ALBERTA GRID RISK SHARING POOL

MARCH 2018 OPERATIONAL REPORT

ACTUARIAL HIGHLIGHTS

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FACILITY Association

ACTUARIAL HIGHLIGHTS

RSP ALBERTA GRID

OPERATIONAL REPORT

MARCH 2018

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1 Summary

1.1 Valuation Schedule (Fiscal Year 2018)

The March 2018 Operational Report incorporates the results of an updated valuation (as at December 31, 2017) – the impact of the implementation of the valuation is discussed in section 1.2. The table immediately below summarizes the implemented valuations and future scheduled valuations for fiscal year 2018.

ALBERTA GRID RISK SHARING POOL FISCAL YEAR 2018 – SCHEDULE OF VALUATIONS			
Valuation Date	**Discount Rate (per annum)**	**Operational Report**	**Description of Changes**
Sep. 30, 2017 (completed)	1.76% mfad: 25 bp	Oct. 2017	updated valuation (roll forward): accident year 2017 loss ratio decreased 0.3 points to 89.9%; discount rate increased by 57 basis points; no change to selected margins for adverse deviations
Dec. 31, 2017 (completed)	1.75% mfad: 25 bp	Mar. 2018	update valuation: accident year 2018 loss ratio increased 4.9 points to 90.7%; discount rate decreased by 1 basis point; no change to selected margins for adverse deviations
Mar. 31, 2018		May 2018	update valuation (roll forward):
Jun. 30, 2018		Aug. 2018	update valuation:
Sep. 30, 2018		Oct. 2018	update valuation (roll forward):

Under the proposed schedule for fiscal year 2018, the "off-half" valuation quarters ending March 31, 2018 and September 30, 2018 would not reflect a full valuation update of assumptions, but would rather "roll-forward" key assumptions from the previous valuation.

1.2 New Valuation

A valuation of the Alberta Grid Risk Sharing Pool ("RSP") as at December 31, 2017 has been completed since last month's Operational Report and the results of that valuation have been incorporated into this month's Report. The valuation was completed by the Facility Association's internal actuarial group in conjunction with, and approved by, the Appointed Actuary, under the hybrid model for actuarial services. Additional detail will be provided in an "Actuarial Highlights – Quarterly Valuation" report which we anticipate will be posted to the FA website in early May.

The valuation implementation impact is summarized in the tables on the next page.

Summary of Impact ($000s) of Implementing Result of Valuation as at December 31, 2017[1]

AB Grid	unfav / (fav) for the month and ytd					
	IMPACT in $000s from changes in:					
	ults & payout patterns			dsct rate	margins	
	Nominal [1]	apv adj. [2]	sub-tot [3]	apv adj. [4]	apv adj. [5]	TOTAL [6]
PAYs	8,778	2,216	10,994	22	-	11,016
CAY	1,982	159	2,141	4	-	2,145
Prem Def	4,027	322	4,349	-	-	4,349
TOTAL	14,787	2,697	17,484	26	-	17,510

As indicated in the table above, the incorporation of the new valuation had an estimated ***$17.5 million unfavourable impact*** on the month's net result from operations, adding an estimated 44.3 points (see table immediately below) to the **year-to-date Combined Operating Ratio** to end at **157.0%.**

Summary of Impact (% YTD EP) of Implementing Result of Valuation as at December 31, 2017

AB Grid	ytd EP 39,507 (actual)					
	IMPACT unfav / (fav) as % ytd EP from changes in:					
	ults & payout patterns			dsct rate	margins	
	Nominal [1]	apv adj. [2]	sub-tot [3]	apv adj. [4]	apv adj. [5]	TOTAL [6]
PAYs	22.2%	5.6%	27.8%	0.1%	-	27.9%
CAY	5.0%	0.4%	5.4%	-	-	5.4%
Prem Def	10.2%	0.8%	11.0%	-	-	11.0%
TOTAL	37.4%	6.8%	44.3%	0.1%	-	44.3%

The impact of the nominal changes is shown in column [1] of the two preceding summary tables. The change in the selected nominal ultimates was unfavourable by $14.8 million overall. This reflects the impact attributable to the changes in the selected ultimate loss ratios (i.e. for each accident year, it is the product of life-to-date earned premium for the accident year and the change in the selected ultimate loss ratio).

The prior accident years overall showed an $8.8 million unfavourable variance as recorded claims activity continues to show unfavourable actual experience relative to recorded activity projected from the previous valuation, particularly with respect to bodily injury recorded activity (note that we are not seeing the same level of adverse bodily injury recorded activity in the Non-Grid RSP, nor in the FARM results for Alberta). This unfavourable impact is 3.1% of the prior accident years' nominal unpaid balance of $286.6 million determined at the end of last month (February 2018).

[1]In these tables, "PAYs" refers to prior accident years, "CAY" refers to the current accident year, and "Prem Def" refers to the provision for premium deficiency or the deferred policy acquisition asset (as applicable). "Nominal" refers to changes excluding any actuarial present value adjustments, whereas "apv adj." refers to actuarial present value adjustments.

The columns under the heading "ults & payout patterns" reflect the impact of changes in the valuation selected ultimates and claims payment patterns (i.e. based on unchanged selection of discount rates and margins for adverse deviation). The column "dsct rate" reflects the impact of the change in the selected discount rate and the column "margins" reflects the impact of any changes in selected margins for adverse deviations.

The current accident year and premium deficiency impacts are a result of the change in the selected loss ratio for accident year **2018** (up 4.9 points from 85.8% to **90.7%**) and **2019** (up 4.8 points from 87.4% to **92.2%**).

The impacts related to actuarial present value ("apv") adjustments are split into the impact prior to any change in the selected discount rate and selected margins for adverse deviations or "MfADs" (at the level they were selected i.e. coverage and accident half-year), the impact of then updating the discount rate, and finally the impact of any changes to the MfADs (at the level they were selected). The changes in actuarial present value adjustments are shown in the summary tables in columns [2], [4], and [5].

Column [2] recognizes that changing the nominal selections also changed the unpaid estimates (including changes to the relative mix by government line, which had an impact on the weighted-average MfADs). It also reflects the fact that we updated the projected emergence of claims payments, resulting in a change in the projected cash flows. These changes generated an unfavourable change of $2.7 million in the actuarial present value adjustments, prior to any changes in the selected discount rate and/or MfADs.

Claims payment emergence patterns were updated and cash flows were reviewed against the selected risk-free yield curve, derived from Government of Canada benchmark bond yields monthly series using values for December 2017. Column [4] accounts for the change in the **discount rate** selected (decreased 1 basis point to **1.75%**), indicating an unfavourable impact of $0.0 million. The impact *related only to claims liabilities* (i.e. PAYs plus CAY) was $0.0 million at March 2018 – this compares to the $0.1 million change one would estimate as the impact by interpolation using the interest rate sensitivity table provided in last month's Actuarial Highlights.

Column [5] accounts for any changes to selected MfADs. The selected **investment rate MfAD** was **left unchanged at 25 basis points** and the selected **claims development MfADs** at the coverage and accident year level were **left unchanged** as well.

Consideration was given to recent legal decisions and changes in legislation / regulation as noted above and outlined in section 1.4.

1.3 Appointed Actuary and Hybrid Actuarial Services Model

Liam McFarlane of Ernst & Young LLP is Facility Association's Appointed Actuary (effective as of June 1, 2013).

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.

1.4 Consideration of Recent Legal Decisions and Changes in Legislation / Regulation

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.

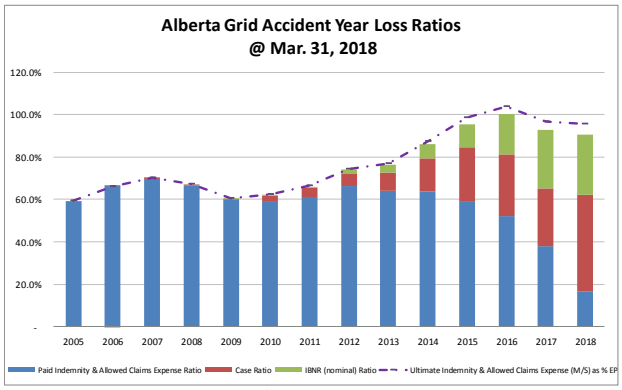
The **Supreme Court of Canada** rendered its judgment on **Saadati v Moorhead** (**2017** SCC 28, **rendered on Jun 2, 2017**). Saadati was involved in a collision in July of 2005 in British Columbia and sued the at-fault driver for damages. According the Supreme Court decision, "*The trial judge found that the ... accident caused S[aadati] psychological injuries, including personality change and cognitive difficulties. ...and awarded S[aadati] $100,000 for non-pecuniary damages*." The trial decision was appealed to the BC Court of Appeal where the trial's $100,000 non-pecuniary award was dismissed. The Supreme Court upheld the $100,000 non-pecuniary award, determining:

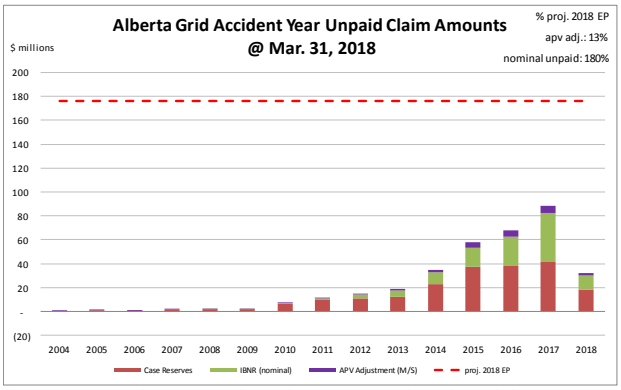
- "*A finding of legally compensable mental injury need not rest, in whole or in part, on the claimant proving a recognized psychiatric injury.*"
- "*...a trier of fact adjudicating a claim of mental injury is not concerned with diagnosis, but with symptoms and their effects.*"
- "*Expert evidence can assist in determining whether or not a mental injury has been shown, but where psychiatric diagnosis is unavailable, it remains open to a trier of fact to find on other evidence adduced by the claimant that he or she has proven on a balance of probabilities the occurrence of mental injury*."

At the current time, no adjustments have been made to our valuation estimates or views based on the judgment as rendered, but we continue to review and consider the implications of the judgment.

1.5 Current Provision Summary

The charts immediately below 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 2018 full year earned premium (the red hash-mark line) to provide some perspective.





"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 ($23.5 million – see table at the top of the next page) represents 13% of the earned premium projected for the full year 2018 (see the upper

[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.

right corner of the right chart at the bottom of the previous page). 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	202,713	59.6%
ibnr	113,698	33.5%
M/S apv adjust.	23,455	6.9%
M/S total	339,866	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 pool is in case reserves. Approximately 47% of the IBNR balance relates to accident years 2017 and 2018 (see Exhibit B). Approximately 83% of the M/S total claim liabilities are related to accident years 2014-2018 inclusive (i.e. the most recent 5 accident years), and approximately 1% is related to accident years 2008 and prior (i.e. prior to the most recent 10 accident years).

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

premium liabilities ($000s)

	amt	%
unearned prem	82,278	103.5%
prem def/(dpac)	(7,321)	(9.2%)
M/S apv adjust.	4,528	5.7%
M/S total	79,485	100.0%

policy liabilities ($000s)

	amt	%
claim	316,411	75.5%
premium	74,957	17.9%
M/S apv adjust.	27,983	6.7%
M/S total	419,351	100.0%

2 Activity During the Month of March 2018

2.1 Recorded Premium and Claims Activity

The table immediately below 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].

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	8	8	4,882	1,373	(1,720)	673	3,162	2,046
2016	13	13	951	(251)	(1,159)	(377)	(207)	(627)
2017	(247)	(247)	2,844	(1,218)	(1,911)	1,388	933	170
2018	13,965	(188)	3,612	(1,035)	5,560	(938)	9,172	(1,973)
TOTAL	13,738	(414)	12,290	(1,131)	770	746	13,060	(384)

(Recorded transaction amounts exclude IBNR & other actuarial provisions)

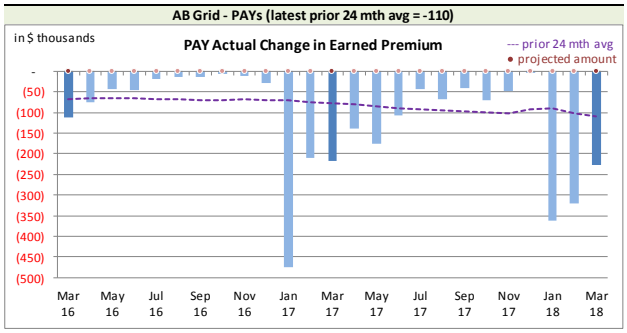
Claims transaction activity is generally volatile and changes from one month to the next are anticipated due to this natural "process variance" (i.e. random variation). Each month, the projection variances are reviewed for signs of projection bias and to identify potential ways to reduce the level of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

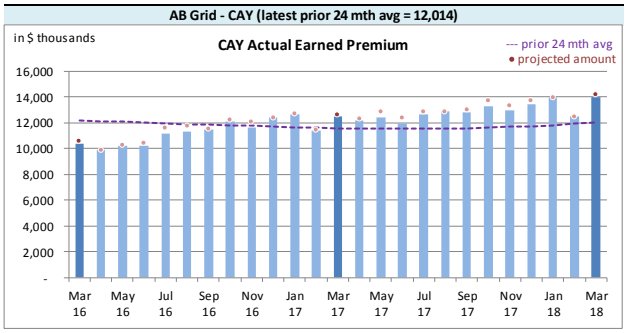
[4]There may be rounding differences in values in this document compared with the associated Bulletin and/or Operational Report.

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

The charts immediately 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*



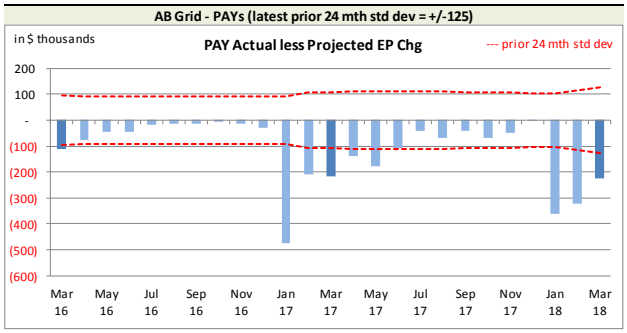


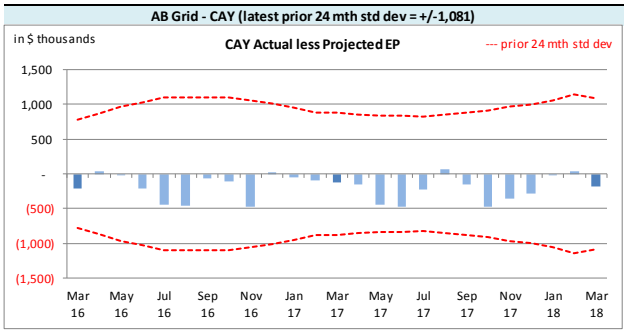
Earned premium changes during a given calendar month in relation to prior accident years tend to be at modest levels, although relatively high levels seem to occur at the beginning of each year.

We have noted and have investigated the unusually high level of PAYs earned premium activity earlier in 2017 and January through March 2018, particularly with respect to one member. FA management reviewed and was satisfied with the appropriateness of the 2017 transactions, but continues its investigation of the 2018 transactions.

The associated variance between the actual changes and the projections from the previous month are shown in the charts immediately below. **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 prior accident years.

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





[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.

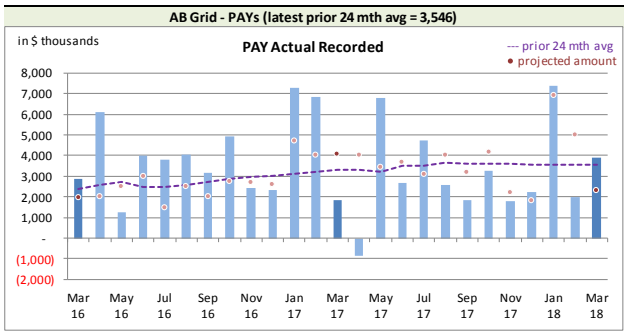
On Latest $ thousands		
Earned Premium	PAYs	CAY
Mthly Avg EP Chg (prior 24 mths)	(110)	12,014
std dev	125	1,081
A-P <> std dev	9	-
% <> std dev	36.0%	0.0%
norm <> std dev	31.7%	31.7%

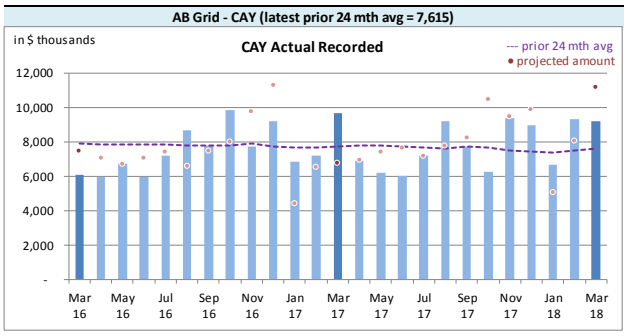
We project **earned premium** changes from known unearned premium and projected written premium levels, but upload the total projections as current accident year (CAY). This process has generated prior accident years' (PAYs) bias[6], with actuals generally lower than projected. However, the magnitude 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 we modified our projections processes in response, but 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 immediately 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.

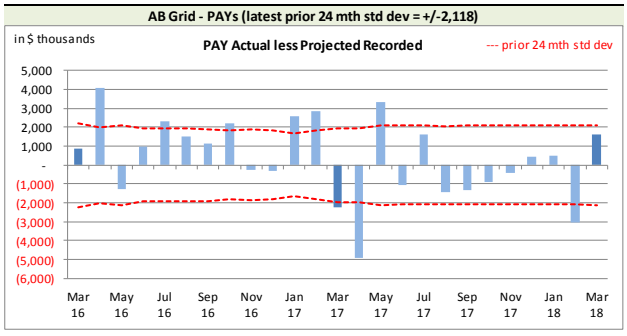
Alberta Grid RSP Actual **Recorded** *by Calendar Month*

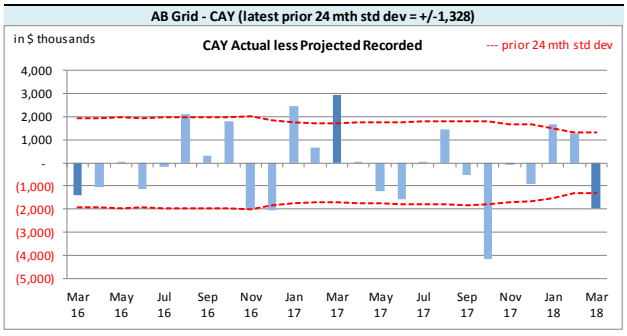




Recorded activity variances from the previous month's projections are shown in the charts immediately below, including the "prior 24-month standard deviation" levels to show how the variances from projection compare with historical standard deviations.

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





[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 (24 in this case) and 50% probability of success. The 24-month variances at March 2018 has only 4 months where the projection was higher than projected, and as the 95% confidence range is 7 to 17, bias continues to be indicated.

On Latest $ thousands		
Recorded	PAYs	CAY
Mthly Avg Recorded (prior 24 mths)	3,546	7,615
std dev	2,118	1,328
A-P <> std dev	9	8
% <> std dev	36.0%	32.0%
norm <> std dev	31.7%	31.7%

With respect to **recorded** indemnity & allowed claims expense activity, 36% of the prior accident years' (PAYs) variances (left chart at the bottom of the previous page) over the last 25 months have fallen outside of one standard deviation of the actual **recorded** amounts, suggesting the projection process has performed no better than simply projecting from the prior 24-month average. No bias has been indicated at a 95% confidence level on a lagging 24-month basis.

The current accident year (CAY) **recorded** variances (right chart at the bottom of the previous page), have been greater than one standard deviation 32% of the time, which suggests that the projection process has performed no better than simply projecting the most recent prior 24-month average. No bias has been indicated at a 95% confidence level on a lagging 24-month basis.

The CAY **recorded** variance was outside of one standard deviation. The activity was reviewed and confirmed, with the variance attributed to a combination of process variance and a poor projection.

We note that there may be a change in the levels of CAY **recorded** and **paid** activity relative to year-to-date **earned premium**, as evidenced by the average of monthly ratios over the past several years shown in the tables immediately below. These tables show, in each row, the average monthly ratio for each calendar year. That is, each row in the left table (as at Dec) provides the average of the 12 monthly-ratios (i.e. Jan, Feb, ... Dec) for that row's calendar year, whereas each row in the right table (as at March) provides the average of the 3 monthly ratios (i.e. Jan-Mar) for that row's calendar year.

CAY avg of mthly ratios for yr

as at	Rec'd	yr-on-yr chg	Paid	yr-on-yr chg
Dec 2009	11.5%		4.4%	
Dec 2010	10.9%	(0.6%)	4.5%	0.1%
Dec 2011	12.8%	1.9%	4.8%	0.3%
Dec 2012	12.4%	(0.4%)	4.7%	(0.1%)
Dec 2013	12.6%	0.2%	4.8%	0.1%
Dec 2014	13.8%	1.2%	5.3%	0.5%
Dec 2015	14.4%	0.6%	5.5%	0.2%
Dec 2016	14.0%	(0.4%)	5.4%	(0.1%)
Dec 2017	15.5%	1.5%	5.6%	0.2%

CAY avg of mthly ratios for yr

as at	Rec'd	yr-on-yr chg	Paid	yr-on-yr chg
Mar 2009	25.7%		5.5%	
Mar 2010	22.4%	(3.3%)	6.1%	0.6%
Mar 2011	29.8%	7.4%	6.1%	0.0%
Mar 2012	24.9%	(4.9%)	5.9%	(0.2%)
Mar 2013	26.8%	1.9%	5.6%	(0.3%)
Mar 2014	27.2%	0.4%	6.4%	0.8%
Mar 2015	29.8%	2.6%	6.9%	0.5%
Mar 2016	27.0%	(2.8%)	7.0%	0.1%
Mar 2017	36.9%	9.9%	8.0%	1.0%
Mar 2018	35.3%	(1.6%)	7.8%	(0.2%)

Both **recorded** and **paid** ratios for Dec. 2017 relative to Dec. 2009 have increased at an annual rate of almost 4% over and above any premium rate level increases. At this point, we are only monitoring, but the valuation team has been advised and is taking this information into consideration. Further, while the average of the 12 monthly ratios at December for 2016 was down from 2015, the December 12-month average ratios for calendar year 2017 were at the highest level for both **recorded** and **paid**.

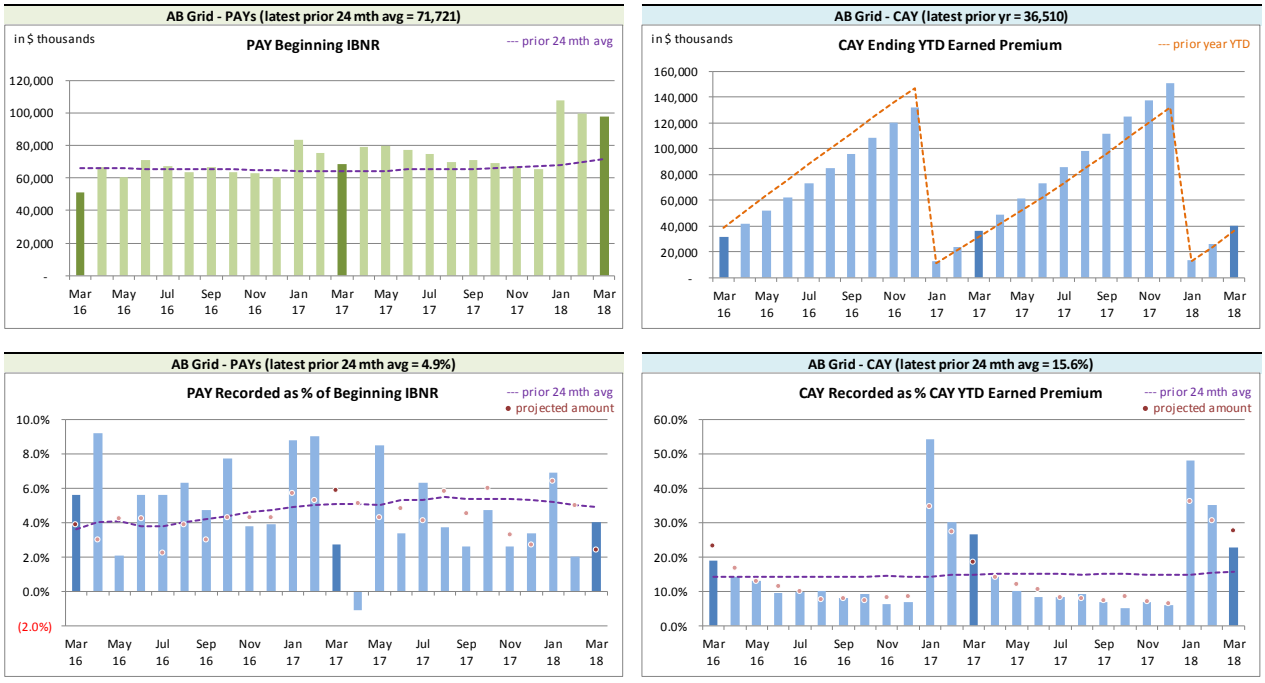
As can be seen in the right table above, (average of 3 months to March of each year), both the **recorded** and **paid** ratio were the second highest ratios since 2009, though down from 2017 (the highest **recorded** and **paid** ratios). However, these ratios are more volatile earlier in the year due to smaller year-to-date earned premium levels.

Note that we have NOT found similar changes in the results for the Alberta Non-Grid RSP nor in the FARM Alberta results.

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 immediately below 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 beginning prior accident years' IBNR as **recorded** activity "comes out of" IBNR. Changes in the prior accident years' beginning IBNR (see upper left chart above) occur for several possible reasons:

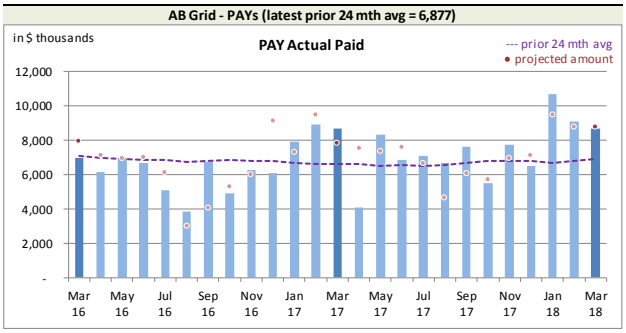
- to offset actual **recorded** activity (through loss ratio matching);
- the annual switchover as a current accident year becomes a prior accident year (occurs in January); and
- when a new valuation is implemented, where the valuation resulted in changes to the selection of prior accident years' ultimate (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).

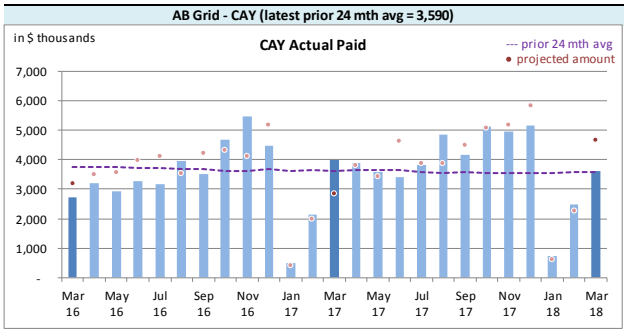
[8]Our recorded activity projections for the prior accident years are based on selected ratios of recorded activity to beginning unpaid balances, whereas the current accident year projections are based on selected ratios of year-to-date IBNR to year-to-date selected ultimate (i.e. selected LR x earned 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.

2.1.c AvsP: Paid Indemnity & Allowed Claims Expense

The charts immediately below 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.

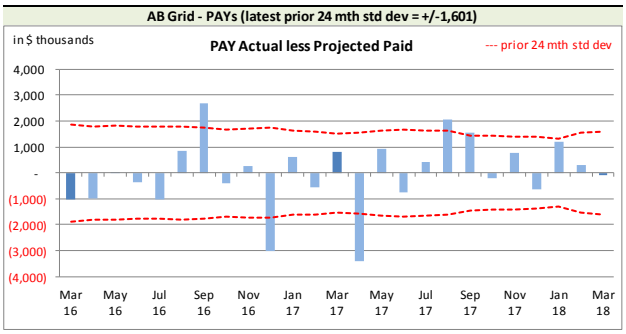
*Alberta Grid RSP Actual **Paid** activity by Calendar Month*

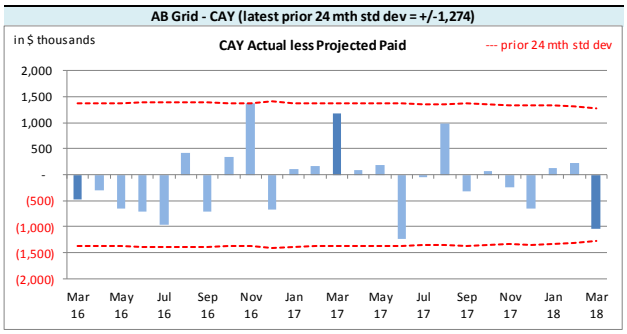




Paid activity variances from the previous month's projections are shown in the charts below, including the "prior 24-month standard deviation" levels to show how the variances from projection compare with historical standard deviations.

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





On Latest $ thousands		
Paid	PAYs	CAY
Mthly Avg Paid (prior 24 mths)	6,877	3,590
std dev	1,601	1,274
A-P <> std dev	5	-
% <> std dev	20.0%	0.0%
norm <> std dev	31.7%	31.7%

With respect to **paid** indemnity & allowed claims expense, the prior accident years' (PAYs) variances (left chart above) have fallen outside one standard deviation of the overall period 20% of the time, suggesting the projection process has performed better than simply projecting from the preceding 24-month average. No bias has been indicated at a 95% confidence level on a lagging 24-month basis.

The current accident year (CAY) **paid** variances (right chart above) have **not** fallen outside one standard deviation of the overall period, suggesting the projection process has performed better than simply projecting from the preceding 24-month average. No bias has been indicated at a 95% confidence level on a lagging 24-month basis.

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 beginning prior accident years' unpaid balance (case and IBNR) as **paid** activity "comes out of" the unpaid balance. Changes in the prior accident years' 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 current accident year becomes a prior accident year (occurs in January); and
- when a new valuation is implemented, where the valuation resulted in changes to the selection of prior accident years' ultimate (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 the March 2018 Operational Report and the

[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".

associated one-month projections from last month's Report.

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

Table 02

			actuarial present value adjustments					
	IBNR		Discount Amount		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	36,086	(1,151)	(5,132)	626	15,625	9	46,579	(516)
2016	24,772	4,173	(2,946)	(1)	7,844	494	29,670	4,666
2017	41,344	3,964	(4,292)	(47)	10,359	1,136	47,411	5,053
2018	11,496	3,793	(1,553)	(121)	3,550	342	13,493	4,014
TOTAL	113,698	10,779	(13,923)	457	37,378	1,981	137,153	13,217

The IBNR provision is $10.8 million higher than projected from last month, counterbalancing the recorded claims activity and adjusting for the earned premium variance impacts indicated in section 2.1, and due to the valuation implementation.

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 at the top of the next page summarizes the variances in the provisions for premium deficiency liability / (deferred policy acquisition cost asset) included in the March 2018 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 and due to valuation implementation.

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:	(7,321)	4,099	4,528	297	(2,793)	4,396
balance as % unearned premium:	(8.9%)	4.9%	5.5%	0.4%	(3.4%)	5.3%
actual unearned premium:	82,278					
less projected:	(509)					

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 at the top of the next page 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 92.7% rather than 90.7% (the valuation ultimate ratio for accident year 2018), 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.)

[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.

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	7,964	20.1%	928	2.3%	8,892	22.5%	10,199	27.6%
CAY	36,676	92.7%	1,997	5.1%	38,673	97.8%	14,676	4.8%
TOTAL	44,640	112.9%	2,925	7.4%	47,565	120.3%	24,876	32.4%

("% EP" based on 2018 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 and the valuation implementation.

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 and due to the valuation implementation.

5 Current Operational Report – Additional Exhibits

Section 6 provides exhibits pertaining to the actuarial provisions reflected in the current month's 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 1.75%

interest rate margin 25 basis pts

Amounts in $000s					
Accident Year	Actual Feb. 2018	Actual Mar. 2018	Projected Apr. 2018	Projected May. 2018	Projected Dec. 2018
2004	(72)	(72)	(72)	(72)	(72)
2005	37	25	24	22	19
2006	146	(162)	(153)	(146)	(102)
2007	(228)	99	97	91	71
2008	121	114	111	105	79
2009	1,206	273	263	249	178
2010	1,228	1,276	1,220	1,159	831
2011	2,235	1,660	1,591	1,512	1,088
2012	4,522	4,146	3,960	3,762	2,670
2013	8,038	6,705	6,394	6,075	4,293
2014	12,692	11,878	11,369	10,657	7,710
2015	18,524	20,637	19,740	18,730	14,834
2016	25,514	29,670	29,077	27,766	22,898
2017	43,385	47,411	46,815	45,411	38,322
2018	7,989	13,493	18,665	24,443	48,634
TOTAL	125,337	137,153	139,101	139,764	141,453
Change		11,816	1,948	663	

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 Feb. 2018	Actual Mar. 2018	Projected Apr. 2018	Projected May. 2018	Projected Dec. 2018
51.6%	2004	(80)	(80)	(80)	(80)	(80)
59.3%	2005	(55)	(45)	(43)	(41)	(29)
66.3%	2006	115	(170)	(161)	(153)	(107)
70.3%	2007	(342)	(44)	(42)	(40)	(28)
67.1%	2008	10	4	4	4	4
60.4%	2009	985	159	151	143	99
62.0%	2010	793	794	754	716	498
66.0%	2011	1,585	920	874	830	577
74.0%	2012	3,601	3,146	2,989	2,840	1,978
76.3%	2013	6,778	5,479	5,205	4,945	3,445
86.0%	2014	10,630	9,754	9,266	8,617	6,080
95.6%	2015	14,333	16,169	15,361	14,439	11,185
100.1%	2016	21,019	24,772	24,277	23,063	18,814
92.8%	2017	38,143	41,344	40,931	39,703	33,418
90.7%	2018	6,705	11,496	16,125	21,296	41,760
	TOTAL	104,220	113,698	115,611	116,282	117,614
	Change		9,478	1,913	671	

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 Feb. 2018	Actual Mar. 2018	Projected Apr. 2018	Projected May. 2018	Projected Dec. 2018
(1) unearned premium (UP)	83,050	82,278	85,071	87,768	90,872
FOR MEMBER SHARING					
(2) expected future costs ratio {% of (1)}	91.3%	96.6%	96.7%	96.8%	98.1%
(3) expected future costs {(1) x (2)}	75,790	79,485	82,258	84,957	89,154
(4) premium deficiency / (deferred policy acquisition cost)	(7,260)	(2,793)	(2,813)	(2,811)	(1,718)
Excluding Actuarial Present Value Adjustments					
(5) expected future costs ratio {% of (1)}	86.2%	91.1%	91.2%	91.3%	92.5%
(6) expected future costs {(1) x (5)}	71,548	74,957	77,572	80,117	84,075
(7) premium deficiency / (deferred policy acquisition cost)	(11,502)	(7,321)	(7,499)	(7,651)	(6,797)

EXHIBIT D

Projected Year-end Policy Liabilities

The table below presents the projected policy liabilities as at December 31, 2018, broken down by component.

Alberta Grid	Projected Balances as at Dec. 31, 2018 ($000s)									
ending 2018	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	-	(80)	(80)	-	-	8	-	8	8	(72)
2005	631	(29)	602	(13)	2	60	(1)	59	48	650
2006	182	(107)	75	(2)	-	7	-	7	5	80
2007	1,358	(28)	1,330	(35)	4	133	(3)	130	99	1,429
2008	1,050	4	1,054	(31)	4	105	(3)	102	75	1,129
2009	1,005	99	1,104	(32)	4	110	(3)	107	79	1,183
2010	4,259	498	4,757	(147)	19	476	(15)	461	333	5,090
2011	6,873	577	7,450	(246)	37	745	(25)	720	511	7,961
2012	7,775	1,978	9,753	(293)	39	975	(29)	946	692	10,445
2013	8,885	3,445	12,330	(395)	49	1,233	(39)	1,194	848	13,178
2014	18,845	6,080	24,925	(897)	125	2,492	(90)	2,402	1,630	26,555
2015	32,394	11,185	43,579	(1,830)	261	5,447	(229)	5,218	3,649	47,228
2016	33,449	18,814	52,263	(2,456)	314	6,533	(307)	6,226	4,084	56,347
2017	33,308	33,418	66,726	(3,470)	467	8,341	(434)	7,907	4,904	71,630
PAYs (sub-total):	150,014	75,854	225,868	(9,847)	1,325	26,665	(1,178)	25,487	16,965	242,833
CAY (2018)	61,033	41,760	102,793	(5,345)	720	12,130	(631)	11,499	6,874	109,667
claims liabilities:	211,047	117,614	328,661	(15,192)	2,045	38,795	(1,809)	36,986	23,839	352,500
	Unearned Premium	Premium Defiency / (DPAC)	Total Provision	discount	investment PfAD	nominal development PfAD	development PfAD discount	development PfAD	Total apvs	TOTAL*
premium liabilities:	90,872	(6,797)	84,075	(3,603)	503	8,546	(367)	8,179	5,079	89,154
										*Total may not be sum of parts, as apvs apply to future costs within UPR
policy liabilities:			**412,736**	**(18,795)**	**2,548**	**47,341**	**(2,176)**	**45,165**	**28,918**	**441,654**

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, 2018 from the valuation), followed by the selected discount rate and the associated margin for investment income.

Selected Claims Development MfADs (Dec. 31, 2017)

Accident Year	Third Party Liability	Accident Benefits	Other Coverages	Total
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%	9.8%	10.0%
2011	10.0%	10.0%	10.0%	10.0%
2012	10.0%	10.0%	9.8%	10.0%
2013	10.0%	10.0%	10.0%	10.0%
2014	10.0%	10.0%	10.0%	10.0%
2015	12.5%	10.0%	12.5%	12.5%
2016	12.5%	10.0%	12.1%	12.5%
2017	12.4%	10.0%	12.5%	12.5%
2018	12.1%	10.0%	6.7%	11.8%
prem liab	11.7%	10.0%	5.1%	10.2%

discount rate:	1.75%
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, 2018 from the latest valuation date (projections in exhibits A to D are also to Dec. 31, 2018, but are based on more up-to-date information). We have included the most recent valuation selection (1.75%), the prior valuation assumption (1.76%) and the prior fiscal year end valuation assumption (1.76%) 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, 2018 projected Unpaid							
AY	0.75%	1.25%	1.75%	2.25%	2.75%	3.25%	1.76%	1.76%
2004	-	-	-	-	-	-	-	-
2005	677	673	669	665	661	657	669	669
2006	456	453	449	446	443	439	449	449
2007	1,756	1,742	1,729	1,716	1,704	1,691	1,729	1,729
2008	850	843	836	829	822	816	836	836
2009	1,991	1,975	1,959	1,943	1,927	1,912	1,958	1,958
2010	4,797	4,754	4,712	4,670	4,629	4,589	4,711	4,711
2011	7,099	7,031	6,964	6,900	6,836	6,774	6,963	6,963
2012	10,449	10,358	10,270	10,183	10,098	10,015	10,268	10,268
2013	15,064	14,925	14,789	14,655	14,525	14,398	14,787	14,787
2014	28,037	27,744	27,457	27,176	26,901	26,632	27,452	27,452
2015	48,340	47,751	47,174	46,616	46,068	45,530	47,165	47,165
2016	59,039	58,234	57,446	56,679	55,933	55,203	57,435	57,435
2017	75,274	74,127	73,014	71,933	70,875	69,848	72,990	72,990
2018	121,697	119,838	118,037	116,291	114,587	112,935	117,998	117,998
Total	375,526	370,448	365,505	360,702	356,009	351,439	365,410	365,410
	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	0.75%	1.25%	1.75%	2.25%	2.75%	3.25%	1.76%	1.76%
Total	10,021	4,943	-	(4,803)	(9,496)	(14,066)	(95)	(95)
	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	0.75%	1.25%	1.75%	2.25%	2.75%	3.25%	1.76%	1.76%
2004	-	-	-	-	-	-	-	-
2005	1.2%	0.6%	-	(0.6%)	(1.2%)	(1.8%)	-	-
2006	1.6%	0.9%	-	(0.7%)	(1.3%)	(2.2%)	-	-
2007	1.6%	0.8%	-	(0.8%)	(1.4%)	(2.2%)	-	-
2008	1.7%	0.8%	-	(0.8%)	(1.7%)	(2.4%)	-	-
2009	1.6%	0.8%	-	(0.8%)	(1.6%)	(2.4%)	(0.1%)	(0.1%)
2010	1.8%	0.9%	-	(0.9%)	(1.8%)	(2.6%)	(0.0%)	(0.0%)
2011	1.9%	1.0%	-	(0.9%)	(1.8%)	(2.7%)	(0.0%)	(0.0%)
2012	1.7%	0.9%	-	(0.8%)	(1.7%)	(2.5%)	(0.0%)	(0.0%)
2013	1.9%	0.9%	-	(0.9%)	(1.8%)	(2.6%)	(0.0%)	(0.0%)
2014	2.1%	1.0%	-	(1.0%)	(2.0%)	(3.0%)	(0.0%)	(0.0%)
2015	2.5%	1.2%	-	(1.2%)	(2.3%)	(3.5%)	(0.0%)	(0.0%)
2016	2.8%	1.4%	-	(1.3%)	(2.6%)	(3.9%)	(0.0%)	(0.0%)
2017	3.1%	1.5%	-	(1.5%)	(2.9%)	(4.3%)	(0.0%)	(0.0%)
2018	3.1%	1.5%	-	(1.5%)	(2.9%)	(4.3%)	(0.0%)	(0.0%)
Total	2.7%	1.4%	-	(1.3%)	(2.6%)	(3.8%)	(0.0%)	(0.0%)
	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 - Discou :d

M/S 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	(72)	-	-	-	-	-	(72)
2005	37	(1)	6	(17)	(12)	(32.4%)	25
2006	146	(4)	18	(322)	(308)	(211.0%)	(162)
2007	(228)	6	(19)	340	327	(143.4%)	99
2008	121	(4)	(3)	-	(7)	(5.8%)	114
2009	1,206	(37)	(345)	(551)	(933)	(77.4%)	273
2010	1,228	(37)	38	47	48	3.9%	1,276
2011	2,235	(66)	(205)	(304)	(575)	(25.7%)	1,660
2012	4,522	(135)	(547)	306	(376)	(8.3%)	4,146
2013	8,038	(239)	75	(1,169)	(1,333)	(16.6%)	6,705
2014	12,692	(466)	(456)	108	(814)	(6.4%)	11,878
2015	18,524	(371)	(707)	3,191	2,113	11.4%	20,637
2016	25,514	(510)	660	4,006	4,156	16.3%	29,670
2017	43,385	(1,027)	(328)	5,381	4,026	9.3%	47,411
2018	7,989	1,490	1,869	2,145	5,504	68.9%	13,493
Grand Total	**125,337**	**(1,401)**	**56**	**13,161**	**11,816**	**9.4%**	**137,153**

EXHIBIT G

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

RSP	**Alberta Grid**
AccountCode Desc	**IBNR - Undisc nted**

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	(80)	-	-	-	-	-	(80)
2005	(55)	2	8	-	10	(18.2%)	(45)
2006	115	(3)	17	(299)	(285)	(247.8%)	(170)
2007	(342)	10	(21)	309	298	(87.1%)	(44)
2008	10	-	(6)	-	(6)	(60.0%)	4
2009	985	(30)	(277)	(519)	(826)	(83.9%)	159
2010	793	(24)	25	-	1	0.1%	794
2011	1,585	(48)	(217)	(400)	(665)	(42.0%)	920
2012	3,601	(108)	(530)	183	(455)	(12.6%)	3,146
2013	6,778	(203)	78	(1,174)	(1,299)	(19.2%)	5,479
2014	10,630	(425)	(451)	-	(876)	(8.2%)	9,754
2015	14,333	(287)	(665)	2,788	1,836	12.8%	16,169
2016	21,019	(420)	640	3,533	3,753	17.9%	24,772
2017	38,143	(763)	(393)	4,357	3,201	8.4%	41,344
2018	6,705	998	1,811	1,982	4,791	71.5%	11,496
Grand Total	**104,220**	**(1,301)**	**19**	**10,760**	**9,478**	**9.1%**	**113,698**