



ALBERTA GRID RISK SHARING POOL

MAY 2016 OPERATIONAL REPORT

ACTUARIAL HIGHLIGHTS

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

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ACTUARIAL HIGHLIGHTS
RSP ALBERTA GRID
OPERATIONAL REPORT
MAY 2016

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1 Summary

1.1 Valuation Schedule (Fiscal Year 2016)

The May 2016 Operational Report incorporates the results of an updated valuation (as at March 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 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		Aug. 2016	update valuation:
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 March 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 March 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	12,293	1,230	13,523	394	-	13,917
CAY	2,552	255	2,807	62	-	2,869
Prem Def	2,948	293	3,241	53	-	3,294
TOTAL	17,793	1,778	19,571	509	-	20,080

As indicated in the table above, the incorporation of the new valuation had an estimated **\$20.1 million unfavourable impact** on the month's net result from operations, adding an estimated 38.9 points (see table immediately below) to the **year-to-date Combined Operating Ratio** to end at **185.6%**.

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

AB Grid	ytd EP 51,647 (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	23.8%	2.4%	26.2%	0.8%	-	26.9%
CAY	4.9%	0.5%	5.4%	0.1%	-	5.6%
Prem Def	5.7%	0.6%	6.3%	0.1%	-	6.4%
TOTAL	34.5%	3.4%	37.9%	1.0%	-	38.9%

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 \$17.8 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 \$12.3 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) 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

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.

“phenomena” occurring in the Alberta non-Grid RSP. The unfavourable impact is 5.3% of the prior accident years’ nominal unpaid balance of \$233.6 million determined at the end of last month (April 2016).

The current accident year and premium deficiency impacts are a result of changes in the selected loss ratios for accident years **2016** (up 4.9 points from 73.7% to **78.6%**) and **2017** (up 4.7 points from 73.9% to **78.6%**).

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 \$1.8 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 March 2016. Column [4] accounts for the change in the **discount rate** selected (decreased 5 basis points to **0.65%**), indicating an unfavourable impact of \$0.5 million. The impact *related only to claims liabilities* (i.e. PAYs plus CAY) was \$0.5 million at May 2016 (projected \$0.5 million impact at December 31, 2016) – this compares to the \$0.4 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.

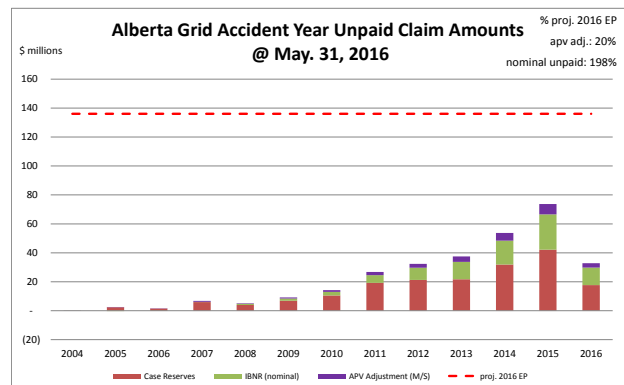
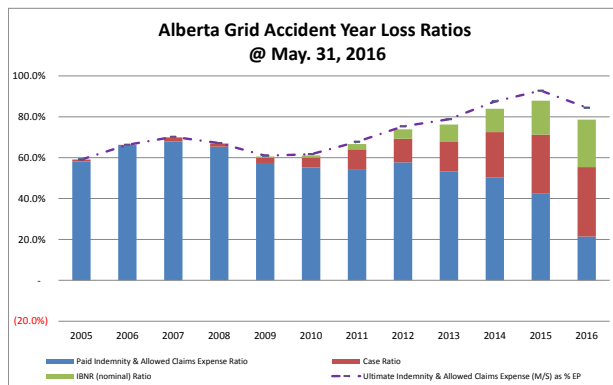
1.4 Consideration of Recent Legal Decisions and Changes in Legislation / Regulation

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.

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 (\$27.4 million – see table at the top of the next page) represents 20% 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	185,378	62.6%
ibnr	83,350	28.1%
M/S apv adjust.	27,379	9.2%
M/S total	296,107	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 44% of the IBNR balance relates to accident years 2015 and 2016 (see Exhibit B). Approximately 78% 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)			policy liabilities (\$000s)		
	amt	%		amt	%
unearned prem	62,127	116.7%	claim	268,728	76.9%
prem def/(dpac)	(13,199)	(24.8%)	premium	48,928	14.0%
M/S apv adjust.	4,305	8.1%	M/S apv adjust.	31,684	9.1%
M/S total	53,233	100.0%	M/S total	349,340	100.0%

2 Activity During the Month of May 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	4,428	772	(3,056)	(234)	1,372	538
2014	(3)	(3)	954	(453)	70	1,027	1,025	575
2015	(42)	(42)	1,558	(314)	(2,707)	(2,063)	(1,149)	(2,377)
2016	10,241	(14)	2,936	(643)	3,801	675	6,737	33
TOTAL	10,197	(58)	9,876	(638)	(1,891)	(594)	7,985	(1,232)

(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

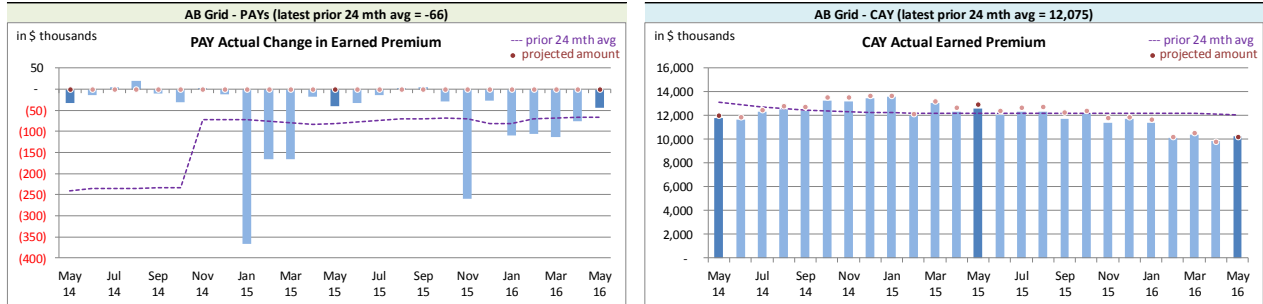
The charts at the top of the next page show actual **earned premium**⁵ activity in each of the most

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.

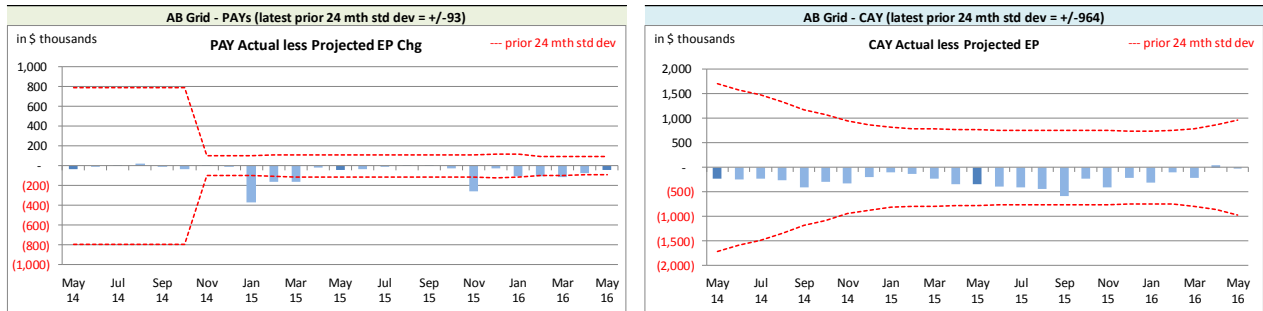
Alberta Grid RSP Actual Earned Premium by Calendar Month



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)	(66)	12,075
std dev	93	964
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

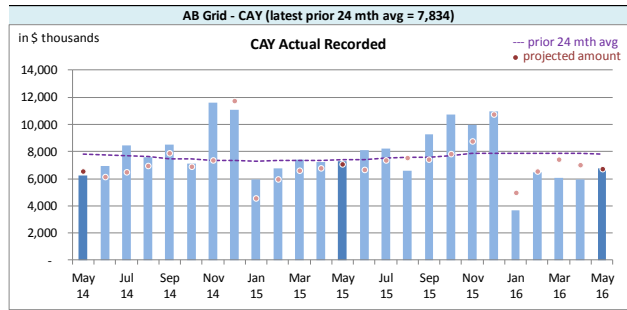
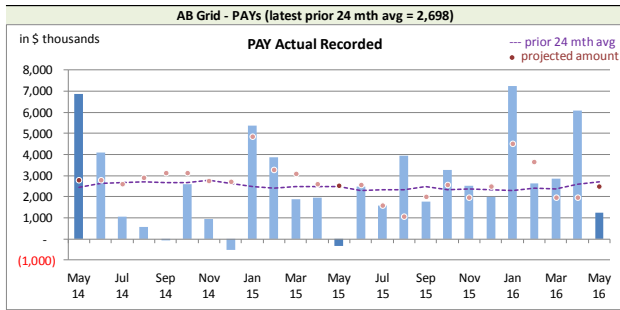
variances are within the prior 24-month standard deviation more often than indicated by a normal distribution (see table above). Over time, we may consider other projection approaches to narrow monthly variance levels further, but it is not currently deemed a priority.

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.

2.1.b AvsP: Recorded Indemnity & Allowed Claims Expense

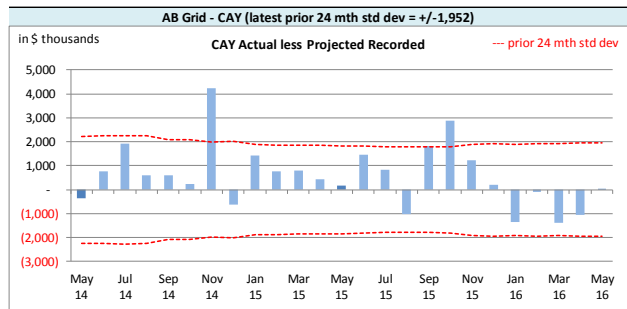
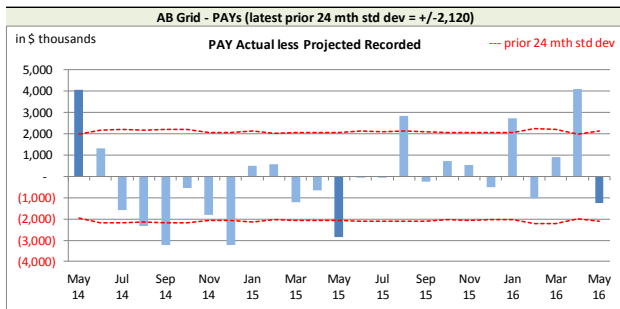
Actual **recorded** activity (**paid** and case reserve changes) over the last 25-month period are shown in the charts immediately below, including the “prior 24-month average” level.

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)	2,698	7,834	
std dev	2,120	1,952	
A-P <> std dev	8	3	
% <> std dev	32.0%	12.0%	
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 July 2014 to December 2014 there were 5 months with PAYs recorded amounts of \$1 million or less, whereas the 17-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.

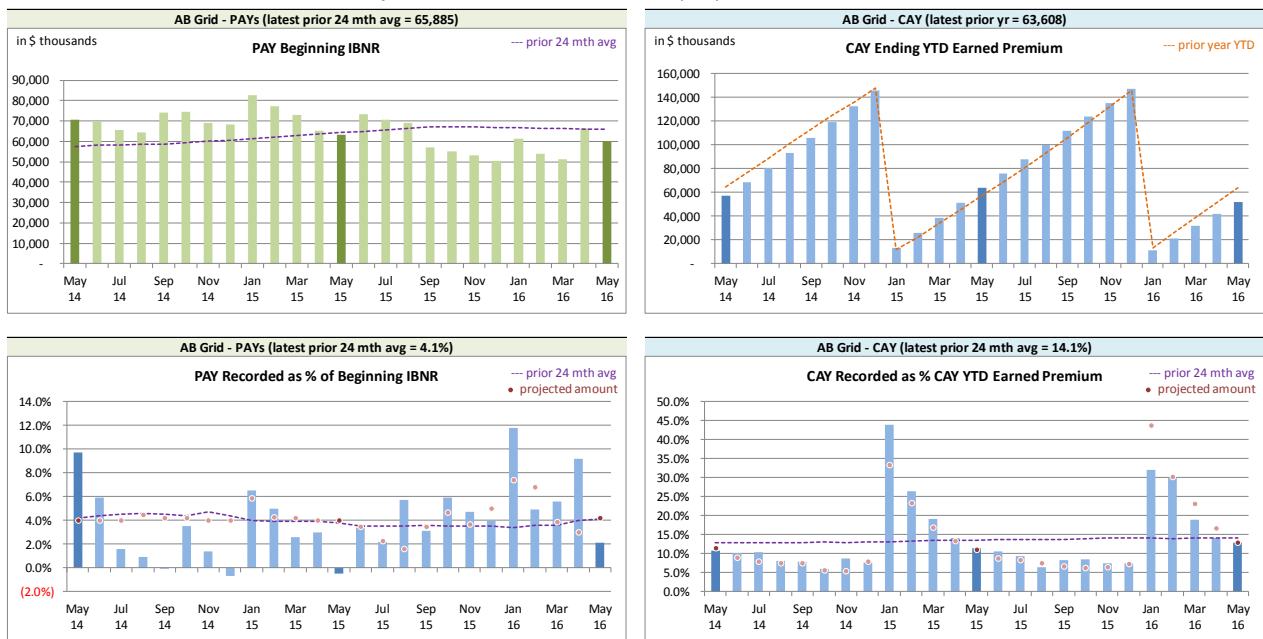
The current accident year (CAY) **recorded** variances (right chart above) may be indicating bias

(where actuals have tended to be higher than projections), although adjustments to the projection process may be addressing this. At 12%, 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 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);
- 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

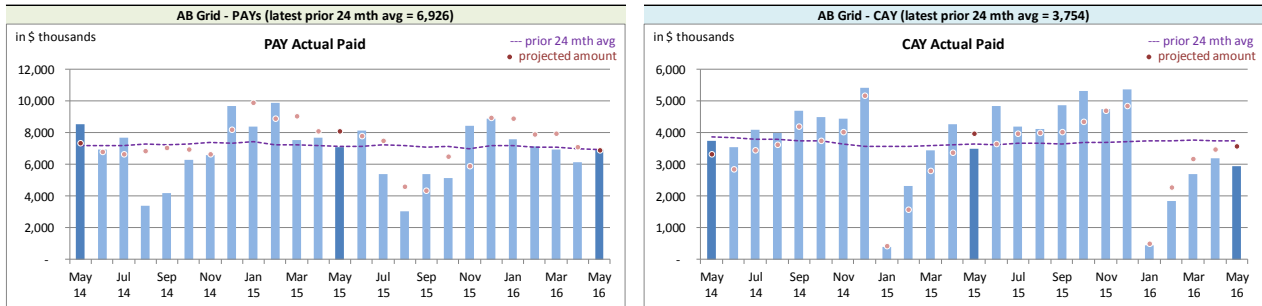
⁷Our recorded activity projections for the prior accident years are based on selected ratios of recorded activity to beginning unpaid balances, whereas the current accident year projections are based on selected ratios of year-to-date IBNR to year-to-date selected ultimate (i.e. selected LR x earned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

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

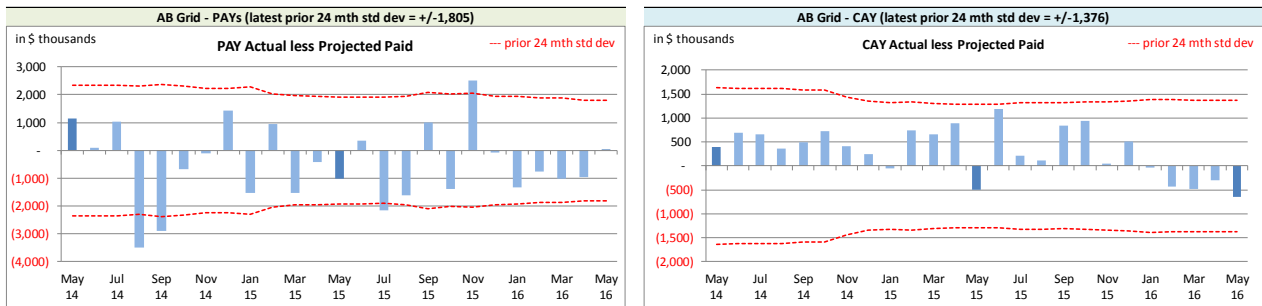
The charts immediately below show actual **paid** activity in each of the most recent 25 calendar months, along with a “prior 24-month average” to show how each month’s actual compares with the average amount of the preceding 24 calendar months.

*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)	6,926	3,754
std dev	1,805	1,376
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

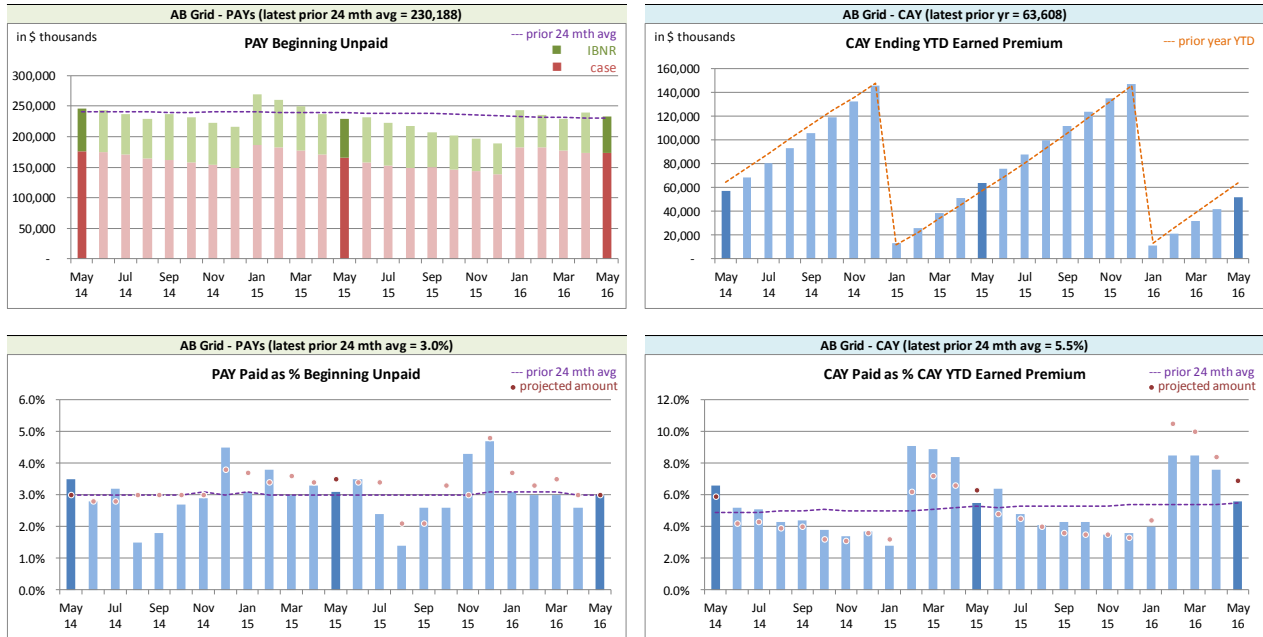
from the preceding 24-month average. However, there appears to be evidence of bias (actuals tend to be lower than projected) – as discussed with respect to **recorded** activity potentially showing bias the other way (i.e. with actuals tending to be higher than projected) this bias divergence may suggest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

The current accident year (CAY) **paid** variances (right chart above) indicate bias (where actuals tend to be higher than our projections), but efforts to address this may be working. 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 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 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

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”.

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 May 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		actuarial present value adjustments							
Accident Year	IBNR		Discount Amount		Provisions for Adverse Deviations		IBNR + actuarial present value adjustments		
	Actual	Actual less Projected	Actual	Actual less Projected	Actual	Actual less Projected	Actual	Actual less Projected	
	Prior	30,448	3,568	(1,972)	57	13,774	474	42,250	4,099
2014	16,445	1,883	(920)	35	6,227	339	21,752	2,257	
2015	24,385	8,070	(1,397)	(5)	8,609	733	31,597	8,798	
2016	12,072	2,510	(596)	(37)	3,654	419	15,130	2,892	
TOTAL	83,350	16,031	(4,885)	50	32,264	1,965	110,729	18,046	

The IBNR provision is \$16.0 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 May 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.

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:	(13,199)	1,834	4,305	619	(8,894)	2,453
balance as % unearned premium:	(21.2%)	4.8%	6.9%	0.5%	(14.3%)	5.3%
actual unearned premium:	62,127					
less projected:	4,295					

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 79.3% rather than 78.6% (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	29,918	57.9%	1,051	2.0%	30,969	60.0%	13,197	17.1%
CAY	40,946	79.3%	3,058	5.9%	44,004	85.2%	10,881	5.3%
TOTAL	70,864	137.2%	4,109	8.0%	74,973	145.2%	24,079	22.4%

(“% 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 Apr. 2016	Actual May. 2016	Projected Jun. 2016	Projected Jul. 2016	Projected Dec. 2016
	2004	(72)	(72)	(70)	(68)	(59)
	2005	145	(64)	(63)	(60)	(49)
	2006	(236)	54	52	50	46
	2007	844	830	804	779	680
	2008	1,616	1,227	1,192	1,156	998
	2009	2,460	2,367	2,297	2,228	1,927
	2010	3,819	3,636	3,527	3,421	2,938
discount rate	2011	7,169	7,428	7,206	6,989	6,001
0.65%	2012	9,222	11,065	10,735	10,413	8,942
	2013	14,358	15,779	15,325	14,884	12,813
interest rate margin	2014	20,096	21,752	21,100	20,572	17,480
25 basis pts	2015	24,228	31,597	29,796	29,358	24,580
	2016	10,986	15,130	16,711	18,417	37,616
	TOTAL	94,635	110,729	108,612	108,139	113,913
	Change		16,094	(2,117)	(473)	

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

EXHIBIT B
IBNR

TABLE EXHIBIT B

Amounts in \$000s

IBNR	Ultimate Loss Ratio	Accident Year	Actual Apr. 2016	Actual May. 2016	Projected Jun. 2016	Projected Jul. 2016	Projected Dec. 2016
	51.6%	2004	(80)	(80)	(78)	(76)	(66)
	59.0%	2005	(84)	(263)	(255)	(247)	(212)
	66.3%	2006	(340)	(77)	(75)	(73)	(63)
	70.0%	2007	268	260	252	244	210
	67.0%	2008	1,111	798	774	751	644
	60.7%	2009	1,675	1,610	1,562	1,515	1,302
	61.2%	2010	2,594	2,485	2,410	2,338	2,008
	66.7%	2011	5,088	5,301	5,142	4,988	4,283
	73.9%	2012	6,723	8,439	8,186	7,940	6,819
	76.2%	2013	10,759	11,975	11,616	11,268	9,577
	83.8%	2014	15,012	16,445	15,952	15,553	12,942
	87.9%	2015	17,543	24,385	22,800	22,572	18,384
	78.6%	2016	8,709	12,072	13,220	14,387	30,569
		TOTAL	68,978	83,350	81,506	81,160	86,397
		Change		14,372	(1,844)	(346)	

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

EXHIBIT C

Premium Liabilities

TABLE EXHIBIT C

	Amounts in \$000s				
	Actual Apr. 2016	Actual May. 2016	Projected Jun. 2016	Projected Jul. 2016	Projected Dec. 2016
Premium Liabilities					
(1) unearned premium (UP)	57,718	62,127	65,845	70,025	79,799
FOR MEMBER SHARING					
(2) expected future costs ratio {% of (1)}	80.4%	85.7%	85.6%	85.6%	85.2%
(3) expected future costs {(1) x (2)}	46,385	53,233	56,386	59,922	67,953
(4) premium deficiency / (deferred policy acquisition cost)	(11,333)	(8,894)	(9,459)	(10,103)	(11,846)
Excluding Actuarial Present Value Adjustments					
(5) expected future costs ratio {% of (1)}	74.0%	78.8%	78.7%	78.7%	78.3%
(6) expected future costs {(1) x (5)}	42,707	48,928	51,826	55,077	62,458
(7) premium deficiency / (deferred policy acquisition cost)	(15,011)	(13,199)	(14,019)	(14,948)	(17,341)

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	(1)	(66)	(67)	-	-	7	7	(60)	
2005	1,989	(212)	1,777	(20)	7	176	163	1,940	
2006	1,240	(63)	1,177	(13)	5	117	109	1,286	
2007	4,903	210	5,113	(61)	26	505	470	5,583	
2008	3,269	644	3,913	(55)	23	386	354	4,267	
2009	5,679	1,302	6,981	(105)	42	688	625	7,606	
2010	8,526	2,008	10,534	(179)	74	1,035	930	11,464	
2011	15,598	4,283	19,881	(318)	119	1,917	1,718	21,599	
2012	17,188	6,819	24,007	(384)	144	2,363	2,123	26,130	
2013	19,086	9,577	28,663	(487)	201	3,522	3,236	31,899	
2014	28,435	12,942	41,377	(786)	290	5,034	4,538	45,915	
2015	38,776	18,384	57,160	(1,200)	457	6,939	6,196	63,356	
PAYs (sub-total):	144,688	55,828	200,516	(3,608)	1,388	22,689	20,469	220,985	
CAY (2016)	38,077	30,569	68,646	(1,373)	549	7,871	7,047	75,693	
claims liabilities:	182,765	86,397	269,162	(4,981)	1,937	30,560	27,516	296,678	
	Unearned Premium	Premium Deficiency / (DPAC)	Total Provision	discount	investment PfAD	development PfAD	Total apvs	TOTAL*	
premium liabilities:	79,799	(17,341)	62,458	(1,058)	373	6,180	5,495	67,953	
*Total may not be sum of parts, as apvs apply to future costs within UPR									
policy liabilities:			331,620	(6,039)	2,310	36,740	33,011	364,631	

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.

Accident Year	Selected Claims Development MfADs (Mar. 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%	9.6%	10.0%
2009	10.0%	10.0%	5.1%	10.0%
2010	10.0%	10.0%	8.8%	10.0%
2011	10.0%	10.0%	8.2%	9.8%
2012	10.0%	10.0%	8.7%	10.0%
2013	12.5%	10.0%	11.5%	12.5%
2014	12.5%	10.0%	11.5%	12.4%
2015	12.4%	10.0%	12.5%	12.4%
2016	12.0%	10.0%	7.2%	11.7%
2017	12.5%	10.0%	12.5%	12.5%
prem liab	11.8%	10.0%	5.2%	10.1%
			discount rate:	0.65%
			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 (0.65%), the prior valuation assumption (0.70%) 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	0.15%	0.65%	1.15%	1.65%	2.15%	2.65%	0.70%	0.75%
2004	-	-	-	-	-	-	-	-
2005	1,568	1,556	1,543	1,529	1,516	1,503	1,555	1,554
2006	1,694	1,683	1,669	1,655	1,642	1,628	1,681	1,680
2007	5,006	4,969	4,925	4,882	4,839	4,797	4,964	4,960
2008	4,444	4,405	4,360	4,315	4,271	4,228	4,401	4,396
2009	8,338	8,260	8,168	8,078	7,990	7,904	8,251	8,242
2010	11,557	11,435	11,291	11,149	11,011	10,877	11,421	11,406
2011	18,716	18,527	18,301	18,080	17,865	17,656	18,505	18,482
2012	26,775	26,511	26,199	25,894	25,595	25,305	26,481	26,448
2013	32,496	32,149	31,742	31,344	30,954	30,574	32,110	32,068
2014	48,452	47,861	47,168	46,490	45,833	45,194	47,790	47,719
2015	64,505	63,627	62,590	61,578	60,597	59,654	63,523	63,411
2016	67,145	66,306	65,322	64,363	63,428	62,530	66,212	66,104
Total	290,696	287,289	283,278	279,357	275,541	271,850	286,894	286,470
	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	0.15%	0.65%	1.15%	1.65%	2.15%	2.65%	0.70%	0.75%
Total	3,407	-	(4,011)	(7,932)	(11,748)	(15,439)	(395)	(819)
	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	0.15%	0.65%	1.15%	1.65%	2.15%	2.65%	0.70%	0.75%
2004	-	-	-	-	-	-	-	-
2005	0.8%	-	(0.8%)	(1.7%)	(2.6%)	(3.4%)	(0.1%)	(0.1%)
2006	0.7%	-	(0.8%)	(1.7%)	(2.4%)	(3.3%)	(0.1%)	(0.2%)
2007	0.7%	-	(0.9%)	(1.8%)	(2.6%)	(3.5%)	(0.1%)	(0.2%)
2008	0.9%	-	(1.0%)	(2.0%)	(3.0%)	(4.0%)	(0.1%)	(0.2%)
2009	0.9%	-	(1.1%)	(2.2%)	(3.3%)	(4.3%)	(0.1%)	(0.2%)
2010	1.1%	-	(1.3%)	(2.5%)	(3.7%)	(4.9%)	(0.1%)	(0.3%)
2011	1.0%	-	(1.2%)	(2.4%)	(3.6%)	(4.7%)	(0.1%)	(0.2%)
2012	1.0%	-	(1.2%)	(2.3%)	(3.5%)	(4.5%)	(0.1%)	(0.2%)
2013	1.1%	-	(1.3%)	(2.5%)	(3.7%)	(4.9%)	(0.1%)	(0.3%)
2014	1.2%	-	(1.4%)	(2.9%)	(4.2%)	(5.6%)	(0.1%)	(0.3%)
2015	1.4%	-	(1.6%)	(3.2%)	(4.8%)	(6.2%)	(0.2%)	(0.3%)
2016	1.3%	-	(1.5%)	(2.9%)	(4.3%)	(5.7%)	(0.1%)	(0.3%)
Total	1.2%	-	(1.4%)	(2.8%)	(4.1%)	(5.4%)	(0.1%)	(0.3%)
	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)	-	-	-	-	-	(72)
2005	145	3	77	(289)	(209)	(144.1%)	(64)
2006	(236)	7	(44)	327	290	(122.9%)	54
2007	844	(25)	3	8	(14)	(1.7%)	830
2008	1,616	(49)	(30)	(310)	(389)	(24.1%)	1,227
2009	2,460	(74)	(28)	9	(93)	(3.8%)	2,367
2010	3,819	(115)	(82)	14	(183)	(4.8%)	3,636
2011	7,169	(214)	11	462	259	3.6%	7,428
2012	9,222	(276)	(304)	2,423	1,843	20.0%	11,065
2013	14,358	(431)	(207)	2,059	1,421	9.9%	15,779
2014	20,096	(601)	(530)	2,787	1,656	8.2%	21,752
2015	24,228	(1,429)	2,371	6,427	7,369	30.4%	31,597
2016	10,986	1,252	23	2,869	4,144	37.7%	15,130
Grand Total	94,635	(1,952)	1,260	16,786	16,094	17.0%	110,729

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	(84)	3	86	(268)	(179)	213.1%	(263)
2006	(340)	10	(46)	299	263	(77.4%)	(77)
2007	268	(8)	-	-	(8)	(3.0%)	260
2008	1,111	(33)	8	(288)	(313)	(28.2%)	798
2009	1,675	(50)	(15)	-	(65)	(3.9%)	1,610
2010	2,594	(78)	(31)	-	(109)	(4.2%)	2,485
2011	5,088	(153)	(35)	401	213	4.2%	5,301
2012	6,723	(202)	(281)	2,199	1,716	25.5%	8,439
2013	10,759	(323)	(223)	1,762	1,216	11.3%	11,975
2014	15,012	(450)	(577)	2,460	1,433	9.5%	16,445
2015	17,543	(1,228)	2,342	5,728	6,842	39.0%	24,385
2016	8,709	853	(42)	2,552	3,363	38.6%	12,072
Grand Total	68,978	(1,659)	1,186	14,845	14,372	20.8%	83,350