratio per latest valuation
- (c) Estimated ultimate incurred = (a) x (b)
- (d) Recorded indemnity & allowed claims expense to-date
- (e) IBNR = (c) – (d)

4 Calendar Year-to-Date Results

The table below summarizes the calendar year-to-date results for indemnity & allowed claims expenses¹², including IBNR.

In calculating the amounts as percentages of earned premium, the calendar year-to-date earned premium has been used, which includes earned premium associated with the current accident year but also earned premium adjustments related to prior accident years. Specifically, the current accident year (CAY) ratio in the table is 90.6% rather than 89.5% (the valuation ultimate ratio for accident year 2020), as the calendar year-to-date earned premium includes prior accident year earned premium adjustments. (Note that the ratios in this table may differ slightly from those shown in the Alberta Grid RSP Summary of Operations due to rounding.)

Alberta Grid RSP Calendar Year-to-Date Indemnity & Allowed Claims Expense Summary (\$ thousands)

Table 04	YTD Nominal Values		YTD actuarial present value adjustment		YTD Total		Change from Prior Month YTD	
	Amount	% EP	Amount	% EP	Amount	% EP	Amount	LR pts
PAYs	(178)	(1.0%)	(83)	(0.5%)	(261)	(1.5%)	#N/A	#N/A
CAY	15,776	90.6%	1,183	6.8%	16,959	97.3%	#N/A	#N/A
TOTAL	15,598	89.5%	1,100	6.3%	16,698	95.9%	#N/A	#N/A

(“% EP” based on 2019 calendar year-to-date earned premium; ratios may not total due to rounding)

In general, prior accident years (PAYs) changes from last month are due to the release of the actuarial present value adjustments with claims payments, except when valuations are implemented. The loss ratio change year-to-date in Table 04 reflects not only changes in the prior accident year levels, but also the increase in the calendar year-to-date earned premium with an additional month’s earned premium.

For the current accident year (CAY), changes in the year-to-date total reflects the additional month’s exposure and regular changes to actuarial present value adjustments as the year ages.

5 Current Operational Report – Additional Exhibits

Section 6 provides exhibits pertaining to the actuarial provisions reflected in the current month’s

¹¹“Loss” here refers to indemnity and allowed claims expenses, but does not include the claims expense allowance included in member company overall expense allowances (“Expense Allowance” in the Operational Report).

¹²Allowed claims expenses are first party legal and other expenses as listed in the RSP Claims Guide. Claims expenses paid through the member company expense allowance are NOT included in this analysis.

Operational Report.

IBNR (including actuarial present value adjustments) presented in section 6, Exhibit A, were derived on a discounted basis, and therefore reflect the time value of money and include an explicit provision for adverse deviations in accordance with accepted actuarial practice in Canada.

IBNR presented in section 6, Exhibit B, does NOT include any actuarial present value adjustments. The “Total IBNR” from this exhibit is shown in the Operational Report as “Undiscounted IBNR”.

The ultimate loss ratios presented in section 6, Exhibit B, refer to the estimates derived on the basis of various actuarial methodologies applied to the experience of the Alberta Grid Risk Sharing Pool for the purposes of the most recent quarterly valuation. As discussed in section 3, IBNR reflected in the current month’s Operational Report was derived as the difference between the estimated ultimate for the claims amount (i.e. earned premium x ultimate loss ratio) and the associated current recorded amounts (life-to-date payments plus current case reserves).

6 EXHIBITS

The exhibits listed below are provided on the pages that follow:

- EXHIBIT A IBNR for Member Sharing – includes Actuarial Present Value Adjustments
- EXHIBIT B IBNR
- EXHIBIT C Premium Liabilities
- EXHIBIT D Projected Year-end Policy Liabilities
- EXHIBIT E Discount Rate & Margins for Adverse Deviations
- EXHIBIT F Interest Rate Sensitivity
- EXHIBIT G Components of IBNR Change During Month

EXHIBIT A

IBNR for Member Sharing – includes Actuarial Present Value Adjustments

TABLE EXHIBIT A

		Amounts in \$000s				
IBNR + M/S actuarial present value adjustments	Accident Year	Actual Dec. 2019	Actual Jan. 2020	Projected Feb. 2020	Projected Mar. 2020	Projected Dec. 2020
	2004	(71)	(71)	(69)	(67)	(49)
	2005	15	17	16	15	10
	2006	(99)	(100)	(98)	(97)	(70)
	2007	(33)	(30)	(28)	(29)	(23)
	2008	(52)	(47)	(46)	(45)	(32)
	2009	162	163	160	155	113
	2010	289	263	257	250	180
	2011	76	154	150	146	103
	2012	263	(6)	(6)	(10)	(11)
	2013	1,378	1,290	1,264	1,233	893
	2014	2,908	2,960	2,900	2,831	2,057
discount rate	2015	7,554	7,429	7,280	7,107	5,168
1.44%	2016	10,938	10,220	10,025	9,582	6,539
	2017	22,562	21,527	20,558	20,249	15,177
interest rate margin	2018	38,166	36,555	36,030	35,149	28,433
25 basis pts	2019	68,667	61,910	59,840	58,004	48,226
	2020	-	10,192	16,554	24,787	84,003
	2021	-	-	-	-	-
	TOTAL	152,723	152,426	154,787	159,260	190,717
	Change		(297)	2,361	4,473	

Please see Exhibit G, page 1 for Components of Change during Current Month

EXHIBIT B

IBNR

TABLE EXHIBIT B

Amounts in \$000s

IBNR	Ultimate Loss Ratio	Accident Year	Actual Dec. 2019	Actual Jan. 2020	Projected Feb. 2020	Projected Mar. 2020	Projected Dec. 2020
	51.6%	2004	(79)	(79)	(77)	(75)	(54)
	60.5%	2005	(24)	(24)	(24)	(23)	(17)
	66.3%	2006	(109)	(111)	(109)	(107)	(77)
	70.9%	2007	(143)	(143)	(140)	(137)	(100)
	67.1%	2008	(77)	(73)	(72)	(70)	(51)
	60.6%	2009	131	131	128	125	91
	61.5%	2010	80	77	75	73	53
	66.3%	2011	(169)	(87)	(85)	(83)	(60)
	72.8%	2012	(108)	(361)	(354)	(347)	(253)
	74.6%	2013	842	748	733	718	524
	81.2%	2014	2,029	2,094	2,052	2,009	1,469
	92.0%	2015	5,638	5,472	5,363	5,250	3,838
	94.6%	2016	8,770	7,999	7,839	7,447	4,892
	86.4%	2017	18,453	17,327	16,409	16,179	11,849
	86.2%	2018	32,077	30,293	29,869	29,092	23,296
	84.4%	2019	59,783	53,425	51,822	50,371	41,940
	89.5%	2020	-	9,009	14,394	21,651	72,959
	91.0%	2021	-	-	-	-	-
	TOTAL		127,094	125,697	127,823	132,073	160,299
	Change			(1,397)	2,126	4,250	

Please see Exhibit G, page 2 for Components of Change during Current Month

EXHIBIT C

Premium Liabilities

TABLE EXHIBIT C

	Amounts in \$000s				
	Actual Dec. 2019	Actual Jan. 2020	Projected Feb. 2020	Projected Mar. 2020	Projected Dec. 2020
Premium Liabilities					
(1) unearned premium (UP)	115,346	109,714	105,659	107,025	119,538
FOR MEMBER SHARING					
(2) expected future costs ratio {% of (1)}	96.1%	96.2%	96.2%	96.2%	97.8%
(3) expected future costs {(1) x (2)}	110,905	105,498	101,623	102,999	116,855
(4) premium deficiency / (deferred policy acquisition cost)	(4,441)	(4,216)	(4,036)	(4,026)	(2,683)
Excluding Actuarial Present Value Adjustments					
(5) expected future costs ratio {% of (1)}	89.8%	89.8%	89.8%	89.9%	91.3%
(6) expected future costs {(1) x (5)}	103,593	98,543	94,922	96,208	109,151
(7) premium deficiency / (deferred policy acquisition cost)	(11,753)	(11,171)	(10,737)	(10,817)	(10,387)

EXHIBIT D

Projected Year-end Policy Liabilities

The table below presents the projected policy liabilities as at December 31, 2020, broken down by component.

Alberta Grid ending 2020		Projected Balances as at Dec. 31, 2020 (\$000s)								
		nominal values			actuarial present value adjustments (apvs)					TOTAL
Acc Yr	Case	IBNR	Total Unpaid	discount	investment PfAD	nominal development PfAD	development PfAD discount	development PfAD	Total apvs	
2004	-	(54)	(54)	-	-	5	-	5	5	(49)
2005	300	(17)	283	(1)	-	28	-	28	27	310
2006	157	(77)	80	(1)	-	8	-	8	7	87
2007	1,027	(100)	927	(17)	3	93	(2)	91	77	1,004
2008	277	(51)	226	(5)	1	23	-	23	19	245
2009	185	91	276	(6)	1	28	(1)	27	22	298
2010	1,578	53	1,631	(39)	7	163	(4)	159	127	1,758
2011	2,163	(60)	2,103	(50)	8	210	(5)	205	163	2,266
2012	3,413	(253)	3,160	(82)	16	316	(8)	308	242	3,402
2013	4,225	524	4,749	(114)	19	475	(11)	464	369	5,118
2014	6,329	1,469	7,798	(203)	31	780	(20)	760	588	8,386
2015	14,636	3,838	18,474	(554)	92	1,847	(55)	1,792	1,330	19,804
2016	18,684	4,892	23,576	(754)	118	2,358	(75)	2,283	1,647	25,223
2017	24,422	11,849	36,271	(1,233)	181	4,534	(154)	4,380	3,328	39,599
2018	34,921	23,296	58,217	(2,212)	349	7,277	(277)	7,000	5,137	63,354
2019	37,629	41,940	79,569	(3,342)	557	9,469	(398)	9,071	6,286	85,855
PAYs (sub-total):	149,946	87,340	237,286	(8,613)	1,383	27,614	(1,010)	26,604	19,374	256,660
CAY (2020)	67,043	72,959	140,002	(6,020)	1,120	16,660	(716)	15,944	11,044	151,046
claims liabilities:	216,989	160,299	377,288	(14,633)	2,503	44,274	(1,726)	42,548	30,418	407,706
	Unearned Premium	Premium Deficiency / (DPAC)	Total Provision	discount	investment PfAD	nominal development PfAD	development PfAD discount	development PfAD	Total apvs	TOTAL*
premium liabilities:	119,538	(10,387)	109,151	(4,242)	761	11,639	(454)	11,185	7,704	116,855
*Total may not be sum of parts, as apvs apply to future costs within UPR										
policy liabilities:			486,439	(18,875)	3,264	55,913	(2,180)	53,733	38,122	524,561

EXHIBIT E

Discount Rate & Margins for Adverse Deviations

The tables below present selected margins for adverse development by coverage (the total is a weighted average, based on the unpaid claims projection for December 31, 2019 from the valuation), followed by the selected discount rate and the associated margin for investment income.

Selected Claims Development MfADs (Sep. 30,
2019)

Accident Year	Third Party Liability Margins	Accident Benefits Margins	Other Coverages Margins	Total Margins
2004	10.0%	10.0%	10.0%	10.0%
2005	10.0%	10.0%	10.0%	10.0%
2006	10.0%	10.0%	10.0%	10.0%
2007	10.0%	10.0%	10.0%	10.0%
2008	10.0%	10.0%	10.0%	10.0%
2009	10.0%	10.0%	10.0%	10.0%
2010	10.0%	10.0%	10.0%	10.0%
2011	10.0%	10.0%	10.0%	10.0%
2012	10.0%	10.0%	8.6%	10.0%
2013	10.0%	10.0%	9.5%	10.0%
2014	10.0%	10.0%	9.9%	10.0%
2015	10.0%	10.0%	9.4%	10.0%
2016	10.0%	10.0%	9.8%	10.0%
2017	12.5%	10.0%	12.5%	12.5%
2018	12.4%	10.0%	12.5%	12.5%
2019	12.2%	10.0%	8.4%	11.9%
2020	11.8%	10.0%	5.1%	10.7%
<u>prem liab</u>	<u>11.8%</u>	<u>10.0%</u>	<u>5.1%</u>	<u>10.7%</u>

discount rate: 1.44%
margin (basis points): 25

EXHIBIT F
Interest Rate Sensitivity

The tables below present sensitivity to the member statement claims liability as projected to Dec. 31, 2019 from the latest valuation date (projections in exhibits A to D are to Dec. 31, 2020, and are based on more up-to-date information). We have included the most recent valuation selection (1.44%), the prior valuation assumption (1.41%) and the prior fiscal year end valuation assumption (2.28%) for comparative purposes. A 25 basis point margin for investment return adverse deviation is used in all scenarios presented.

\$ Format: \$000s

Actuarial Present Value of Provisions at Various Discount Rates - Dec. 31, 2019 projected Unpaid								
AY	0.44%	0.94%	1.44%	1.94%	2.44%	2.94%	1.41%	2.28%
2004	-	-	-	-	-	-	-	-
2005	467	466	464	462	461	459	464	461
2006	225	223	222	221	219	218	222	220
2007	1,574	1,562	1,551	1,540	1,529	1,518	1,552	1,532
2008	636	631	626	621	616	612	626	618
2009	256	254	251	249	247	245	252	248
2010	3,012	2,987	2,962	2,937	2,913	2,889	2,963	2,920
2011	4,611	4,569	4,528	4,488	4,448	4,410	4,531	4,461
2012	5,752	5,704	5,657	5,611	5,566	5,522	5,660	5,580
2013	8,558	8,479	8,401	8,326	8,252	8,179	8,405	8,275
2014	13,773	13,626	13,485	13,345	13,209	13,077	13,493	13,253
2015	30,635	30,285	29,943	29,608	29,285	28,964	29,961	29,386
2016	38,627	38,157	37,703	37,254	36,821	36,400	37,726	36,959
2017	51,099	50,404	49,728	49,067	48,429	47,804	49,762	48,631
2018	81,014	79,810	78,650	77,525	76,424	75,363	78,717	76,775
2019	120,415	118,584	116,811	115,092	113,438	111,823	116,912	113,957
Total	360,654	355,741	350,982	346,346	341,857	337,483	351,246	343,276
	curr - 100 bp	curr - 50 bp	curr val assumption	curr + 50bp	curr + 100bp	curr + 150bp	prior val assumption	prior fyr end assumption

Dollar Impact Relative to Valuation Assumption								
AY	0.44%	0.94%	1.44%	1.94%	2.44%	2.94%	1.41%	2.28%
Total	9,672	4,759	-	(4,636)	(9,125)	(13,499)	264	(7,706)
	curr - 100 bp	curr - 50 bp	curr val assumption	curr + 50bp	curr + 100bp	curr + 150bp	prior val assumption	prior fyr end assumption

Percentage Impact Relative to Valuation Assumption								
AY	0.44%	0.94%	1.44%	1.94%	2.44%	2.94%	1.41%	2.28%
2004	-	-	-	-	-	-	-	-
2005	0.6%	0.4%	-	(0.4%)	(0.6%)	(1.1%)	-	(0.6%)
2006	1.4%	0.5%	-	(0.5%)	(1.4%)	(1.8%)	-	(0.9%)
2007	1.5%	0.7%	-	(0.7%)	(1.4%)	(2.1%)	0.1%	(1.2%)
2008	1.6%	0.8%	-	(0.8%)	(1.6%)	(2.2%)	-	(1.3%)
2009	2.0%	1.2%	-	(0.8%)	(1.6%)	(2.4%)	0.4%	(1.2%)
2010	1.7%	0.8%	-	(0.8%)	(1.7%)	(2.5%)	0.0%	(1.4%)
2011	1.8%	0.9%	-	(0.9%)	(1.8%)	(2.6%)	0.1%	(1.5%)
2012	1.7%	0.8%	-	(0.8%)	(1.6%)	(2.4%)	0.1%	(1.4%)
2013	1.9%	0.9%	-	(0.9%)	(1.8%)	(2.6%)	0.0%	(1.5%)
2014	2.1%	1.0%	-	(1.0%)	(2.0%)	(3.0%)	0.1%	(1.7%)
2015	2.3%	1.1%	-	(1.1%)	(2.2%)	(3.3%)	0.1%	(1.9%)
2016	2.5%	1.2%	-	(1.2%)	(2.3%)	(3.5%)	0.1%	(2.0%)
2017	2.8%	1.4%	-	(1.3%)	(2.6%)	(3.9%)	0.1%	(2.2%)
2018	3.0%	1.5%	-	(1.4%)	(2.8%)	(4.2%)	0.1%	(2.4%)
2019	3.1%	1.5%	-	(1.5%)	(2.9%)	(4.3%)	0.1%	(2.4%)
Total	2.8%	1.4%	-	(1.3%)	(2.6%)	(3.8%)	0.1%	(2.2%)
	curr - 100 bp	curr - 50 bp	curr val assumption	curr + 50bp	curr + 100bp	curr + 150bp	prior val assumption	prior fyr end assumption

EXHIBIT G

Components of Member Statement IBNR (i.e. “Discounted”) Change During Month

RSP **Alberta Grid**
AccountCode Desc **IBNR - Discounted**

M/S IBNR - in \$000s

AccYear	Values				Sum of Total Change	Sum of % Total Change	Sum of Current Month Final Amount
	Sum of Prior Month Actual Amount	Sum of Projected Change	Sum of Change Due to AvsP Variances	Sum of Change Due to Valuation Implementation			
2004	(71)	2	(2)	-	-	-	(71)
2005	15	2	-	-	2	13.3%	17
2006	(99)	3	(4)	-	(1)	1.0%	(100)
2007	(33)	5	(2)	-	3	(9.1%)	(30)
2008	(52)	2	3	-	5	(9.6%)	(47)
2009	162	(2)	3	-	1	0.6%	163
2010	289	(6)	(20)	-	(26)	(9.0%)	263
2011	76	1	77	-	78	102.6%	154
2012	263	(11)	(258)	-	(269)	(102.3%)	(6)
2013	1,378	(12)	(76)	-	(88)	(6.4%)	1,290
2014	2,908	(17)	69	-	52	1.8%	2,960
2015	7,554	(90)	(35)	-	(125)	(1.7%)	7,429
2016	10,938	(414)	(304)	-	(718)	(6.6%)	10,220
2017	22,562	(434)	(601)	-	(1,035)	(4.6%)	21,527
2018	38,166	(774)	(837)	-	(1,611)	(4.2%)	36,555
2019	68,667	(5,392)	(1,365)	-	(6,757)	(9.8%)	61,910
2020	-	10,427	(235)	-	10,192	100.0%	10,192
Grand Total	152,723	3,290	(3,587)	-	(297)	(0.2%)	152,426

EXHIBIT G

Components of IBNR (i.e. “Undiscounted”) Change During Month

RSP		Alberta Grid						IBNR - in \$000s
AccountCode Desc		IBNR - Undiscounted						
AccYear	Values							Sum of Current Month Final Amount
	Sum of Prior Month Actual Amount	Sum of Projected Change	Sum of Change Due to AvsP Variances	Sum of Change Due to Valuation Implementation	Sum of Total Change	Sum of % Total Change		
2004	(79)	2	(2)	-	-	-	(79)	
2005	(24)	-	-	-	-	-	(24)	
2006	(109)	2	(4)	-	(2)	1.8%	(111)	
2007	(143)	3	(3)	-	-	-	(143)	
2008	(77)	2	2	-	4	(5.2%)	(73)	
2009	131	(3)	3	-	-	-	131	
2010	80	(2)	(1)	-	(3)	(3.8%)	77	
2011	(169)	3	79	-	82	(48.5%)	(87)	
2012	(108)	2	(255)	-	(253)	234.3%	(361)	
2013	842	(17)	(77)	-	(94)	(11.2%)	748	
2014	2,029	(41)	106	-	65	3.2%	2,094	
2015	5,638	(113)	(53)	-	(166)	(2.9%)	5,472	
2016	8,770	(439)	(332)	-	(771)	(8.8%)	7,999	
2017	18,453	(554)	(572)	-	(1,126)	(6.1%)	17,327	
2018	32,077	(962)	(822)	-	(1,784)	(5.6%)	30,293	
2019	59,783	(4,783)	(1,575)	-	(6,358)	(10.6%)	53,425	
2020	-	9,215	(206)	-	9,009	100.0%	9,009	
Grand Total	127,094	2,315	(3,712)	-	(1,397)	(1.1%)	125,697	