ALBERTA GRID RISK SHARING POOL

DECEMBER 2019 OPERATIONAL REPORT

ACTUARIAL HIGHLIGHTS

Related Bulletin: F2020-007 Alberta RSPs December 2019 Operational Reports

For your convenience, bookmarks have been added to this document. To view them, please click on the BOOKMARK tab at the left.

Should you require any further information, please call Shawn Doherty, Senior Vice President Actuarial & CFO at (416) 644-4968.

FACILITY Association

ACTUARIAL HIGHLIGHTS

RSP ALBERTA GRID

OPERATIONAL REPORT

DECEMBER 2019

TABLE OF CONTENTS

1 Summary

Key Points

(a) The month's claims activities were generally aligned with projections from last month.

1.1 Valuation Schedule (Fiscal Year 2019)

The December 2019 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 2019.

ALBERTA GRID RISK SHARING POOL
FISCAL YEAR 2019 – SCHEDULE OF VALUATIONS

Valuation Date	Discount Rate (per annum)	Operational Report	Description of Changes
Sep. 30, 2018 (completed)	2.28% mfad 25 bp	Oct. 2018	updated valuation (roll forward): accident year 2018 loss ratio decreased 2.0 points to 89.8%; discount rate increased 41 basis points; no change to selected margins for adverse deviations
Dec. 31, 2018 (completed)	1.93% mfad 25 bp	Mar. 2019	updated valuation: accident year 2019 loss ratio decreased 0.3 points to 88.8%; discount rate decreased 35 basis points; no change to selected margins for adverse deviations
Mar. 31, 2019 (completed)	1.44% mfad 25 bp	May 2019	updated valuation (roll forward): accident year 2019 loss ratio increased 0.9 points to 89.7%; discount rate decreased 49 basis points; no change to selected margins for adverse deviations
Jun. 30, 2019 (completed)	1.41% mfad 25 bp	Aug. 2019	updated valuation: accident year 2019 loss ratio decreased 2.9 points to 86.8%; discount rate decreased 3 basis points; selected margins for adverse deviations were updated
Sep. 30, 2019 (completed)	1.44% mfad 25 bp	Oct. 2019	update valuation (roll forward): accident year 2019 loss ratio decreased 2.4 points to 84.4%; discount rate increased 3 basis points; no change to selected margins for adverse deviations

Under the proposed schedule for fiscal year 2019, the "off-half" valuation quarters ending March 31, 2019 and September 30, 2019 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) has assumed the Appointed Actuary's role effective as of October 24, 2019, from Liam McFarlane (the Appointed Actuary from June 1, 2013), due to Mr. McFarlane's departure from EY. It is anticipated that Mr. Pantaleo will be formally appointed by the

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 / Regulation[1]

There have been no changes in these descriptions since last month's Highlights.

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 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.

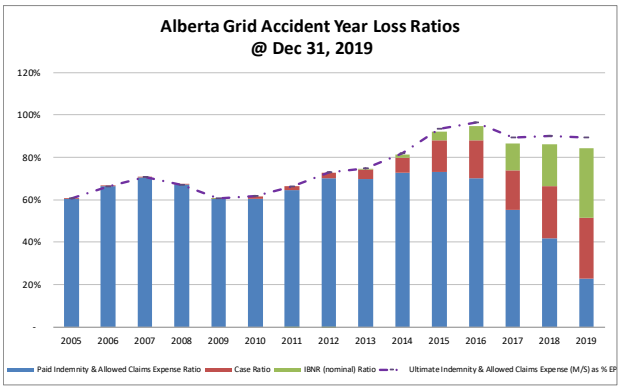
1.4 Current Provision Summary

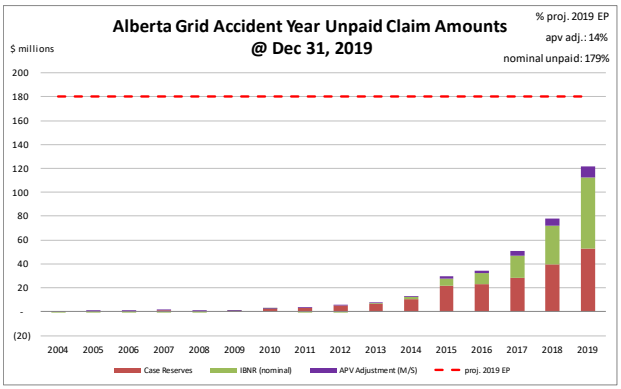
The charts at the top of the next page show the current levels of claim liabilities[2] booked by accident year[3]. The left chart displays life-to-date payments, case reserves, IBNR, and the total including actuarial present value adjustments against accident year earned premium. The right chart shows the associated dollar amounts for the components of the claim liabilities and the current projected amount of 2019 full year earned premium (the red hash-mark line) to provide some perspective.

[1]This 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.

[2]Claim 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.

[3]Accident 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 ($25.6 million – see table below) represents 14% of the earned premium projected for the full year 2019 (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	196,038	56.2%
ibnr	127,094	36.4%
M/S apv adjust.	25,629	7.3%
M/S total	348,761	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 72% of the IBNR balance relates to accident years 2018 and 2019 (see Exhibit B). Approximately 90% of the M/S total claim liabilities are related to accident years 2015-2019 inclusive (i.e. the most recent 5 accident years), and approximately 1% is related to accident years 2009 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	115,346	104.0%
prem def/(dpac)	(11,753)	(10.6%)
M/S apv adjust.	7,312	6.6%
M/S total	110,905	100.0%

policy liabilities ($000s)

	amt	%
claim	323,132	70.3%
premium	103,593	22.5%
M/S apv adjust.	32,941	7.2%
M/S total	459,666	100.0%

2 Activity During the Month of December 2019

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 Report[4].

[4]There 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	Earned Premium		Paid Indemnity & Allowed Claims Expense		Case increase / (decrease)		Recorded increase / (decrease)	
Accident Year	Actual	Actual less Projected	Actual	Actual less Projected	Actual	Actual less Projected	Actual	Actual less Projected
Prior	(1)	(1)	7,897	3,538	(7,115)	(3,177)	781	360
2017	(10)	(10)	1,002	(425)	(1,167)	(106)	(165)	(531)
2018	(22)	(22)	1,573	104	(176)	(47)	1,398	58
2019	17,415	(112)	5,194	1,192	5,317	(1,034)	10,511	158
TOTAL	17,381	(145)	15,665	4,409	(3,140)	(4,364)	12,525	45

(Recorded transaction amounts exclude IBNR & other actuarial provisions)

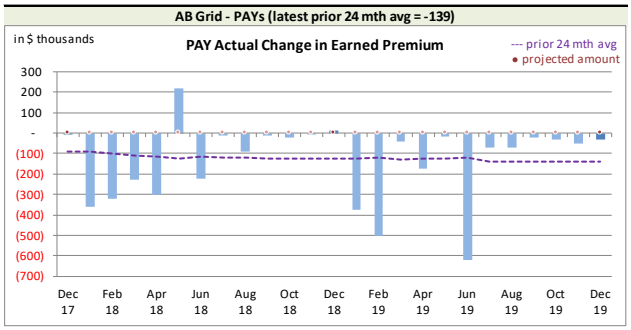
It is unusual to see actual earned premium transactions affecting prior accident years by this time in the calendar year – the prior accident years changes in the month reflect activity undertaken by a member reflecting recent audit findings.

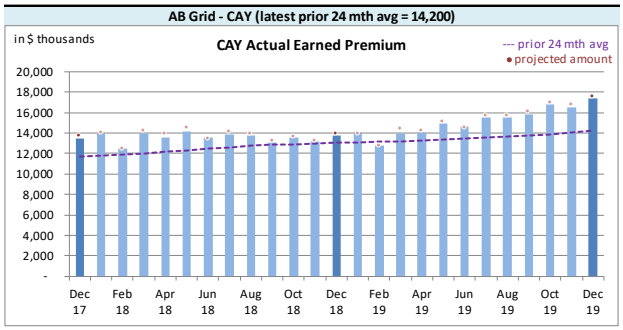
Claims transaction activity is generally volatile and changes from one month to the next are anticipated due to this natural "process variance" (i.e. random variation). Each month, the projection variances are reviewed for signs of projection bias and to identify potential ways to reduce the level of 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*





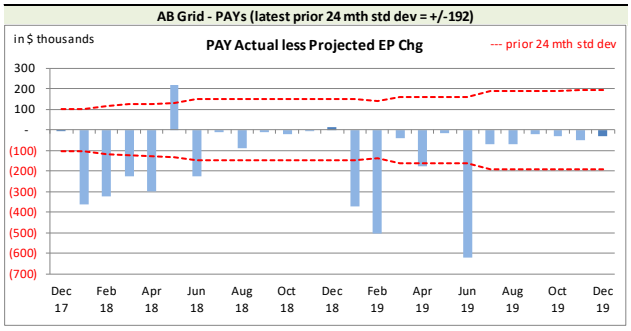
Earned premium changes during a given calendar month in relation to prior accident years tend to be at modest levels, although relatively high levels generally occur at the beginning of each year.

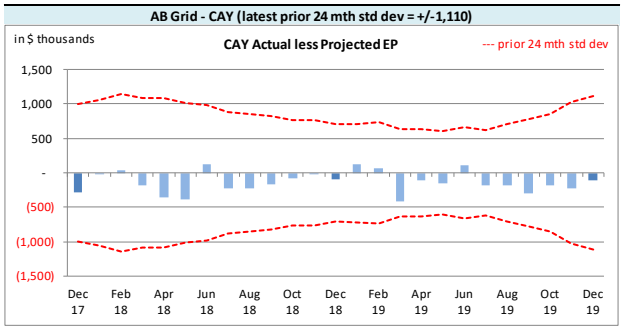
The associated variances between the actual changes and the projections from the previous month are shown in the charts at the top of the next page. **Earned premium** change projections are all attributed to the current accident year as the projection upload does not accept earned premium changes for 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

[5]Premium 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*





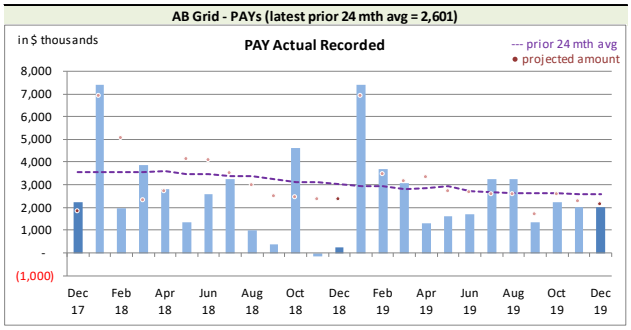
On Latest $ thousands		
Earned Premium	PAYs	CAY
Mthly Avg EP Chg (prior 24 mths)	(139)	14,200
std dev	192	1,110
A-P <> std dev	10	-
% <> std dev	40.0%	0.0%
norm <> std dev	31.7%	31.7%
performance vs 24-mth avg:	worse	better

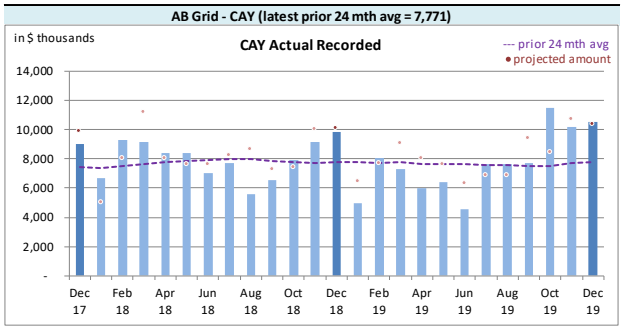
We project **earned premium** changes from known unearned premium and projected written premium levels, but upload the total projections as current accident year (CAY). This process has generated prior accident years' (PAYs) bias[6], with actuals generally lower than projected, although the magnitude is not high relative to monthly premium. In addition to the PAYs' bias, the CAY has also shown bias[7], 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*



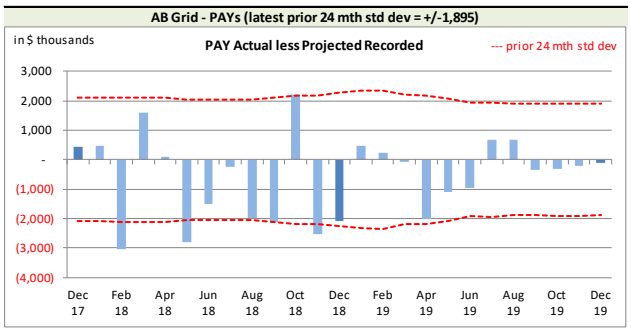


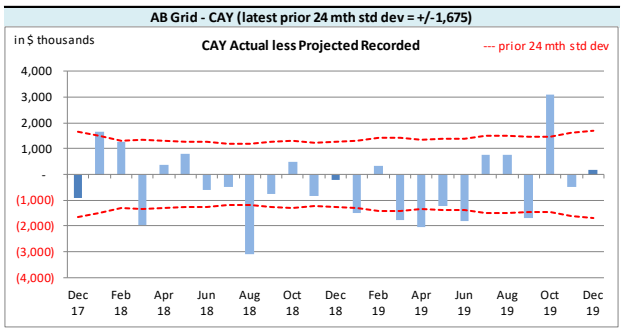
[6]The PAYs' variances will show bias as the projection upload forces all earned premium projections to be attributed to the CAY.

[7]We 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 December 2019 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)	2,601	7,771
std dev	1,895	1,675
A-P <> std dev	5	9
% <> std dev	20.0%	36.0%
norm <> std dev	31.7%	31.7%
performance vs 24-mth avg:	better	no better

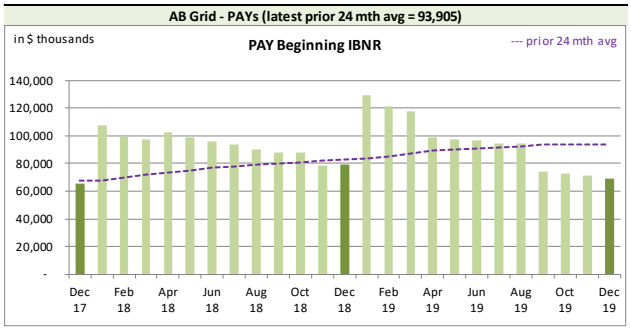
With respect to **recorded** indemnity & allowed claims expense activity, 20% of the prior accident years' (PAYs) variances over the last 25 calendar months have fallen outside of one standard deviation of the actual **recorded** amounts (see table on left), suggesting the projection process has performed 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).

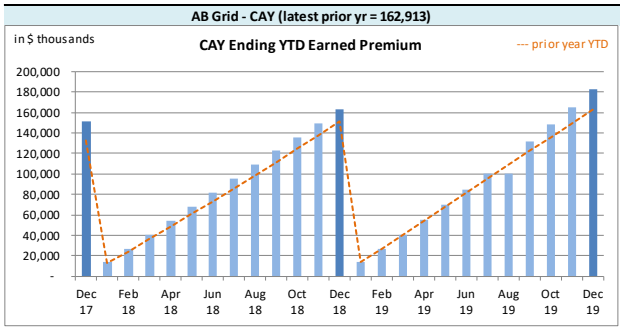
The current accident year (CAY) **recorded** variances fell outside of one standard deviation 36% of the time over the last 25 calendar months (see table above), suggesting that the projection process has performed no better than simply projecting the prior 24-month average amount. Bias has not been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

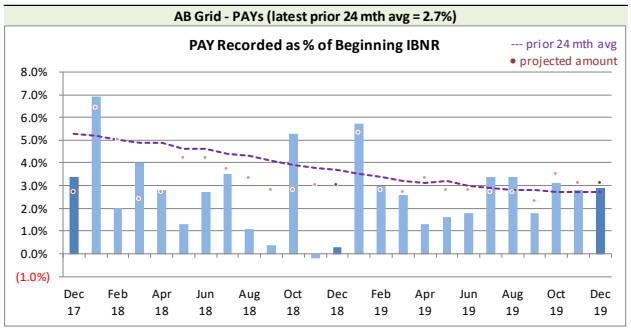
The method for establishing IBNR adjusts automatically for changes in **earned premium** and **recorded** claims activity level (see sections 2.2 and 3).

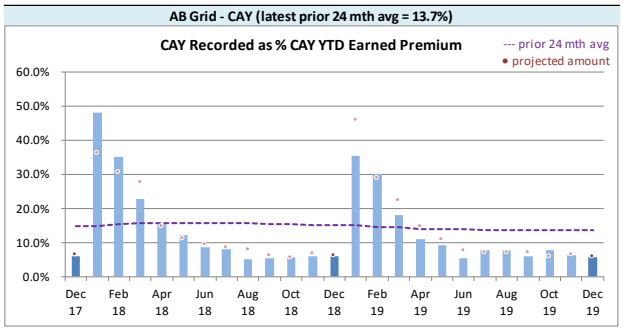
We have included, for reference, additional charts at the top of the next page related to levels influencing **recorded** activity. Note in particular the changes in the level of PAY beginning IBNR over the months, as a response to valuations and showing up as a beginning IBNR change one month after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

Alberta Grid RSP Levels that influence[8] ***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:

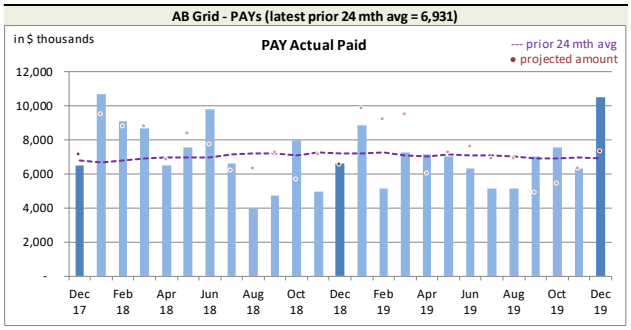
- to offset actual **recorded** activity (through loss ratio matching);
- the annual switchover as a CAY becomes a PAY (occurs in January); and
- when a new valuation is implemented, where the valuation resulted in changes to the selection of PAYs' ultimates (will show up as a beginning IBNR change one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

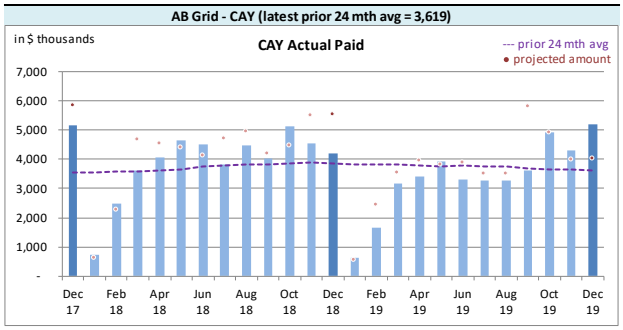
2.1.c AvsP: Paid Indemnity & Allowed Claims Expense

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.

[8]Our 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.

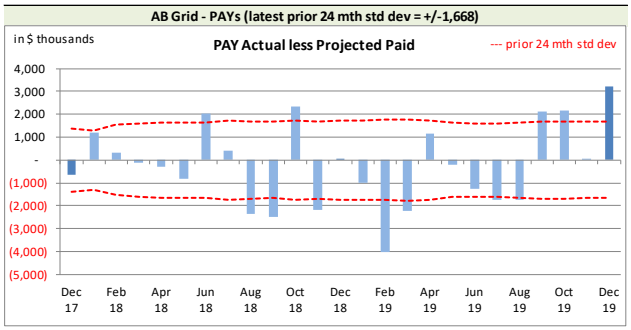
*Alberta Grid RSP Actual **Paid** activity by Calendar Month*

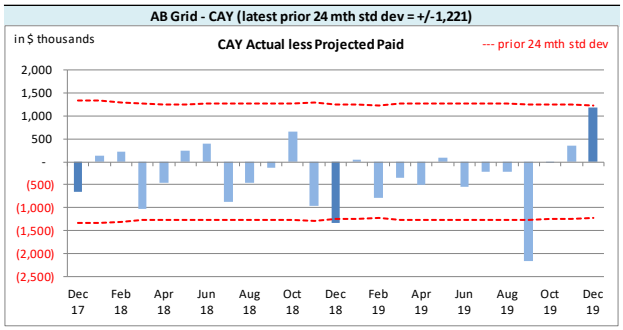




Paid activity variances from the previous month's projections are shown in the charts below, including the prior 24-month standard deviation levels to show how the variances from projection compare with historical standard deviations.

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





On Latest $ thousands		
Paid	PAYs	CAY
Mthly Avg Paid (prior 24 mths)	6,931	3,619
std dev	1,668	1,221
A-P <> std dev	12	2
% <> std dev	48.0%	8.0%
norm <> std dev	31.7%	31.7%
performance vs 24-mth avg:	worse	better

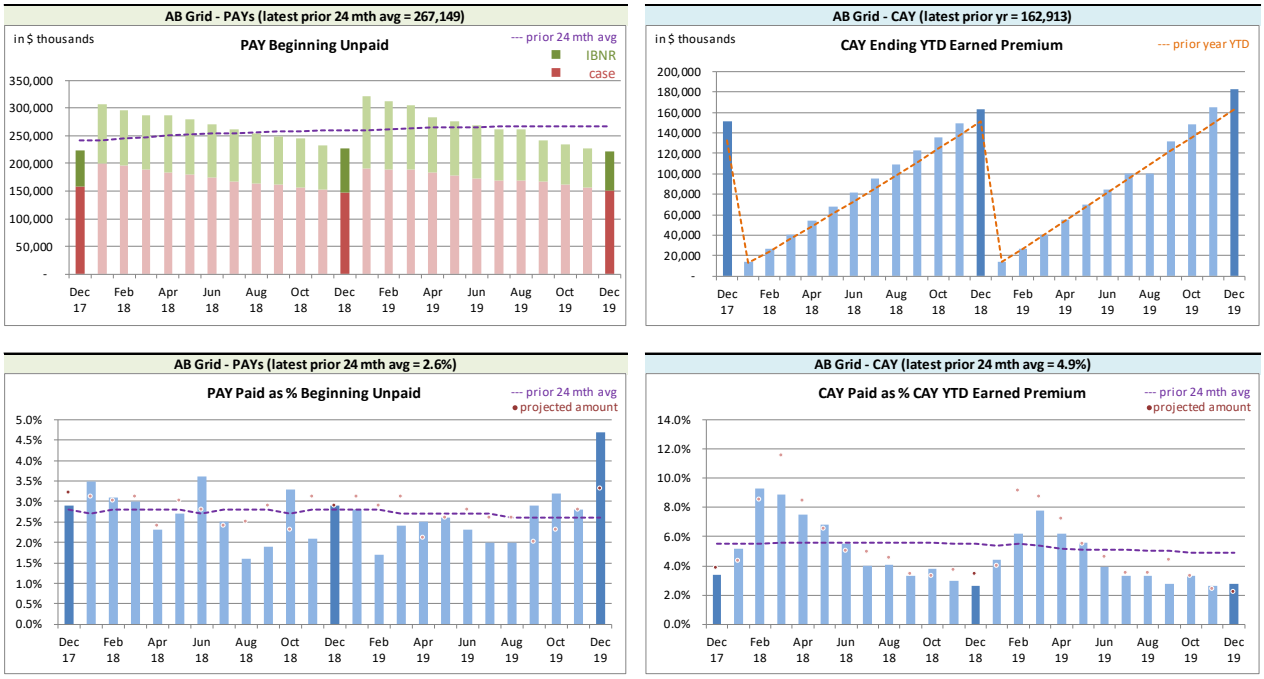
With respect to **paid** indemnity & allowed claims expense, 48% of the prior accident years' (PAYs) variances over the last 25 calendar months have fallen outside of one standard deviation of the actual **paid** amounts (see table on left), suggesting the projection process has performed worse than 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** variance was outside of the one standard deviation band this month (see right chart above). The activity was reviewed and verified, 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 influence[9] ***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 IBNR[10], 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

[9]Our 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.

[10]For 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

	IBNR		actuarial present value adjustments: Discount Amount		actuarial present value adjustments: Provisions for Adverse Deviations		IBNR + actuarial present value adjustments	
Accident Year	Actual	Actual less Projected	Actual	Actual less Projected	Actual	Actual less Projected	Actual	Actual less Projected
Prior	16,781	(360)	(2,836)	110	9,383	(360)	23,328	(610)
2017	18,453	523	(1,769)	(15)	5,878	52	22,562	560
2018	32,077	(77)	(3,018)	5	9,107	(16)	38,166	(88)
2019	59,783	(252)	(4,843)	55	13,727	(157)	68,667	(354)
TOTAL	127,094	(166)	(12,466)	155	38,095	(481)	152,723	(492)

The IBNR provision is $0.2 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:	(11,753)	(187)	7,312	104	(4,441)	(83)
balance as % unearned premium:	(10.2%)	-	6.3%	(0.1%)	(3.9%)	(0.1%)
actual unearned premium:	115,346					
less projected:	1,622					

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 loss[11] 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 expenses[12], 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 85.3% rather than 84.4% (the valuation ultimate ratio for accident year 2019), 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	(29,154)	(16.2%)	(636)	(0.4%)	(29,790)	(16.5%)	(816)	1.3%
CAY	153,841	85.3%	8,884	4.9%	162,725	90.2%	15,448	(0.2%)
TOTAL	124,687	69.1%	8,248	4.6%	132,935	73.7%	14,632	1.1%

("% 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).

[12] 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 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

IBNR + M/S actuarial present value adjustments

discount rate
1.44%

interest rate margin
25 basis pts

Amounts in $000s					
Accident Year	Actual Nov. 2019	Actual Dec. 2019	Projected Jan. 2020	Projected Feb. 2020	Projected Dec. 2020
2004	(71)	(71)	(69)	(67)	(48)
2005	15	15	17	16	11
2006	(99)	(99)	(96)	(94)	(68)
2007	(30)	(33)	(28)	(27)	(22)
2008	(46)	(52)	(50)	(48)	(34)
2009	160	162	160	156	109
2010	294	289	283	276	193
2011	484	76	77	75	52
2012	275	263	252	247	171
2013	1,260	1,378	1,366	1,338	948
2014	2,993	2,908	2,891	2,833	2,011
2015	8,114	7,554	7,464	7,314	5,196
2016	11,326	10,938	10,524	10,313	6,730
2017	22,494	22,562	22,128	21,191	15,422
2018	39,717	38,166	37,392	36,956	28,790
2019	63,730	68,667	63,275	61,294	49,865
2020	-	-	10,427	19,295	82,119
TOTAL	150,616	152,723	156,013	161,068	191,445
Change		2,107	3,290	5,055	

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 Nov. 2019	Actual Dec. 2019	Projected Jan. 2020	Projected Feb. 2020	Projected Dec. 2020
51.6%	2004	(79)	(79)	(77)	(75)	(53)
60.5%	2005	(24)	(24)	(24)	(24)	(17)
66.3%	2006	(109)	(109)	(107)	(105)	(75)
70.9%	2007	(140)	(143)	(140)	(137)	(98)
67.1%	2008	(71)	(77)	(75)	(73)	(52)
60.6%	2009	128	131	128	125	88
61.5%	2010	84	80	78	76	53
66.3%	2011	90	(169)	(166)	(163)	(115)
72.8%	2012	(112)	(108)	(106)	(104)	(74)
74.6%	2013	660	842	825	808	577
81.2%	2014	2,098	2,029	1,988	1,948	1,391
92.0%	2015	6,112	5,638	5,525	5,414	3,867
94.6%	2016	8,925	8,770	8,331	8,164	5,095
86.4%	2017	18,296	18,453	17,899	17,004	12,139
86.2%	2018	33,494	32,077	31,115	30,804	23,660
84.4%	2019	55,596	59,783	55,000	53,350	43,570
89.5%	2020	-	-	9,215	17,054	70,929
	TOTAL	124,948	127,094	129,409	134,066	160,885
	Change		2,146	2,315	4,657	

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

EXHIBIT C

Premium Liabilities

TABLE EXHIBIT C	Amounts in $000s				
Premium Liabilities	Actual Nov. 2019	Actual Dec. 2019	Projected Jan. 2020	Projected Feb. 2020	Projected Dec. 2020
(1) unearned premium (UP)	116,043	115,346	112,496	109,579	120,483
FOR MEMBER SHARING					
(2) expected future costs ratio {% of (1)}	95.4%	96.1%	96.2%	96.2%	97.8%
(3) expected future costs {(1) x (2)}	110,663	110,905	108,170	105,391	117,776
(4) premium deficiency / (deferred policy acquisition cost)	(5,380)	(4,441)	(4,326)	(4,188)	(2,707)
Excluding Actuarial Present Value Adjustments					
(5) expected future costs ratio {% of (1)}	89.1%	89.8%	89.8%	89.8%	91.3%
(6) expected future costs {(1) x (5)}	103,368	103,593	101,039	98,442	110,012
(7) premium deficiency / (deferred policy acquisition cost)	(12,675)	(11,753)	(11,457)	(11,137)	(10,471)

EXHIBIT D

Projected Year-end Policy Liabilities

The table below presents the projected policy liabilities as at December 31, 2019, broken down by component.

Alberta Grid	Projected Balances as at Dec. 31, 2019 ($000s)									
ending 2019	nominal values			actuarial present value adjustments (apvs)						
Acc Yr	Case	IBNR	Total Unpaid	discount	investment PfAD	nominal development PfAD	development PfAD discount	development PfAD	Total apvs	TOTAL
2004	-	(79)	(79)	-	-	8	-	8	8	(71)
2005	440	(24)	416	(4)	1	42	-	42	39	455
2006	228	(109)	119	(2)	-	12	-	12	10	129
2007	1,513	(143)	1,370	(29)	5	137	(3)	134	110	1,480
2008	407	(77)	330	(8)	1	33	(1)	32	25	355
2009	274	131	405	(10)	2	40	(1)	39	31	436
2010	2,602	80	2,682	(64)	11	268	(6)	262	209	2,891
2011	3,368	(169)	3,199	(83)	16	320	(8)	312	245	3,444
2012	4,892	(108)	4,784	(115)	19	478	(11)	467	371	5,155
2013	6,273	842	7,115	(185)	28	711	(18)	693	536	7,651
2014	10,183	2,029	12,212	(366)	61	1,221	(37)	1,184	879	13,091
2015	21,826	5,638	27,464	(879)	137	2,746	(88)	2,658	1,916	29,380
2016	23,305	8,770	32,075	(1,091)	160	3,208	(109)	3,099	2,168	34,243
2017	28,111	18,453	46,564	(1,769)	279	5,820	(221)	5,599	4,109	50,673
2018	39,773	32,077	71,850	(3,018)	503	8,981	(377)	8,604	6,089	77,939
PAYs (sub-total):	143,195	67,311	210,506	(7,623)	1,223	24,025	(880)	23,145	16,745	227,251
CAY (2019)	52,843	59,783	112,626	(4,843)	901	13,402	(576)	12,826	8,884	121,510
claims liabilities:	196,038	127,094	323,132	(12,466)	2,124	37,427	(1,456)	35,971	25,629	348,761
	Unearned Premium	Premium Deficiency / (DPAC)	Total Provision	discount	investment PfAD	nominal development PfAD	development PfAD discount	development PfAD	Total apvs	TOTAL*
premium liabilities:	115,346	(11,753)	103,593	(4,026)	723	11,046	(431)	10,615	7,312	110,905
										*Total may not be sum of parts, as apvs apply to future costs within UPR
policy liabilities:			**426,725**	**(16,492)**	**2,847**	**48,473**	**(1,887)**	**46,586**	**32,941**	**459,666**

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	Accident Benefits	Other Coverages	Total
	Margins	Margins	Margins	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%
prem liab	11.8%	10.0%	5.1%	10.7%

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, 2019, 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

	Values						
AccYear	**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**	**Sum of Current Month Final Amount**
2004	(71)	-	-	-	-	-	(71)
2005	15	(3)	3	-	-	-	15
2006	(99)	-	-	-	-	-	(99)
2007	(30)	(5)	2	-	(3)	10.0%	(33)
2008	(46)	-	(6)	-	(6)	13.0%	(52)
2009	160	(3)	5	-	2	1.3%	162
2010	294	(15)	10	-	(5)	(1.7%)	289
2011	484	(26)	(382)	-	(408)	(84.3%)	76
2012	275	(22)	10	-	(12)	(4.4%)	263
2013	1,260	(42)	160	-	118	9.4%	1,378
2014	2,993	(75)	(10)	-	(85)	(2.8%)	2,908
2015	8,114	(385)	(175)	-	(560)	(6.9%)	7,554
2016	11,326	(161)	(227)	-	(388)	(3.4%)	10,938
2017	22,494	(492)	560	-	68	0.3%	22,562
2018	39,717	(1,463)	(88)	-	(1,551)	(3.9%)	38,166
2019	63,730	5,291	(354)	-	4,937	7.7%	68,667
Grand Total	**150,616**	**2,599**	**(492)**	**-**	**2,107**	**1.4%**	**152,723**

EXHIBIT G

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

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

IBNR - in $000s

AccYear	Values 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	Sum of Current Month Final Amount
2004	(79)	1	(1)	-	-	-	(79)
2005	(24)	-	-	-	-	-	(24)
2006	(109)	1	(1)	-	-	-	(109)
2007	(140)	1	(4)	-	(3)	2.1%	(143)
2008	(71)	1	(7)	-	(6)	8.5%	(77)
2009	128	(1)	4	-	3	2.3%	131
2010	84	(1)	(3)	-	(4)	(4.8%)	80
2011	90	(1)	(258)	-	(259)	(287.8%)	(169)
2012	(112)	1	3	-	4	(3.6%)	(108)
2013	660	(7)	189	-	182	27.6%	842
2014	2,098	(21)	(48)	-	(69)	(3.3%)	2,029
2015	6,112	(306)	(168)	-	(474)	(7.8%)	5,638
2016	8,925	(89)	(66)	-	(155)	(1.7%)	8,770
2017	18,296	(366)	523	-	157	0.9%	18,453
2018	33,494	(1,340)	(77)	-	(1,417)	(4.2%)	32,077
2019	55,596	4,439	(252)	-	4,187	7.5%	59,783
Grand Total	**124,948**	**2,312**	**(166)**	**-**	**2,146**	**1.7%**	**127,094**