



ALBERTA GRID RISK SHARING POOL

AUGUST 2016 OPERATIONAL REPORT

ACTUARIAL HIGHLIGHTS

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[Actuarial Quarterly Valuation Highlights Risk Sharing Pools as at June 30, 2016](#)

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ACTUARIAL HIGHLIGHTS
RSP ALBERTA GRID
OPERATIONAL REPORT
AUGUST 2016

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1 Summary

1.1 Valuation Schedule (Fiscal Year 2016)

The August 2016 Operational Report incorporates the results of an updated valuation (as at June 30, 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 2016.

ALBERTA GRID RISK SHARING POOL FISCAL YEAR 2016 – SCHEDULE OF VALUATIONS			
Valuation Date	Discount Rate (per annum)	Operational Report	Description of Changes
Sep. 30, 2015 (completed)	0.75% mfad: 25 bp	Oct. 2015	updated valuation (roll forward): accident year 2015 loss ratio increased 2.1 points to 75.7%; discount rate decreased by 18 basis points; no change to selected margins for adverse deviations
Dec. 31, 2015 (completed)	0.70% mfad: 25 bp	Mar. 2016	updated valuation: accident year 2015 loss ratio increased 8.3 points to 84.0%; accident year 2016 loss ratio increased 2.5 points to 73.7%; discount rate decreased by 5 basis points; no change to selected margins for adverse deviations
Mar. 31, 2016 (completed)	0.65% mfad: 25 bp	May 2016	updated valuation (roll forward): accident year 2016 loss ratio increased 4.9 points to 78.6%; discount rate decreased by 5 basis points; no change to selected margins for adverse deviations
Jun. 30, 2016 (completed)	0.60% mfad: 25 bp	Aug. 2016	updated valuation: accident year 2016 loss ratio increased 2.9 points to 81.5%; discount rate decreased by 5 basis points; selected claims development margins for adverse deviations were updated
Sep. 30, 2016		Oct. 2016	update valuation (roll forward):

Under the proposed schedule for fiscal year 2016, the “off-half” valuation quarters ending March 31, 2016 and September 30, 2016 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 June 30, 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 immediately below.

Summary of Impact (\$000s) of Implementing Result of Valuation as at June 30, 2016¹

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	7,268	903	8,171	370	(820)	7,721
CAY	2,459	254	2,713	58	-	2,771
Prem Def	2,215	253	2,468	128	-	2,596
TOTAL	11,942	1,410	13,352	556	(820)	13,088

As indicated in the table above, the incorporation of the new valuation had an estimated **\$13.1 million unfavourable impact** on the month’s net result from operations, adding an estimated 15.5 points (see table immediately below) to the **year-to-date Combined Operating Ratio** to end at **173.9%**.

Summary of Impact (% YTD EP) of Implementing Result of Valuation as at June 30, 2016

AB Grid	ytd EP 84,269 (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	8.6%	1.1%	9.7%	0.4%	(1.0%)	9.2%
CAY	2.9%	0.3%	3.2%	0.1%	-	3.3%
Prem Def	2.6%	0.3%	2.9%	0.2%	-	3.1%
TOTAL	14.2%	1.7%	15.8%	0.7%	(1.0%)	15.5%

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 \$11.9 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 \$7.3 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 the third party liability (bodily injury)

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.

government line 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” occurring in the Alberta non-Grid RSP. The unfavourable impact is 3.2% of the prior accident years’ nominal unpaid balance of \$227.2 million determined at the end of last month (July 2016).

The current accident year and premium deficiency impacts are a result of changes in the selected loss ratios for accident years **2016** (up 2.9 points from 78.6% to **81.5%**) and **2017** (up 2.5 points from 78.6% to **81.1%**).

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 \$1.4 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 June 2016. Column [4] accounts for the change in the **discount rate** selected (decreased 5 basis points to **0.60%**), indicating an unfavourable impact of \$0.6 million. The impact *related only to claims liabilities* (i.e. PAYs plus CAY) was \$0.4 million at August 2016 (projected \$0.4 million impact at December 31, 2016) – this compares to the \$0.3 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**. However, selected **claims development MfADs were updated** for some accident years and coverages, resulting in an estimated **overall favourable impact of \$0.8 million**.

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.

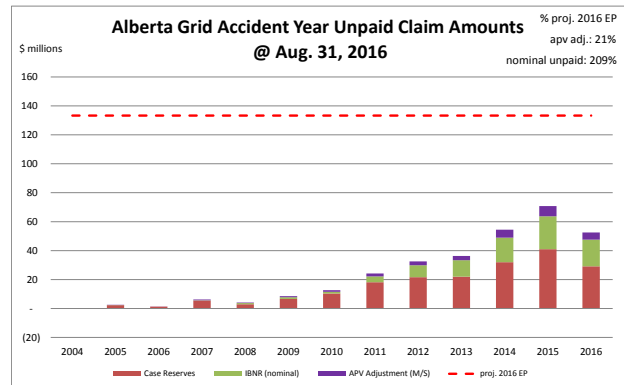
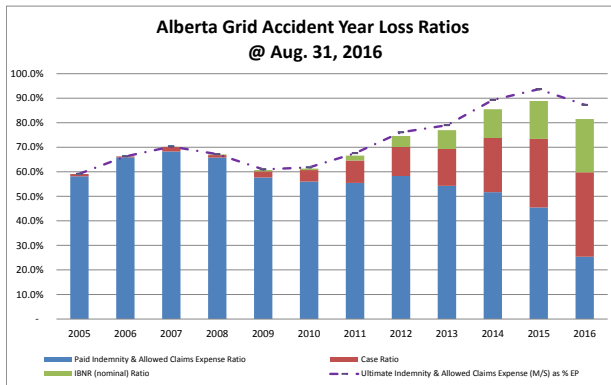
1.4 Consideration of Recent Legal Decisions and Changes in Legislation / Regulation

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.

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 current valuation 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 2016 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 (\$28.2 million – see table at the top of the next page) represents 21% of the earned premium projected for the full year 2016 (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	193,034	63.0%
ibnr	85,106	27.8%
M/S apv adjust.	28,174	9.2%
M/S total	306,314	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 48% of the IBNR balance relates to accident years 2015 and 2016 (see Exhibit B). Approximately 81% of the M/S

total claim liabilities are related to accident years 2012-2016 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)

	amt	%
unearned prem	74,921	112.4%
prem def/(dpac)	(13,831)	(20.8%)
M/S apv adjust.	5,561	8.3%
M/S total	66,651	100.0%

policy liabilities (\$000s)

	amt	%
claim	278,140	74.6%
premium	61,090	16.4%
M/S apv adjust.	33,735	9.0%
M/S total	372,965	100.0%

2 Activity During the Month of August 2016

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	1	1	1,993	97	358	1,474	2,351	1,571
2014	(4)	(4)	695	223	(132)	(263)	563	(40)
2015	(11)	(11)	1,170	536	(59)	(546)	1,110	(11)
2016	11,304	(459)	3,942	411	4,721	1,691	8,663	2,101
TOTAL	11,290	(474)	7,800	1,266	4,889	2,356	12,688	3,622

(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

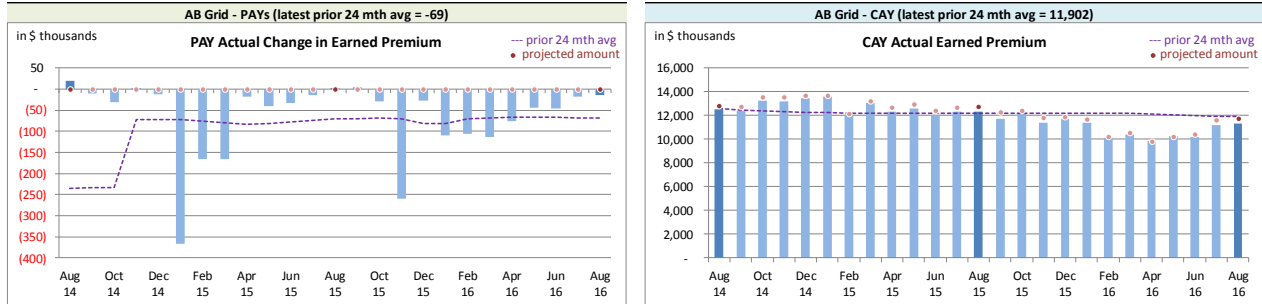
The charts at the top of the next page show actual **earned premium**⁵ activity in each of the most

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.

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.

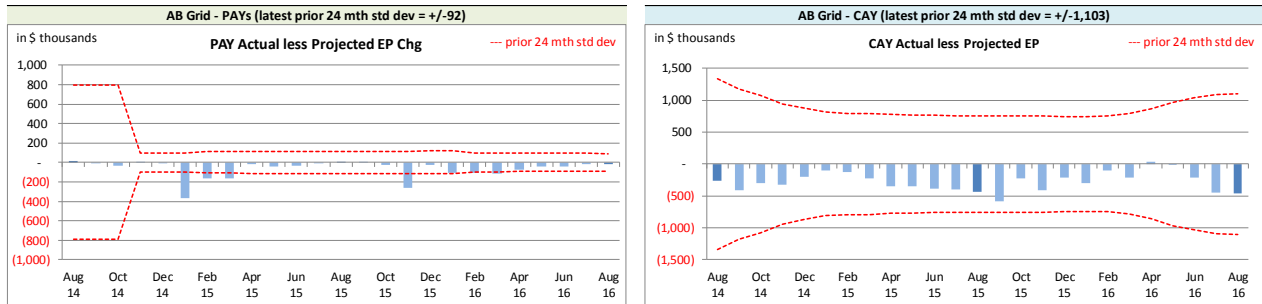
Alberta Grid RSP Actual Earned Premium by Calendar Month



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.

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)	(69)	11,902	
std dev	92	1,103	
A-P <> std dev	6	-	
% <> std dev	24.0%	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 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). We are in the process of modifying our projections processes in an attempt to account for bias in the current process. Over time, we may consider other projection

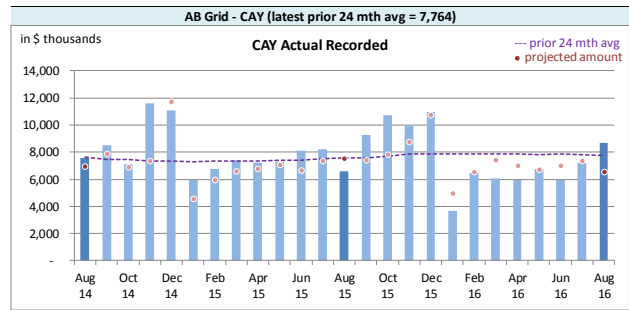
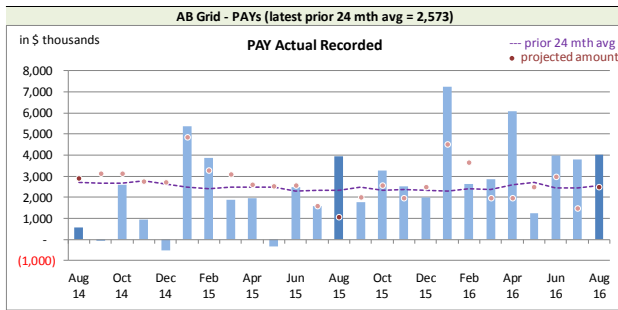
⁶The prior accident years (PAYS) variances will show bias as the projection upload forces all earned premium projections to be attributed to the current accident year.

approaches to narrow monthly variance levels further, but it is not currently deemed a priority.

2.1.b AvsP: Recorded Indemnity & Allowed Claims Expense

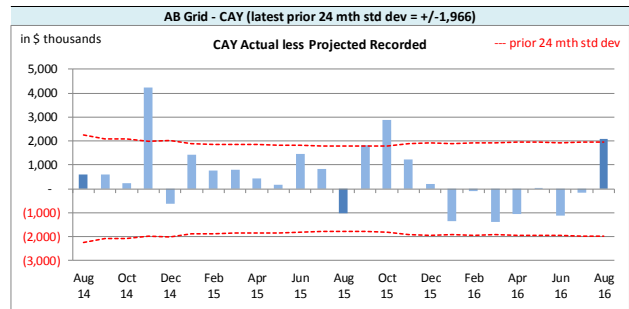
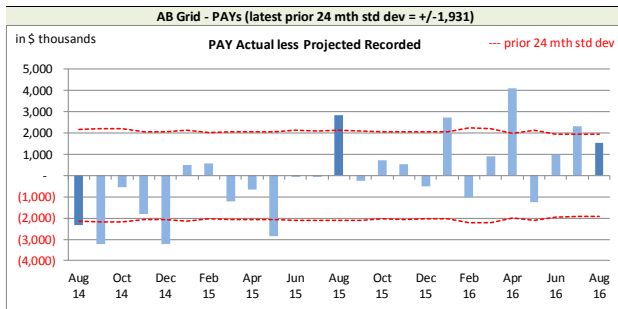
Actual **recorded** activity (**paid** and case reserve changes) over the last 25-month period are shown in the charts immediately below, including the “prior 24-month average” level.

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)	2,573	7,764	
std dev	1,931	1,966	
A-P <> std dev	8	4	
% <> std dev	32.0%	16.0%	
norm <> std dev	31.7%	31.7%	

With respect to **recorded** indemnity & allowed claims expense activity, 32% 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 no better than simply

projecting from the prior 24-month average. There was evidence of bias during the latter half of 2014 and first half of 2015, although the larger variances tend to correspond to months with unusually low levels of recorded activity (this is also evident in the **recorded** to beginning IBNR ratios shown in the middle of the next page). For example, from August 2014 to December 2014 there were 4 months with PAYs recorded amounts of \$1 million or less, whereas the 20-month period following only saw 1 such month (these correspond to months where the **recorded** to beginning IBNR ratio is less than 2%). A similar pattern is not evident in **paid** activity, 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.

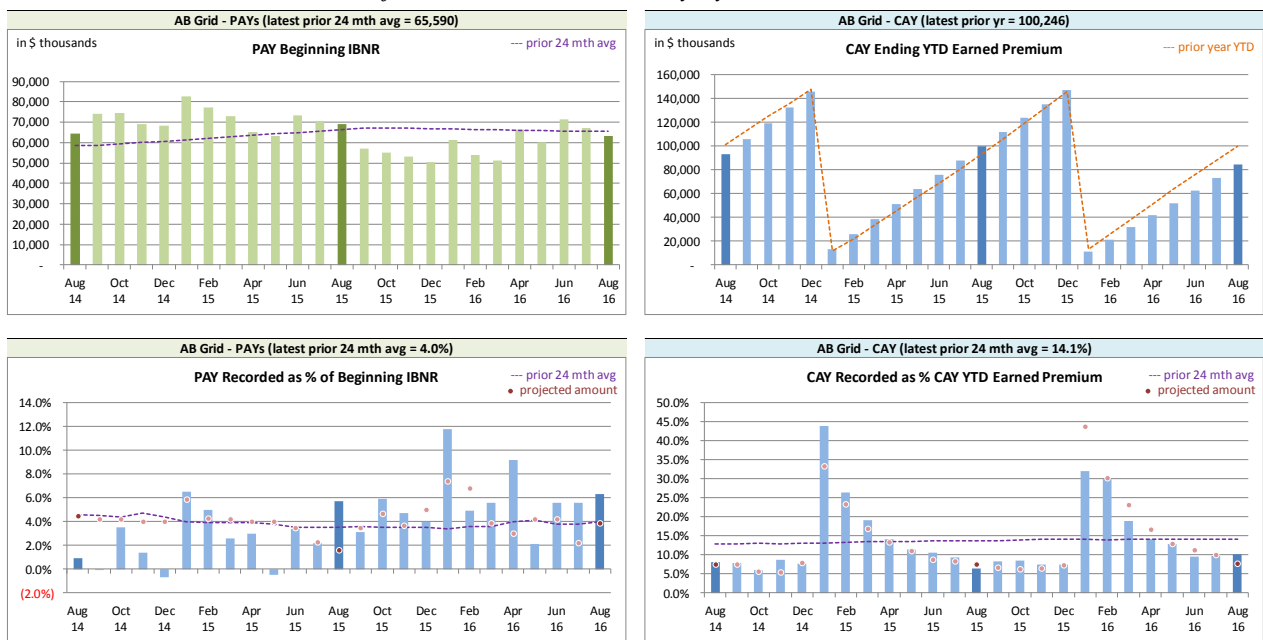
The current accident year (CAY) **recorded** variances (right chart at bottom of previous page) may be indicating bias (where actuals have tended to be higher than projections), although adjustments to the projection process may be addressing this. At 16%, the number of variances falling outside of one standard deviation of actual activity over the period is lower than indicated by the normal distribution, suggesting the projection process is better than simply projecting from the 24 month average.

The CAY **recorded** variance for the current month was outside the one standard deviation band. The activity was reviewed and confirmed, with the variance attributed to process variance.

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 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);

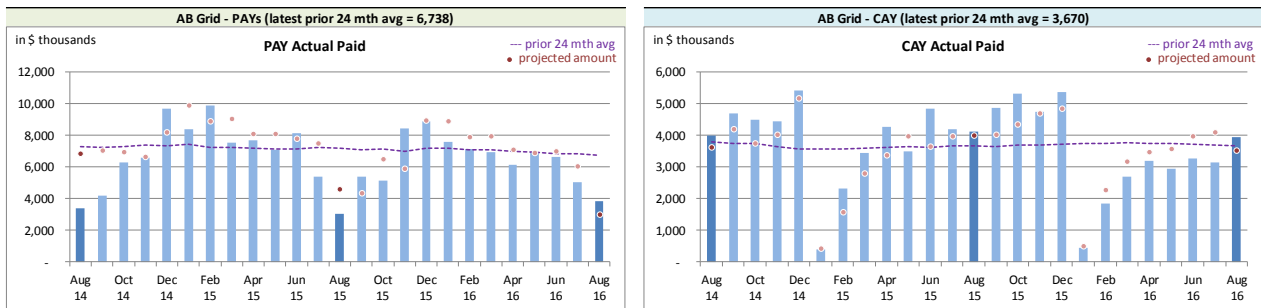
⁷Our recorded activity projections for the prior accident years are based on selected ratios of recorded activity to beginning unpaid balances, whereas the current accident year projections are based on selected ratios of year-to-date IBNR to year-to-date selected ultimate (i.e. selected LR x earned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

- 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

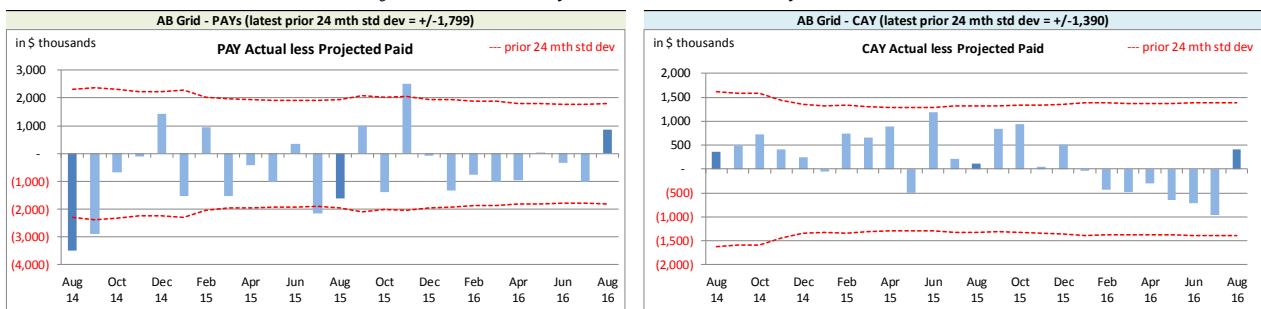
The charts immediately below show actual **paid** activity in each of the most recent 25 calendar months, along with a “prior 24-month average” to show how each month’s actual compares with the average amount of the preceding 24 calendar months.

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



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)	6,738	3,670
std dev	1,799	1,390
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

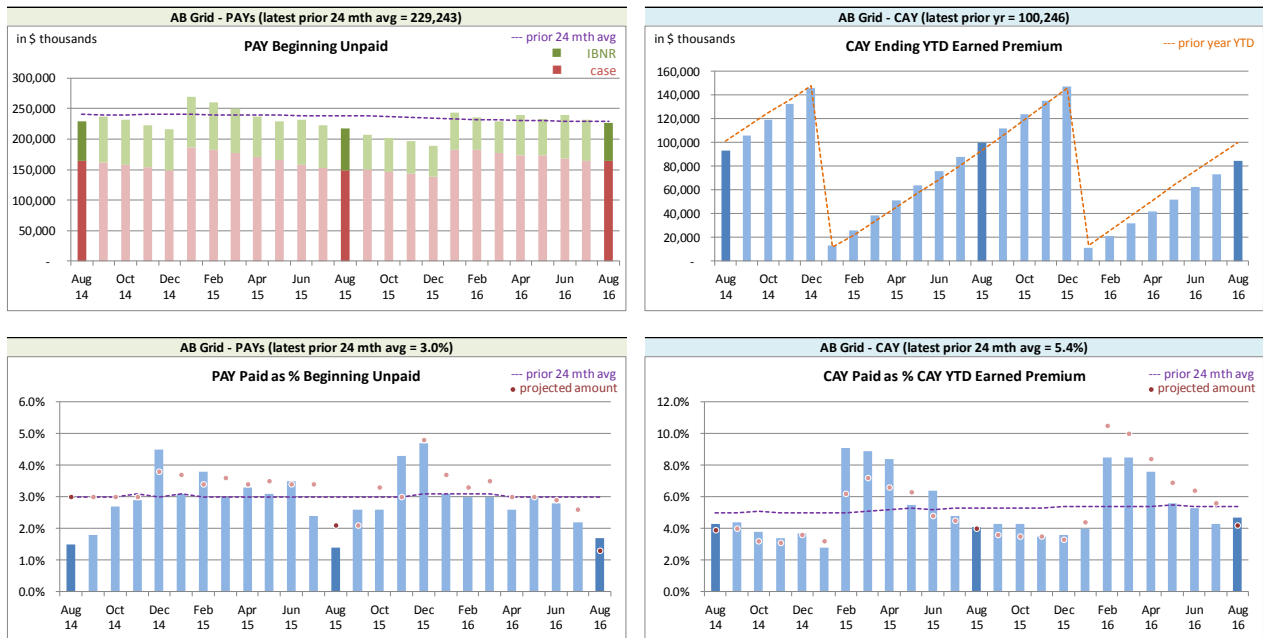
from the preceding 24-month average. However, there appears to be evidence of bias (actuals tend to be lower than projected) – as discussed with respect to **recorded** activity potentially showing bias

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 will continue to monitor.

The current accident year (CAY) **paid** variances (right chart at bottom of previous page) 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, at least initially. 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. However, the CAY paid to ytd earned premium ratios as projected have been high in retrospect during 2016 and we are looking into this further.

We have included, for reference, additional charts immediately below 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

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.

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 immediately below summarizes variances in provisions included in the August 2016 Operational Report and the associated one-month projections from last month’s Report.

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

Table 02

Accident Year	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	26,954	1,768	(1,718)	107	12,383	(386)	37,619	1,489
2014	16,956	2,496	(881)	7	6,403	391	22,478	2,894
2015	22,771	1,469	(1,274)	45	8,317	192	29,814	1,706
2016	18,425	(3)	(857)	61	5,801	170	23,369	228
TOTAL	85,106	5,730	(4,730)	220	32,904	367	113,280	6,317

The IBNR provision is \$5.7 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 deferred policy acquisition cost asset included in the August 2016 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.

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: 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:	(13,831)	2,599	5,561	258	(8,270)	2,857
balance as % unearned premium:	(18.5%)	2.9%	7.4%	0.6%	(11.0%)	3.5%
actual unearned premium:	74,921					
less projected:	(1,796)					

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 82.0% rather than 81.5% (the valuation ultimate ratio for accident year 2016), 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	37,114	44.0%	(40)	-	37,074	44.0%	7,313	3.2%
CAY	69,108	82.0%	4,944	5.9%	74,052	87.9%	12,162	3.1%
TOTAL	106,222	126.0%	4,904	5.8%	111,126	131.9%	19,475	6.3%

(“% EP” based on 2016 calendar year-to-date earned premium; ratios may not total due to rounding)

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.

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, 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

		Amounts in \$000s				
IBNR + M/S actuarial present value adjustments	Accident Year	Actual Jul. 2016	Actual Aug. 2016	Projected Sep. 2016	Projected Oct. 2016	Projected Dec. 2016
	2004	(72)	(72)	(70)	(68)	(65)
	2005	(48)	247	242	235	221
	2006	3	59	59	57	53
	2007	428	711	696	674	634
	2008	1,002	1,183	1,151	1,116	1,050
	2009	2,655	1,961	1,909	1,853	1,743
	2010	2,893	2,244	2,187	2,121	1,978
discount rate	2011	6,285	6,071	5,907	5,731	5,355
0.60%	2012	9,684	10,874	10,576	10,258	9,601
	2013	14,255	14,341	13,940	13,565	12,764
interest rate margin	2014	20,239	22,478	21,970	21,228	20,024
25 basis pts	2015	29,299	29,814	28,910	27,892	26,105
	2016	19,870	23,369	25,813	28,715	39,440
	TOTAL	106,493	113,280	113,290	113,377	118,903
	Change		6,787	10	87	

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 Jul. 2016	Actual Aug. 2016	Projected Sep. 2016	Projected Oct. 2016	Projected Dec. 2016
	51.6%	2004	(80)	(80)	(78)	(76)	(72)
	59.1%	2005	(242)	27	26	25	23
	66.3%	2006	(125)	(55)	(53)	(51)	(48)
	70.1%	2007	(93)	181	176	171	161
	67.1%	2008	660	835	810	786	739
	60.7%	2009	1,952	1,252	1,214	1,178	1,109
	61.3%	2010	1,877	1,206	1,170	1,135	1,068
	66.6%	2011	4,334	4,059	3,937	3,819	3,593
	74.6%	2012	7,124	8,169	7,924	7,686	7,231
	77.0%	2013	10,559	11,360	11,019	10,688	10,056
	85.5%	2014	15,063	16,956	16,532	15,871	14,933
	88.9%	2015	22,423	22,771	21,974	21,095	19,643
	81.5%	2016	15,744	18,425	20,333	22,616	32,185
		TOTAL	79,196	85,106	84,984	84,943	90,621
		Change		5,910	(122)	(41)	

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

EXHIBIT C

Premium Liabilities

TABLE EXHIBIT C

	Amounts in \$000s				
	Actual Jul. 2016	Actual Aug. 2016	Projected Sep. 2016	Projected Oct. 2016	Projected Dec. 2016
Premium Liabilities					
(1) unearned premium (UP)	71,632	74,921	79,295	82,554	84,145
FOR MEMBER SHARING					
(2) expected future costs ratio {% of (1)}	85.6%	89.0%	88.9%	88.8%	88.7%
(3) expected future costs {(1) x (2)}	61,293	66,651	70,489	73,331	74,615
(4) premium deficiency / (deferred policy acquisition cost)	(10,339)	(8,270)	(8,806)	(9,223)	(9,530)
Excluding Actuarial Present Value Adjustments					
(5) expected future costs ratio {% of (1)}	78.6%	81.5%	81.5%	81.4%	81.3%
(6) expected future costs {(1) x (5)}	56,337	61,090	64,605	67,210	68,387
(7) premium deficiency / (deferred policy acquisition cost)	(15,295)	(13,831)	(14,690)	(15,344)	(15,758)

EXHIBIT D

Projected Year-end Policy Liabilities

The table below presents the projected policy liabilities as at December 31, 2016, broken down by component.

Alberta Grid ending 2016		Projected Balances as at Dec. 31, 2016 (\$000s)							
		nominal values			actuarial present value adjustments (apvs)				TOTAL
Acc Yr	Case	IBNR	Total Unpaid	discount	investment PfAD	development PfAD	Total apvs		
2004	-	(72)	(72)	-	-	7	7	(65)	
2005	2,100	23	2,123	(23)	11	210	198	2,321	
2006	1,140	(48)	1,092	(11)	4	108	101	1,193	
2007	4,937	161	5,098	(56)	25	504	473	5,571	
2008	2,652	739	3,391	(44)	20	335	311	3,702	
2009	5,892	1,109	7,001	(98)	42	690	634	7,635	
2010	9,087	1,068	10,155	(152)	61	1,001	910	11,065	
2011	15,873	3,593	19,466	(292)	136	1,918	1,762	21,228	
2012	18,929	7,231	26,160	(366)	157	2,579	2,370	28,530	
2013	20,225	10,056	30,281	(484)	212	2,980	2,708	32,989	
2014	30,230	14,933	45,163	(813)	361	5,543	5,091	50,254	
2015	38,832	19,643	58,475	(1,169)	468	7,163	6,462	64,937	
PAYs (sub-total):	149,897	58,436	208,333	(3,508)	1,497	23,038	21,027	229,360	
CAY (2016)	37,640	32,185	69,825	(1,257)	489	8,023	7,255	77,080	
claims liabilities:	187,537	90,621	278,158	(4,765)	1,986	31,061	28,282	306,440	
	Unearned Premium	Premium Deficiency / (DPAC)	Total Provision	discount	investment PfAD	development PfAD	Total apvs	TOTAL*	
premium liabilities:	84,145	(15,758)	68,387	(1,090)	477	6,841	6,228	74,615	
*Total may not be sum of parts, as apvs apply to future costs within UPR									
policy liabilities:			346,545	(5,855)	2,463	37,902	34,510	381,055	

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, 2016 from the valuation), followed by the selected discount rate and the associated margin for investment income.

Selected Claims Development MfADs (Jun. 30, 2016)				
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%	9.7%	10.0%
2009	10.0%	10.0%	5.1%	10.0%
2010	10.0%	10.0%	9.2%	10.0%
2011	10.0%	10.0%	9.9%	10.0%
2012	10.0%	10.0%	10.0%	10.0%
2013	10.0%	10.0%	10.0%	10.0%
2014	12.5%	10.0%	12.5%	12.5%
2015	12.4%	10.0%	12.5%	12.5%
2016	12.0%	10.0%	6.7%	11.7%
2017	12.5%	10.0%	12.5%	12.5%
prem liab	11.8%	10.0%	5.1%	10.2%

discount rate: 0.60%
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, 2016 from the latest valuation date (projections in exhibits A to D are to Dec. 31, 2016 and based on more up-to-date information). We have included both the current valuation selection (0.60%), the prior valuation assumption (0.65%) and the prior fiscal year end valuation assumption (0.75%) 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, 2016 projected Unpaid								
AY	0.10%	0.60%	1.10%	1.60%	2.10%	2.60%	0.65%	0.75%
2004	-	-	-	-	-	-	-	-
2005	1,979	1,967	1,949	1,932	1,916	1,899	1,965	1,961
2006	1,281	1,273	1,262	1,252	1,242	1,232	1,272	1,270
2007	5,257	5,223	5,176	5,131	5,087	5,043	5,218	5,209
2008	3,760	3,730	3,691	3,653	3,615	3,578	3,726	3,718
2009	7,922	7,856	7,766	7,678	7,593	7,510	7,846	7,828
2010	11,557	11,450	11,304	11,163	11,026	10,892	11,434	11,406
2011	20,336	20,155	19,914	19,679	19,451	19,228	20,130	20,082
2012	28,315	28,067	27,732	27,408	27,094	26,786	28,030	27,964
2013	33,793	33,471	33,041	32,623	32,217	31,820	33,427	33,341
2014	50,828	50,273	49,532	48,813	48,116	47,439	50,197	50,047
2015	66,475	65,668	64,594	63,560	62,559	61,588	65,560	65,338
2016	77,170	76,309	75,151	74,039	72,963	71,922	76,183	75,950
Total	308,673	305,442	301,112	296,931	292,879	288,937	304,988	304,114
	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	0.10%	0.60%	1.10%	1.60%	2.10%	2.60%	0.65%	0.75%
Total	3,231	-	(4,330)	(8,511)	(12,563)	(16,505)	(454)	(1,328)
	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	0.10%	0.60%	1.10%	1.60%	2.10%	2.60%	0.65%	0.75%
2004	-	-	-	-	-	-	-	-
2005	0.6%	-	(0.9%)	(1.8%)	(2.6%)	(3.5%)	(0.1%)	(0.3%)
2006	0.6%	-	(0.9%)	(1.6%)	(2.4%)	(3.2%)	(0.1%)	(0.2%)
2007	0.7%	-	(0.9%)	(1.8%)	(2.6%)	(3.4%)	(0.1%)	(0.3%)
2008	0.8%	-	(1.0%)	(2.1%)	(3.1%)	(4.1%)	(0.1%)	(0.3%)
2009	0.8%	-	(1.1%)	(2.3%)	(3.3%)	(4.4%)	(0.1%)	(0.4%)
2010	0.9%	-	(1.3%)	(2.5%)	(3.7%)	(4.9%)	(0.1%)	(0.4%)
2011	0.9%	-	(1.2%)	(2.4%)	(3.5%)	(4.6%)	(0.1%)	(0.4%)
2012	0.9%	-	(1.2%)	(2.3%)	(3.5%)	(4.6%)	(0.1%)	(0.4%)
2013	1.0%	-	(1.3%)	(2.5%)	(3.7%)	(4.9%)	(0.1%)	(0.4%)
2014	1.1%	-	(1.5%)	(2.9%)	(4.3%)	(5.6%)	(0.2%)	(0.4%)
2015	1.2%	-	(1.6%)	(3.2%)	(4.7%)	(6.2%)	(0.2%)	(0.5%)
2016	1.1%	-	(1.5%)	(3.0%)	(4.4%)	(5.7%)	(0.2%)	(0.5%)
Total	1.1%	-	(1.4%)	(2.8%)	(4.1%)	(5.4%)	(0.1%)	(0.4%)
	curr - 50 bp	curr val assumption	curr + 50bp	curr + 100bp	curr + 150bp	curr + 200bp	prior val assumption	prior fyr end assumption

EXHIBIT G

Page 1 of 2

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)	2	(2)	-	-	-	(72)
2005	(48)	3	(2)	294	295	(614.6%)	247
2006	3	1	54	1	56	1,866.7%	59
2007	428	(7)	(53)	343	283	66.1%	711
2008	1,002	(27)	(111)	319	181	18.1%	1,183
2009	2,655	(76)	(626)	8	(694)	(26.1%)	1,961
2010	2,893	(76)	(824)	251	(649)	(22.4%)	2,244
2011	6,285	(169)	81	(126)	(214)	(3.4%)	6,071
2012	9,684	(253)	(19)	1,462	1,190	12.3%	10,874
2013	14,255	(353)	(85)	524	86	0.6%	14,341
2014	20,239	(655)	11	2,883	2,239	11.1%	22,478
2015	29,299	(1,191)	(56)	1,762	515	1.8%	29,814
2016	19,870	3,271	(2,543)	2,771	3,499	17.6%	23,369
Grand Total	106,493	470	(4,175)	10,492	6,787	6.4%	113,280

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)	2	(2)	-	-	-	(80)
2005	(242)	7	(6)	268	269	(111.2%)	27
2006	(125)	4	66	-	70	(56.0%)	(55)
2007	(93)	3	(37)	308	274	(294.6%)	181
2008	660	(20)	(93)	288	175	26.5%	835
2009	1,952	(59)	(641)	-	(700)	(35.9%)	1,252
2010	1,877	(56)	(834)	219	(671)	(35.7%)	1,206
2011	4,334	(130)	55	(200)	(275)	(6.3%)	4,059
2012	7,124	(214)	(24)	1,283	1,045	14.7%	8,169
2013	10,559	(317)	(56)	1,174	801	7.6%	11,360
2014	15,063	(603)	36	2,460	1,893	12.6%	16,956
2015	22,423	(1,121)	1	1,468	348	1.6%	22,771
2016	15,744	2,684	(2,462)	2,459	2,681	17.0%	18,425
Grand Total	79,196	180	(3,997)	9,727	5,910	7.5%	85,106