



ALBERTA GRID RISK SHARING POOL

MARCH 2017 OPERATIONAL REPORT

ACTUARIAL HIGHLIGHTS

Related Bulletin: [F17-027 Alberta RSPs March 2017 Operational Reports](#)

Related Quarterly Valuation Highlights:

[Actuarial Quarterly Valuation Highlights Risk Sharing Pools as at December 31, 2016](#)

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ACTUARIAL HIGHLIGHTS
RSP ALBERTA GRID
OPERATIONAL REPORT
MARCH 2017

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1 Summary

1.1 Valuation Schedule (Fiscal Year 2017)

The March 2017 Operational Report incorporates the results of an updated valuation (as at December 31, 2016) – 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 2017.

ALBERTA GRID RISK SHARING POOL FISCAL YEAR 2017 – SCHEDULE OF VALUATIONS			
Valuation Date	Discount Rate (per annum)	Operational Report	Description of Changes
Sep. 30, 2016 (completed)	0.54% mfad: 25 bp	Oct. 2016	updated valuation (roll forward): accident year 2016 loss ratio increased 2.0 points to 83.5%; discount rate decreased by 6 basis points; no change to selected margins for adverse deviations
Dec. 31, 2016 (completed)	1.06% mfad: 25 bp	Mar. 2017	updated valuation: accident year 2016 loss ratio increased 5.8 points to 89.3%; accident year 2017 loss ratio increased 6.3 points to 84.2%; discount rate increased by 52 basis points; no change to selected margins for adverse deviations
Mar. 31, 2017		May 2017	update valuation (roll forward):
Jun. 30, 2017		Aug. 2017	update valuation:
Sep. 30, 2017		Oct. 2017	update valuation (roll forward):

Under the proposed schedule for fiscal year 2017, the “off-half” valuation quarters ending March 31, 2017 and September 30, 2017 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, 2016 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 to be posted to the FA website at the same time as this report.

The valuation implementation impact is summarized in the tables at the top of the next page.

Summary of Impact (\$000s) of Implementing Result of Valuation as at December 31, 2016¹

AB Grid	unfav / (fav) for the month and ytd					
	IMPACT in \$000s from changes in:					
	ults & payout patterns			dsct rate	margins	
	Nominal	apv adj.	sub-tot	apv adj.	apv adj.	TOTAL
[1]	[2]	[3]	[4]	[5]	[6]	
PAYs	12,520	1,956	14,476	(4,153)	-	10,323
CAY	2,300	268	2,568	(428)	-	2,140
Prem Def	4,550	476	5,026	(926)	-	4,100
TOTAL	19,370	2,700	22,070	(5,507)	-	16,563

As indicated in the table above, the incorporation of the new valuation had an estimated **\$16.6 million unfavourable impact** on the month's net result from operations, adding an estimated 46.5 points (see table immediately below) to the **year-to-date Combined Operating Ratio** to end at **149.4%**.

Summary of Impact (% YTD EP) of Implementing Result of Valuation as at December 31, 2016

AB Grid	ytd EP	35,609 (actual)				
	IMPACT unfav / (fav) as % ytd EP from changes in:					
	ults & payout patterns			dsct rate	margins	
	Nominal	apv adj.	sub-tot	apv adj.	apv adj.	TOTAL
[1]	[2]	[3]	[4]	[5]	[6]	
PAYs	35.2%	5.5%	40.7%	(11.7%)	-	29.0%
CAY	6.5%	0.8%	7.2%	(1.2%)	-	6.0%
Prem Def	12.8%	1.3%	14.1%	(2.6%)	-	11.5%
TOTAL	54.4%	7.6%	62.0%	(15.5%)	-	46.5%

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 \$19.4 million overall. This reflects the impact attributable to the change in the selected ultimate loss ratio (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 a \$12.5 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 (within third party liability) recorded activity (we are not seeing paid activity AvsP variances in the quarterly valuation, suggesting recorded activity AvsP variances may be related to case reserve strengthening, as we are seeing it across accident years). It is interesting to note that we are not seeing this “phenomena”

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.

occurring in the Alberta non-Grid RSP. The unfavourable impact is 4.7% of the prior accident years' nominal unpaid balance of \$264.1 million determined at the end of last month (February 2017).

The current accident year and premium deficiency impacts are a result of changes in the selected loss ratios for accident years **2017** (up 6.3 points from 77.9% to **84.2%**) and **2018** (up 7.1 points from 79.0% to **86.1%**).

The impacts related to actuarial present value adjustments (“APVs”) are split into the impact prior to any change in the selected discount rate and margin changes (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 margins (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 margins for adverse deviations or “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 2016. Column [4] accounts for the change in the **discount rate** selected (increased 52 basis points to **1.06%**), indicating a favourable impact of \$5.5 million. The impact *related only to claims liabilities* (i.e. PAYs plus CAY) was \$4.6 million at March 2017 (projected \$4.9 million impact at December 31, 2017) – this compares to the \$4.6 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 outlined in section 1.4. For this valuation, no specific adjustments have been made.

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

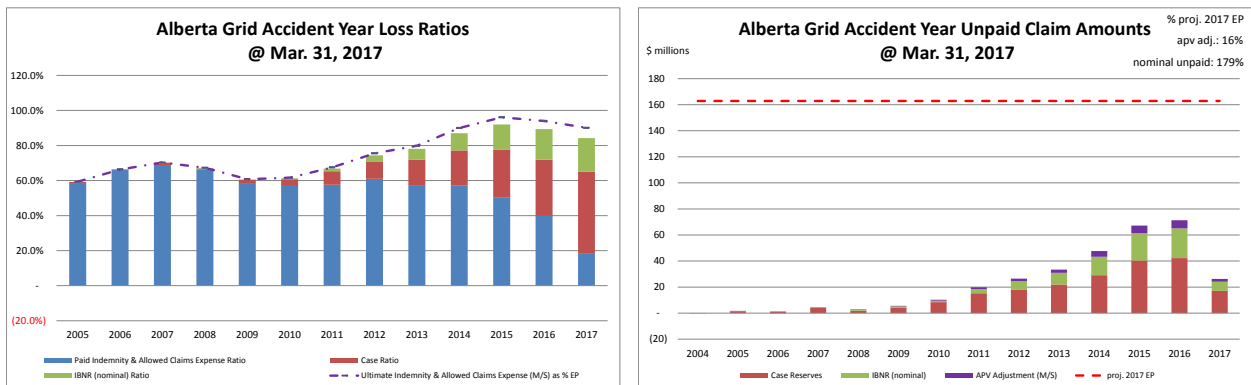
Consideration and assessment of potential impacts of legal decisions and changes in legislation /

regulation constitutes a regular part of the valuation process. Descriptions of some of the more recent changes are provided below (there have been no changes in these descriptions since last month’s Highlights, other than updating that the most recent valuation is December 31, 2016).

Alberta Bill 39 (Enhancing Consumer Protection in Auto Insurance Act) was introduced into the Legislature by the Minister of Finance on November 6, 2013, and received Royal Assent on December 11, 2013. Bill 39 includes various amendments and provisions such as allowing for both mandatory and optional auto insurance premiums to be regulated by the independent Automobile Insurance Rate Board (AIRB), the introduction of an Insurer file and approve system for premium adjustments instead of an annual industry-wide rate adjustment, improved access to health care after a collision and strengthened Insurance Company solvency requirements. No specific adjustments have been made to the most recent valuation (December 31, 2016) assumptions based on Bill 39.

1.5 Current Provision Summary

The charts immediately below 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 2017 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 (\$26.5 million – see table at top of next page) represents 16% of the earned premium projected for the full year 2017 (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.

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.

claim liabilities (\$000s)	amt	%
case	205,877	64.7%
ibnr	86,021	27.0%
M/S apv adjust.	26,463	8.3%
M/S total	318,361	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 35% of the IBNR balance relates to accident years 2016 and 2017 (see Exhibit B). Approximately 77% of the M/S total claim

liabilities are related to accident years 2013-2017 inclusive (i.e. the most recent 5 accident years).

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

premium liabilities (\$000s)			policy liabilities (\$000s)		
	amt	%		amt	%
unearned prem	71,728	109.8%	claim	291,898	76.1%
prem def/(dpac)	(11,050)	(16.9%)	premium	60,678	15.8%
M/S apv adjust.	4,674	7.2%	M/S apv adjust.	31,137	8.1%
M/S total	65,352	100.0%	M/S total	383,713	100.0%

2 Activity During the Month of March 2017

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 Report⁴.

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

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	(0)	(0)	3,341	(1,175)	(3,487)	(433)	(147)	(1,609)
2015	(2)	(2)	985	(783)	76	542	1,061	(241)
2016	(215)	(215)	4,313	2,763	(3,388)	(3,144)	925	(381)
2017	12,472	(121)	3,999	1,168	5,685	1,779	9,684	2,947
TOTAL	12,254	(339)	12,637	1,973	(1,115)	(1,258)	11,523	715

(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". 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

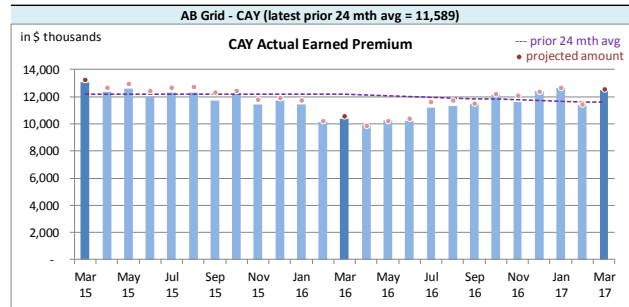
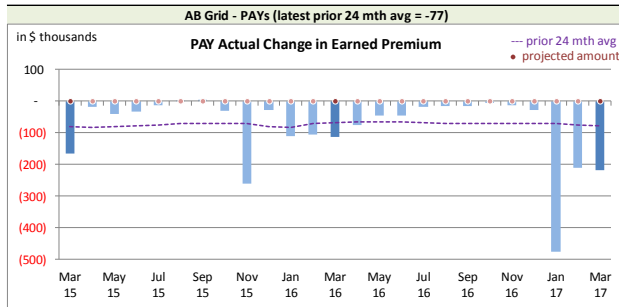
The charts at the top of the next page show actual **earned premium**⁵ activity in each of the most recent 25 calendar months, along with a "prior 24-month average" to show how each month's actual

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

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.

compares with the average amount of the preceding 24 calendar months.

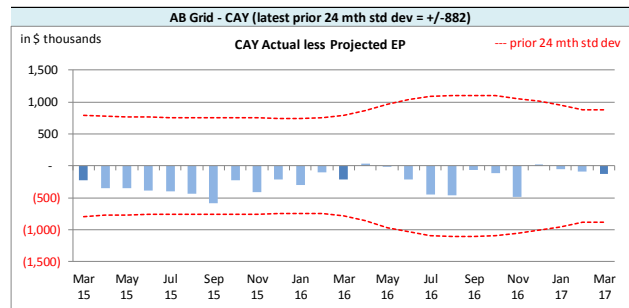
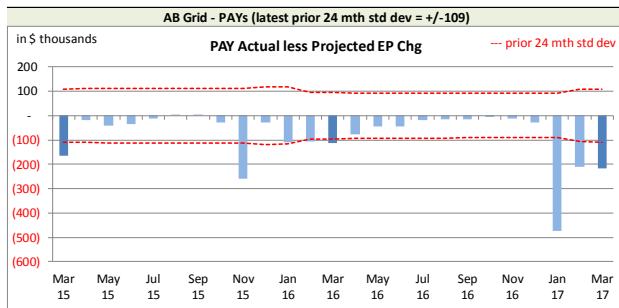
Alberta Grid RSP Actual Earned Premium by Calendar Month



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.

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



On Latest \$ thousands			
Earned Premium	PAYS	CAY	
Mthly Avg EP Chg (prior 24 mths)	(77)	11,589	
std dev	109	882	
A-P <> std dev	7	-	
% <> std dev	28.0%	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' bias⁶, with actuals generally lower than projected. However, the magnitude is not high relative to

monthly premium, and the variances are within the prior 24-month standard deviation more often than indicated by a normal distribution (see table above). In addition to the prior accident years' bias, the CAY has also shown bias, with actuals being generally lower than projected. Starting with the August 2016 projections, we have modified our projections processes in an attempt to account

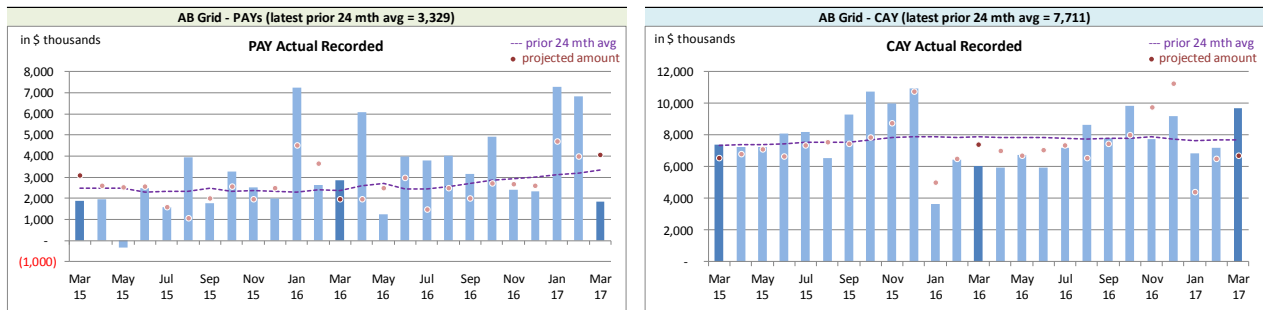
⁶The prior accident years (PAYS) variances will show bias as the projection upload forces all earned premium projections to be attributed to the current accident year.

for CAY bias. 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

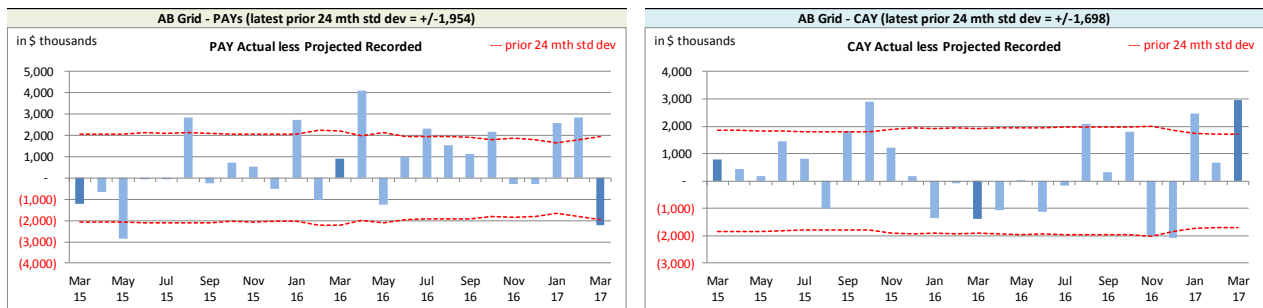
Actual **recorded** activity (**paid** and case reserve changes) over the last 25-month period are shown in the charts immediately below, including the “prior 24-month average” level.

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.

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



On Latest \$ thousands			
	Recorded	PAYs	CAY
Mthly Avg Recorded (prior 24 mths)	3,329	7,711	
std dev	1,954	1,698	
A-P <> std dev	9	7	
% <> std dev	36.0%	28.0%	
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 above) over the last 25 months have fallen outside of one standard deviation of the actual **recorded** amounts, suggesting the projection process is performing worse than simply

projecting from the prior 24-month average. There may be evidence of bias in the projections as 12 of the last 18 months have had actuals higher than projections. A similar pattern is not evident in the **paid** activity where actuals have generally been lower than projections over the same 18 month period, suggesting there may be changes in case reserve activity. We have not noticed the same potential “case reserve” effect for the Alberta non-Grid RSP (there, both **recorded** and **paid** activity appear to be moving in tandem). This has also been noted by the valuation team and investigation continues.

The PAYs’ **recorded** variance for the current month was outside the one standard deviation band.

Notwithstanding the prior discussion on possible changes to case reserve activity, the activity was reviewed and confirmed, with the variance attributed to process variance.

The current accident year (CAY) **recorded** variances (right chart in the middle of the previous page) seemed to be indicating bias in 2015 (where actuals tended to be higher than projections). However, adjustments to the projection process have addressed this issue. Additionally, at 28%, the number of variances falling outside of one standard deviation of actual activity over the period is slightly lower than indicated by the normal distribution, suggesting the projection process is somewhat better than simply projecting from the 24 month average.

The CAY **recorded** variance for the current month was outside the one standard deviation band. Notwithstanding the prior discussion on possible changes to case reserve activity, the activity was reviewed and confirmed, with the variance attributed to process variance.

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 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 Mar) provides the average of the three monthly ratios (i.e. Jan, Feb, and Mar) for that row's calendar year.

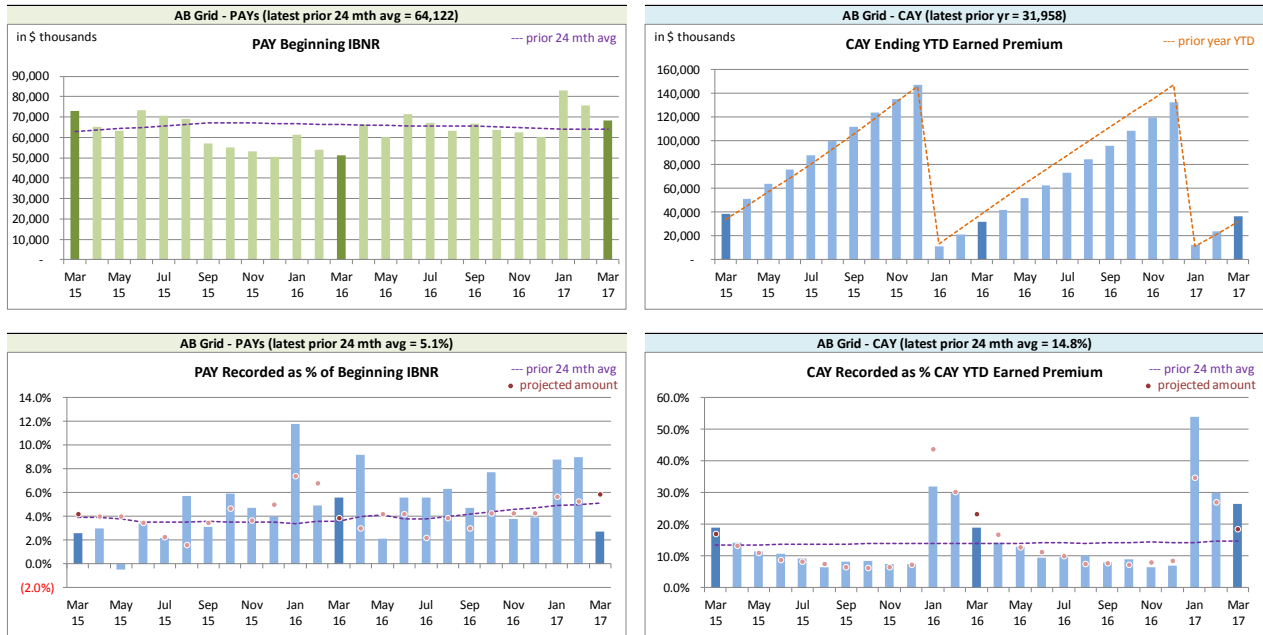
CAY avg of mthly ratios for yr					CAY avg of mthly ratios for yr				
as at	Rec'd	yr-on-yr chg	Paid	yr-on-yr chg	as at	Rec'd	yr-on-yr chg	Paid	yr-on-yr chg
Dec 2009	11.5%		4.4%		Mar 2009	25.7%		5.5%	
Dec 2010	10.9%	(0.6%)	4.5%	0.1%	Mar 2010	22.4%	(3.3%)	6.1%	0.6%
Dec 2011	12.8%	1.9%	4.8%	0.3%	Mar 2011	29.8%	7.4%	6.1%	0.0%
Dec 2012	12.4%	(0.4%)	4.7%	(0.1%)	Mar 2012	24.9%	(4.9%)	5.9%	(0.2%)
Dec 2013	12.6%	0.2%	4.8%	0.1%	Mar 2013	26.8%	1.9%	5.6%	(0.3%)
Dec 2014	13.8%	1.2%	5.3%	0.5%	Mar 2014	27.2%	0.4%	6.4%	0.8%
Dec 2015	14.4%	0.6%	5.5%	0.2%	Mar 2015	29.8%	2.6%	6.9%	0.5%
Dec 2016	14.0%	(0.4%)	5.4%	(0.1%)	Mar 2016	27.0%	(2.8%)	7.0%	0.1%
					Mar 2017	36.9%	9.9%	8.0%	1.0%

Both **recorded** and **paid** ratios for Dec. 2016 relative to Dec. 2009 have increased at an annual rate of almost 3% over and above any premium rate level increases. At this point, we are only monitoring, but the valuation team has been advised and are taking this information into consideration. Further, while the average of the 12 monthly ratios at December for 2016 was down from 2015, they were still the second highest ratios overall, and, three months into 2017, the 3-month average ratios for calendar year 2017 are at the highest levels in the Mar. table for both **recorded** and **paid**.

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 influence⁷ 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:

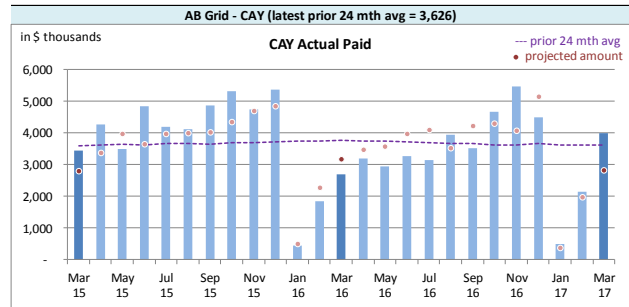
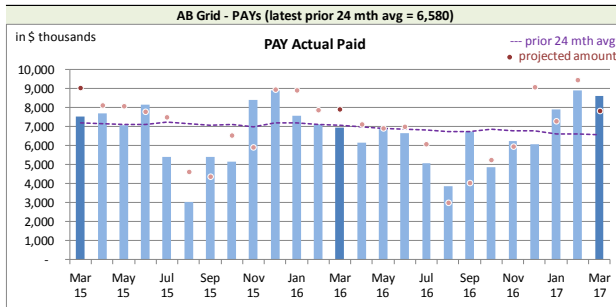
- to offset actual **recorded** activity (through loss ratio matching);
- the annual switchover as a current accident year becomes a prior accident year (occurs in January); and
- when a new valuation is implemented, where the valuation resulted in changes to the selection of prior accident years’ ultimate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

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.

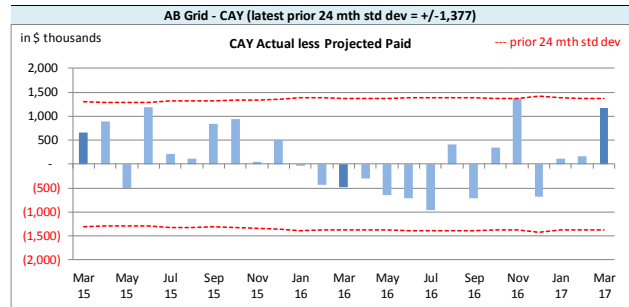
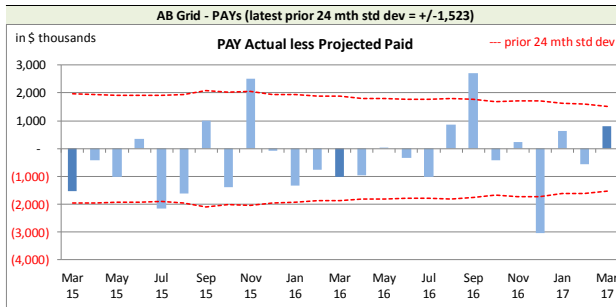
⁷Our recorded activity projections for the prior accident years are based on selected ratios of recorded activity to beginning unpaid balances, whereas the current accident year projections are based on selected ratios of year-to-date IBNR to year-to-date selected ultimate (i.e. selected LR x earned 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*



The charts immediately below show the actual less projected **paid** variances for the last 25 calendar months, along with bands for the “prior 24-month standard deviations” 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)		6,580	3,626
std dev		1,523	1,377
A-P <> std dev		4	-
% <> std dev		16.0%	0.0%
norm <> std dev		31.7%	31.7%

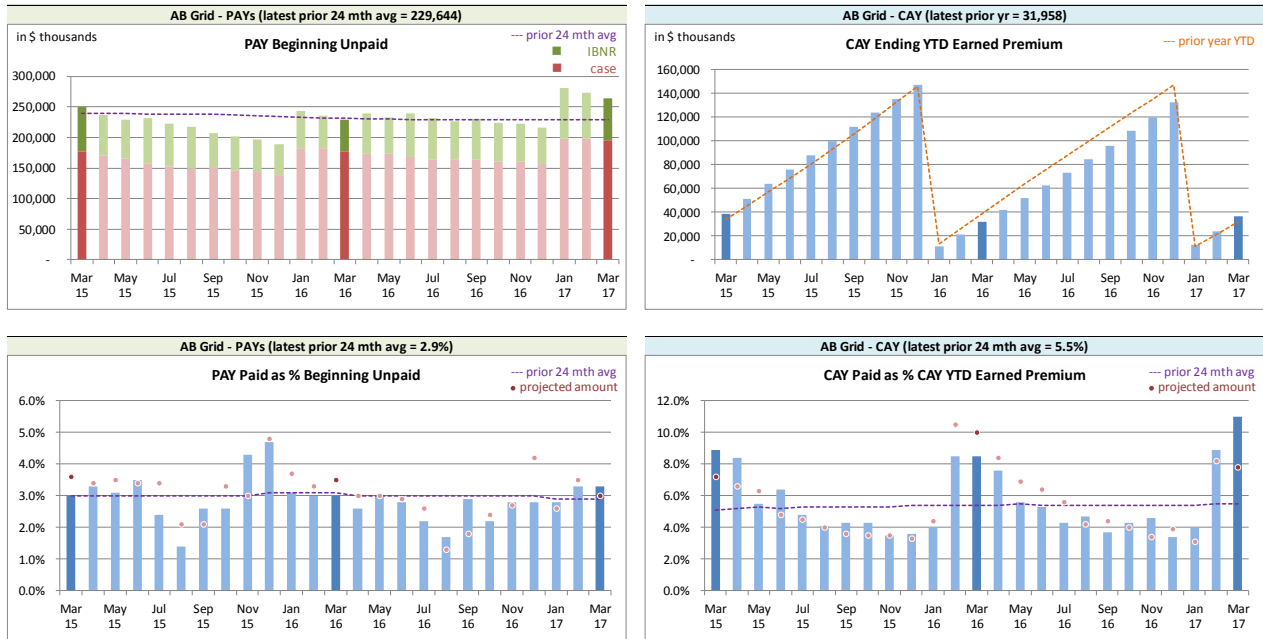
With respect to **paid** indemnity & allowed claims expense, the prior accident years’ (PAYs) variances (left chart above) have fallen outside one standard deviation of the overall period 16% of the time, a lower percent than suggested by a normal distribution, indicating the projection process may be better than simply projecting

from the preceding 24-month average. However, there appears to be evidence of bias (actuals tend to be lower than projected) – as discussed with respect to **recorded** activity potentially showing bias the other way (i.e. with actuals tending to be higher than projected), this bias divergence may suggest a change in case reserve activity relative to historical norms. We have taken measures to try and eliminate the bias and for now they seem to be successful. We will continue to monitor.

The current accident year (CAY) **paid** variances (right chart above) indicated bias through 2015 (where actuals tend to be higher than our projections), but efforts to address this may have generated bias the other way. The CAY **paid** variances have **not** fallen outside one standard deviation of the overall period, suggesting the projection process is better than simply projecting from the preceding 24-month average.

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 influence⁸ 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 IBNR⁹, 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 2017 Operational Report and the associated one-month projections from last month’s Report.

⁸Our 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.

⁹For ease of discussion, “IBNR” is used in place of “provisions for incurred but not recorded (IBNR) and development”.

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

Accident Year	IBNR		actuarial present value adjustments				IBNR + actuarial present value adjustments	
	Actual	Actual less Projected	Discount Amount		Provisions for Adverse Deviations		Actual	Actual less Projected
			Actual	Actual less Projected	Actual	Actual less Projected		
Prior	35,265	3,124	(3,482)	(1,681)	15,670	108	47,453	1,551
2015	20,918	3,614	(1,901)	(987)	7,855	425	26,872	3,052
2016	22,846	7,830	(2,215)	(1,127)	8,386	956	29,017	7,659
2017	6,992	(741)	(771)	(379)	2,921	85	9,142	(1,035)
TOTAL	86,021	13,827	(8,369)	(4,174)	34,832	1,574	112,484	11,227

The IBNR provision is \$13.8 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 below summarizes the variances in the provisions for deferred policy acquisition cost asset included in the March 2017 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 the valuation implementation.

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

	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:	(11,050)	4,789	4,674	(525)	(6,376)	4,264
balance as % unearned premium:	(15.4%)	6.4%	6.5%	(0.7%)	(8.9%)	5.7%
actual unearned premium:	71,728					
less projected:	(1,082)					

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 loss¹⁰ 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 expenses¹¹, 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 86.3% rather than 84.2% (the valuation ultimate ratio for accident year 2017), 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	11,766	33.0%	(4,790)	(13.5%)	6,976	19.6%	9,217	29.2%
CAY	30,742	86.3%	2,150	6.0%	32,892	92.4%	12,461	4.9%
TOTAL	42,508	119.4%	(2,640)	(7.4%)	39,868	112.0%	21,678	34.1%

(“% EP” based on 2017 calendar year-to-date earned premium; ratios may not total due to rounding)

The prior accident years (PAYs) changes from last month are due to the release of the actuarial present value adjustments with claims payments and due to the valuation implementation. The loss ratio change year-to-date 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 due to 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.

¹⁰“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).

¹¹Allowed 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.

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 Feb. 2017	Actual Mar. 2017	Projected Apr. 2017	Projected May. 2017	Projected Dec. 2017
	2004	(72)	(72)	(72)	(72)	(72)
	2005	(246)	212	205	200	163
	2006	7	(207)	(201)	(200)	(166)
	2007	(92)	504	488	477	388
	2008	1,177	1,131	1,097	1,081	890
	2009	1,571	1,234	1,197	1,178	965
	2010	2,821	1,837	1,782	1,750	1,430
	2011	3,508	4,514	4,379	4,314	3,534
discount rate	2012	9,438	8,365	8,114	8,015	6,593
1.06%	2013	11,374	11,390	10,870	10,737	8,855
	2014	18,331	18,545	17,728	17,465	14,440
interest rate margin	2015	25,322	26,872	25,573	25,102	20,371
25 basis pts	2016	22,825	29,017	27,461	26,638	19,885
	2017	6,365	9,142	13,179	17,446	42,342
	TOTAL	102,329	112,484	111,800	114,131	119,618
	Change		10,155	(684)	2,331	

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. 2017	Actual Mar. 2017	Projected Apr. 2017	Projected May. 2017	Projected Dec. 2017
	51.6%	2004	(80)	(80)	(80)	(80)	(80)
	59.2%	2005	(423)	72	70	69	57
	66.3%	2006	(82)	(284)	(275)	(272)	(225)
	70.2%	2007	(444)	151	146	145	119
	67.2%	2008	915	903	876	867	715
	60.6%	2009	1,048	812	788	780	644
	61.3%	2010	1,870	1,096	1,063	1,052	867
	66.8%	2011	1,824	3,090	2,997	2,967	2,446
	74.4%	2012	7,094	6,435	6,242	6,180	5,096
	78.1%	2013	8,591	8,930	8,483	8,398	6,926
	87.0%	2014	13,290	14,140	13,433	13,299	10,968
	92.0%	2015	18,606	20,918	19,768	19,471	15,407
	89.3%	2016	16,322	22,846	21,475	20,831	14,923
	84.2%	2017	4,660	6,992	10,442	14,016	34,469
		TOTAL	73,191	86,021	85,428	87,723	92,332
		Change		12,830	(593)	2,295	

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

EXHIBIT C

Premium Liabilities

TABLE EXHIBIT C

	Amounts in \$000s				
	Actual Feb. 2017	Actual Mar. 2017	Projected Apr. 2017	Projected May. 2017	Projected Dec. 2017
Premium Liabilities					
(1) unearned premium (UP)	73,341	71,728	73,387	77,320	85,291
FOR MEMBER SHARING					
(2) expected future costs ratio {% of (1)}	85.3%	91.1%	91.2%	91.4%	93.0%
(3) expected future costs {(1) x (2)}	62,595	65,352	66,937	70,636	79,349
(4) premium deficiency / (deferred policy acquisition cost)	(10,746)	(6,376)	(6,450)	(6,684)	(5,942)
Excluding Actuarial Present Value Adjustments					
(5) expected future costs ratio {% of (1)}	78.2%	84.6%	84.7%	84.8%	86.4%
(6) expected future costs {(1) x (5)}	57,360	60,678	62,152	65,584	73,673
(7) premium deficiency / (deferred policy acquisition cost)	(15,981)	(11,050)	(11,235)	(11,736)	(11,618)

EXHIBIT D

Projected Year-end Policy Liabilities

The table below presents the projected policy liabilities as at December 31, 2017, broken down by component.

Alberta Grid ending 2017		Projected Balances as at Dec. 31, 2017 (\$000s)							
		nominal values			actuarial present value adjustments (apvs)				TOTAL
Acc Yr	Case	IBNR	Total Unpaid	discount	investment PfAD	development PfAD	Total apvs		
2004	-	(80)	(80)	-	-	8	8	(72)	
2005	1,188	57	1,245	(21)	5	122	106	1,351	
2006	917	(225)	692	(12)	3	68	59	751	
2007	3,022	119	3,141	(53)	13	309	269	3,410	
2008	1,402	715	2,117	(44)	11	208	175	2,292	
2009	3,327	644	3,971	(87)	20	388	321	4,292	
2010	6,420	867	7,287	(197)	51	709	563	7,850	
2011	11,620	2,446	14,066	(366)	84	1,370	1,088	15,154	
2012	13,953	5,096	19,049	(457)	95	1,859	1,497	20,546	
2013	17,310	6,926	24,236	(582)	145	2,366	1,929	26,165	
2014	23,150	10,968	34,118	(887)	205	4,154	3,472	37,590	
2015	35,695	15,407	51,102	(1,584)	358	6,190	4,964	56,066	
2016	37,442	14,923	52,365	(1,780)	419	6,323	4,962	57,327	
PAYs (sub-total):	155,446	57,863	213,309	(6,070)	1,409	24,074	19,413	232,722	
CAY (2017)	53,772	34,469	88,241	(2,824)	618	10,079	7,873	96,114	
claims liabilities:	209,218	92,332	301,550	(8,894)	2,027	34,153	27,286	328,836	
	Unearned Premium	Premium Deficiency / (DPAC)	Total Provision	discount	investment PfAD	development PfAD	Total apvs	TOTAL*	
premium liabilities:	85,291	(11,618)	73,673	(1,982)	441	7,217	5,676	79,349	
*Total may not be sum of parts, as apvs apply to future costs within UPR									
policy liabilities:			375,223	(10,876)	2,468	41,370	32,962	408,185	

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, 2017 from the valuation), followed by the selected discount rate and the associated margin for investment income.

Accident Year	Selected Claims Development MfADs (Dec. 31, 2016)			Total
	Third Party Liability	Accident Benefits	Other Coverages	
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%	9.6%	10.0%
2011	10.0%	10.0%	9.9%	10.0%
2012	10.0%	10.0%	9.6%	10.0%
2013	10.0%	10.0%	10.0%	10.0%
2014	12.5%	10.0%	12.5%	12.5%
2015	12.5%	10.0%	12.5%	12.5%
2016	12.4%	10.0%	12.5%	12.5%
2017	12.1%	10.0%	7.4%	11.8%
prem liab	11.8%	10.0%	5.1%	10.1%

discount rate:	1.06%
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, 2017 from the latest valuation date (projections in exhibits A to D are also to Dec. 31, 2017, but are based on more up-to-date information). We have included both the current valuation selection (1.06%), the prior valuation assumption (0.54%) and the prior fiscal year end valuation assumption (0.54%) 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, 2017 projected Unpaid								
AY	0.56%	1.06%	1.56%	2.06%	2.56%	3.06%	0.54%	0.54%
2004	-	-	-	-	-	-	-	-
2005	1,615	1,603	1,590	1,578	1,565	1,553	1,616	1,616
2006	631	626	620	615	610	606	631	631
2007	3,028	3,003	2,979	2,955	2,931	2,908	3,029	3,029
2008	2,172	2,150	2,128	2,107	2,087	2,067	2,173	2,173
2009	5,200	5,145	5,091	5,038	4,986	4,935	5,202	5,202
2010	7,224	7,132	7,043	6,957	6,871	6,789	7,227	7,227
2011	13,165	13,001	12,841	12,686	12,534	12,388	13,171	13,171
2012	19,029	18,809	18,596	18,388	18,183	17,987	19,038	19,038
2013	25,815	25,521	25,236	24,961	24,688	24,428	25,828	25,828
2014	40,583	40,074	39,579	39,098	38,628	38,174	40,601	40,601
2016	59,042	58,090	57,173	56,285	55,418	54,582	59,083	59,083
2017	102,728	101,144	99,612	98,140	96,693	95,313	102,786	102,786
Total	336,905	332,140	327,537	323,080	318,708	314,518	337,088	337,088
	curr - 50 bp	curr val assumption	curr + 50bp	curr + 100bp	curr + 150bp	curr + 200bp	prior val assumption	prior fyr end assumption

Dollar Impact Relative to Valuation Assumption								
AY	0.56%	1.06%	1.56%	2.06%	2.56%	3.06%	0.54%	0.54%
Total	4,765	-	(4,603)	(9,060)	(13,432)	(17,622)	4,948	4,948
	curr - 50 bp	curr val assumption	curr + 50bp	curr + 100bp	curr + 150bp	curr + 200bp	prior val assumption	prior fyr end assumption

Percentage Impact Relative to Valuation Assumption								
AY	0.56%	1.06%	1.56%	2.06%	2.56%	3.06%	0.54%	0.54%
2004	-	-	-	-	-	-	-	-
2005	0.7%	-	(0.8%)	(1.6%)	(2.4%)	(3.1%)	0.8%	0.8%
2006	0.8%	-	(1.0%)	(1.8%)	(2.6%)	(3.2%)	0.8%	0.8%
2007	0.8%	-	(0.8%)	(1.6%)	(2.4%)	(3.2%)	0.9%	0.9%
2008	1.0%	-	(1.0%)	(2.0%)	(2.9%)	(3.9%)	1.1%	1.1%
2009	1.1%	-	(1.0%)	(2.1%)	(3.1%)	(4.1%)	1.1%	1.1%
2010	1.3%	-	(1.2%)	(2.5%)	(3.7%)	(4.8%)	1.3%	1.3%
2011	1.3%	-	(1.2%)	(2.4%)	(3.6%)	(4.7%)	1.3%	1.3%
2012	1.2%	-	(1.1%)	(2.2%)	(3.3%)	(4.4%)	1.2%	1.2%
2013	1.2%	-	(1.1%)	(2.2%)	(3.3%)	(4.3%)	1.2%	1.2%
2014	1.3%	-	(1.2%)	(2.4%)	(3.6%)	(4.7%)	1.3%	1.3%
2016	1.6%	-	(1.6%)	(3.1%)	(4.6%)	(6.0%)	1.7%	1.7%
2017	1.6%	-	(1.5%)	(3.0%)	(4.4%)	(5.8%)	1.6%	1.6%
Total	1.4%	-	(1.4%)	(2.7%)	(4.0%)	(5.3%)	1.5%	1.5%
	curr - 50 bp	curr val assumption	curr + 50bp	curr + 100bp	curr + 150bp	curr + 200bp	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 - Discour**

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	(72)	-	-	-	-	-	(72)
2005	(246)	3	183	272	458	(186.2%)	212
2006	7	(1)	(204)	(9)	(214)	(3,057.1%)	(207)
2007	(92)	(3)	(40)	639	596	(647.8%)	504
2008	1,177	(25)	12	(33)	(46)	(3.9%)	1,131
2009	1,571	(37)	46	(346)	(337)	(21.5%)	1,234
2010	2,821	(66)	(62)	(856)	(984)	(34.9%)	1,837
2011	3,508	(87)	1,137	(44)	1,006	28.7%	4,514
2012	9,438	(212)	61	(922)	(1,073)	(11.4%)	8,365
2013	11,374	(513)	(380)	909	16	0.1%	11,390
2014	18,331	(974)	965	223	214	1.2%	18,545
2015	25,322	(1,502)	329	2,723	1,550	6.1%	26,872
2016	22,825	(1,467)	(108)	7,767	6,192	27.1%	29,017
2017	6,365	3,812	(3,175)	2,140	2,777	43.6%	9,142
Grand Total	102,329	(1,072)	(1,236)	12,463	10,155	9.9%	112,484

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 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	(80)	-	-	-	-	-	(80)
2005	(423)	8	218	269	495	(117.0%)	72
2006	(82)	2	(204)	-	(202)	246.3%	(284)
2007	(444)	9	(30)	616	595	(134.0%)	151
2008	915	(18)	6	-	(12)	(1.3%)	903
2009	1,048	(21)	44	(259)	(236)	(22.5%)	812
2010	1,870	(37)	(80)	(657)	(774)	(41.4%)	1,096
2011	1,824	(36)	1,102	200	1,266	69.4%	3,090
2012	7,094	(142)	33	(550)	(659)	(9.3%)	6,435
2013	8,591	(430)	(406)	1,175	339	3.9%	8,930
2014	13,290	(797)	923	724	850	6.4%	14,140
2015	18,606	(1,302)	240	3,374	2,312	12.4%	20,918
2016	16,322	(1,306)	202	7,628	6,524	40.0%	22,846
2017	4,660	3,073	(3,041)	2,300	2,332	50.0%	6,992
Grand Total	73,191	(997)	(993)	14,820	12,830	17.5%	86,021