



ALBERTA NON-GRID RISK SHARING POOL

FEBRUARY 2018 OPERATIONAL REPORT

ACTUARIAL HIGHLIGHTS

Related Bulletin: [F18-020 Alberta RSPs February 2018 Operational Reports](#)

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

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

ACTUARIAL HIGHLIGHTS
RSP ALBERTA NON-GRID
OPERATIONAL REPORT
FEBRUARY 2018

TABLE OF CONTENTS

1	Summary.....	2
1.1	Valuation Schedule (Fiscal Year 2018).....	2
1.2	Appointed Actuary and Hybrid Actuarial Services Model.....	2
1.3	Consideration of Recent Legal Decisions and Changes in Legislation / Regulation	2
1.4	Current Provision Summary	3
2	Activity During the Month of February 2018	4
2.1	Recorded Premium and Claims Activity	4
2.1.a	Actual vs. Projected (AvsP): Earned Premium.....	5
2.1.b	AvsP: Recorded Indemnity & Allowed Claims Expense	6
2.1.c	AvsP: Paid Indemnity & Allowed Claims Expense	8
2.2	Actuarial Provisions.....	10
3	Ultimate Loss Ratio Matching Method.....	12
4	Calendar Year-to-Date Results.....	12
5	Current Operational Report – Additional Exhibits	13
6	EXHIBITS	13

1 Summary

1.1 Valuation Schedule (Fiscal Year 2018)

The February 2018 Operational Report leverages actuarial assumptions consistent with last month (that is, it does not reflect the results of an updated valuation). The table immediately below summarizes the implemented valuations and future scheduled valuations for fiscal year 2018.

ALBERTA NON-GRID RISK SHARING POOL FISCAL YEAR 2018 – SCHEDULE OF VALUATIONS			
Valuation Date	Discount Rate (per annum)	Operational Report	Description of Changes
Sep. 30, 2017 (completed)	1.76% mfad: 25 bp	Oct. 2017	updated valuation (roll forward): accident year 2017 loss ratio increased 2.9 points to 112.8%; discount rate increased by 56 basis points; no change to selected margins for adverse deviations
Dec. 31, 2017		Mar. 2018	update valuation:
Mar. 31, 2018		May 2018	update valuation (roll forward):
Jun. 30, 2018		Aug. 2018	update valuation:
Sep. 30, 2018		Oct. 2018	update valuation (roll forward):

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

1.2 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.

1.3 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 on the next page. There have been no changes in these descriptions since last month’s Highlights.

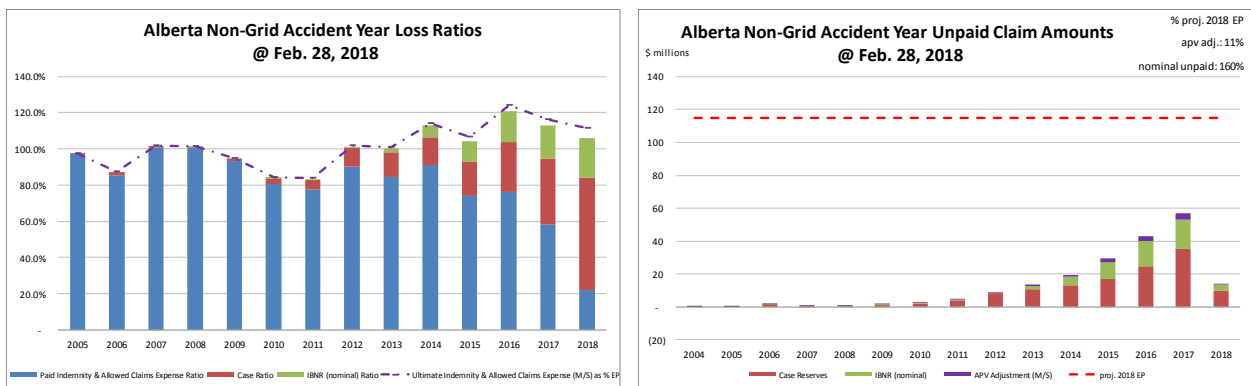
The **Supreme Court of Canada** rendered its judgment on **Saadati v Moorhead (2017 SCC 28, rendered on Jun 2, 2017)**. Saadati was involved in a collision in July of 2005 in British Columbia and sued the at-fault driver for damages. According to the Supreme Court decision, “*The trial judge found that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

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

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

1.4 Current Provision Summary

The charts immediately below show the current levels of claim liabilities¹ booked by accident year². The left chart displays life-to-date payments, case reserves, IBNR, and the total including actuarial present value adjustments against accident year earned premium. The right chart shows the associated dollar amounts for the components of the claim liabilities and the current projected amount of 2018 full year earned premium (the red hash-mark line) to provide some perspective.



The current actuarial present value adjustments balance (\$12.7 million – see table at the top of the next page) represents 11% of the earned premium projected for the full year 2018 (the upper right corner of the right chart above). If our current estimates of the nominal unpaid amounts prove to

¹Claim 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.

²Accident year 2004 was an incomplete year and therefore has been excluded from the loss ratio chart.

match actual claims payments, the actuarial present value adjustments will be released into the net operating result over future periods.

claim liabilities (\$000s)	amt	%
case	128,528	65.3%
ibnr	55,654	28.3%
M/S apv adjust.	12,689	6.4%
M/S total	196,871	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 is in case reserves for this pool. Approximately 38% of the IBNR balance relates to accident years 2017 and 2018 (see Exhibit B). Approximately 83% of the M/S total

claim liabilities are related to accident years 2014-2018 inclusive (i.e. the most recent 5 accident years), and approximately 1% is related to accident years 2008 and prior (i.e. prior to the most recent 10 accident years).

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

premium liabilities (\$000s)			policy liabilities (\$000s)		
	amt	%		amt	%
unearned prem	48,139	89.0%	claim	184,182	73.4%
prem def/(dpac)	3,052	5.6%	premium	51,191	20.4%
M/S apv adjust.	2,927	5.4%	M/S apv adjust.	15,616	6.2%
M/S total	54,118	100.0%	M/S total	250,989	100.0%

2 Activity During the Month of February 2018

2.1 Recorded Premium and Claims Activity

The table immediately below summarizes the extent to which premiums and claims amounts recorded during the month differ from projections reflected in the prior month's Operational Report³.

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

Table 01 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)	1,251	(1,015)	(1,112)	285	139	(730)
2016	(10)	(10)	436	33	519	601	955	634
2017	(85)	(85)	2,714	(1,206)	(1,990)	441	724	(765)
2018	7,573	(31)	2,580	(245)	5,117	1,118	7,697	873
TOTAL	7,477	(128)	6,981	(2,433)	2,533	2,444	9,515	12

(Recorded transaction amounts exclude IBNR & other actuarial provisions)

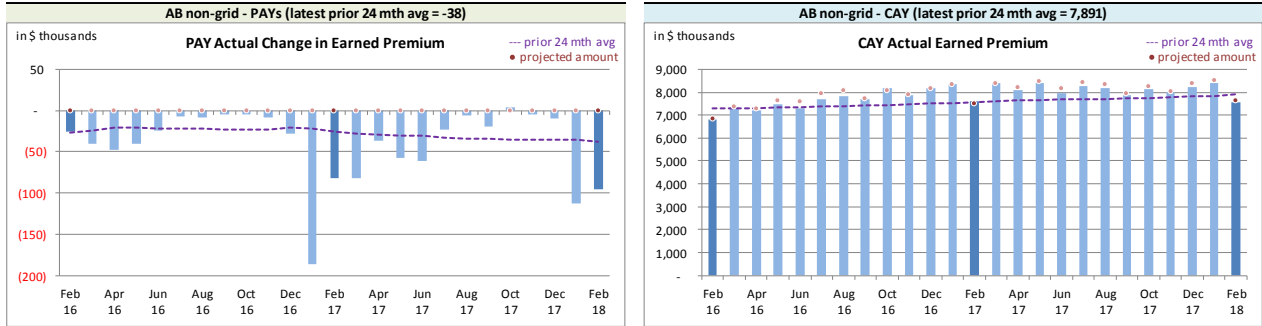
Claims transaction activity is generally volatile and changes from one month to the next are anticipated due to this natural "process variance" (i.e. random variation). Each month, the projection variances are reviewed for signs of projection bias and to identify potential ways to reduce the level of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

³There may be rounding differences in values in this document compared with the associated Bulletin and/or Operational Report.

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

The charts immediately below show actual **earned premium**⁴ 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 non-Grid RSP Actual Earned Premium by Calendar Month

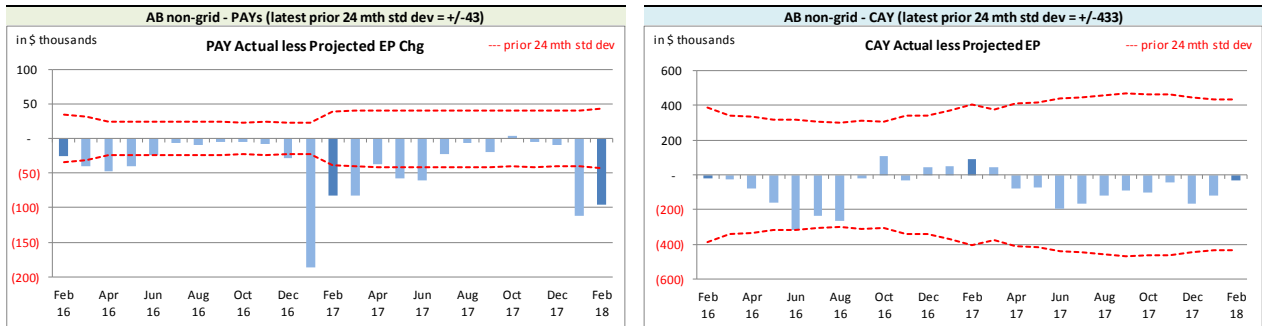


Earned premium changes during a given calendar month in relation to prior accident years tend to be at modest levels, although relatively high levels seem to occur at the beginning of each year.

We have noted and have investigated the unusually high level of PAYS earned premium activity earlier in 2017 and January/February 2018, particularly with respect to one member. Management reviewed and was satisfied with the appropriateness of the 2017 transactions, and is in the process of reviewing the January/February 2018 transactions.

The associated variance between the actual changes and the projections from the previous month are shown in the charts immediately below. **Earned premium** change projections are all attributed to the current accident year as the projection upload does not accept **earned premium** changes for other accident years. We do not see this limitation as being significant for our purposes, but it does mean that the actual less projection variance will equal the actual **earned premium** change in relation to prior accident years.

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



⁴Premium is earned on a daily basis based on the transaction term measured in days. As a result, months with 31 days earned relatively more than those with 30 days, and February earns the least.

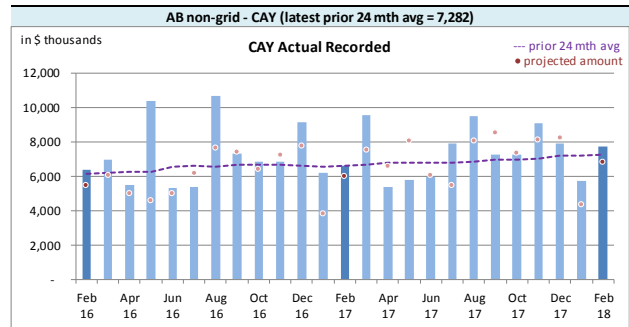
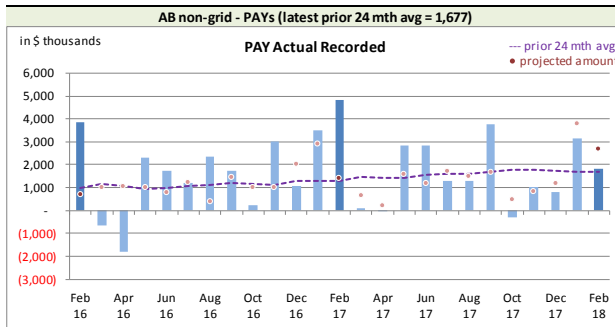
On Latest \$ thousands		
Earned Premium	PAYs	CAY
Mthly Avg EP Chg (prior 24 mths)	(38)	7,891
std dev	43	433
A-P <> std dev	11	1
% <> std dev	44.0%	4.0%
norm <> std dev	31.7%	31.7%

We project **earned premium** changes from known unearned premium and projected written premium levels, but upload the total projections as current accident year (CAY). This process has generated prior accident years’ (PAYs) bias⁵, with actuals generally lower than projected. However, the magnitude is not high relative to monthly premium. In addition to the PAYs’ bias, the CAY has also shown bias⁶, with actuals being generally lower than projected, and we have modified our projections processes in response. (We note bias again post April 2017, which we are reviewing.) Over time, we may consider other projection approaches to narrow monthly variance levels further, but it is not currently deemed a priority.

2.1.b AvsP: Recorded Indemnity & Allowed Claims Expense

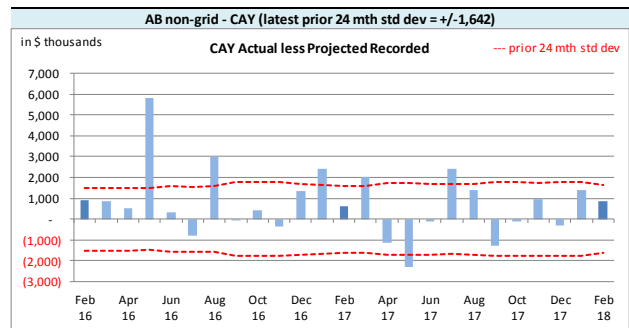
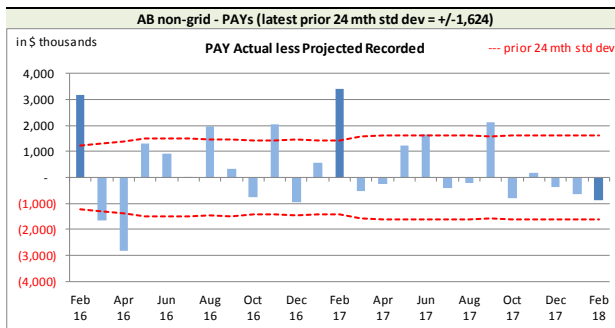
The charts immediately below show actual **recorded** activity (**paid** and case reserve changes), in each of the most recent 25 calendar months, along with a “prior 24-month average” to show how each month’s actual compares with the average amount of the preceding 24 calendar months.

Alberta non-Grid RSP Actual Recorded by Calendar Month



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

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



⁵The PAYs’ variances will show bias as the projection upload forces all earned premium projections to be attributed to the CAY.

⁶We measure bias based on a 95% confidence range for a binominal distribution with trials based on the range being considered (24 in this case) and 50% probability of success. The 24-month variances at February 2018 has only 5 months where the projection was higher than projected, and as the 95% confidence range is 7 to 17, bias continues to be indicated.

On Latest \$ thousands		
Recorded	PAYs	CAY
Mthly Avg Recorded (prior 24 mths)	1,677	7,282
std dev	1,624	1,642
A-P <> std dev	8	6
% <> std dev	32.0%	24.0%
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 at the bottom of the prior page) fell outside of the experience period's standard deviation, suggesting the projection process has performed no better than a projection based simply on the

24-month average. We have implemented changes in an attempt to address this. No bias has been indicated at a 95% confidence level on a lagging 24-month basis.

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

FA management was notified on January 31, 2018 by a member of a potential recorded case reserve overstatement. Management investigated and estimated the overstatement for the Alberta non-Grid RSP as at October 31, 2017 as indicated in the table immediately below.

Estimated case reserve overstatement as at Oct 31, 2017

Case Reserve Overstatement

250 RSP AB-N

	Amounts in \$000s
2010	9
2011	-
2012	-
2013	(32)
2014	102
2015	517
2016	2,531
2017	1,594
TOTAL	4,721

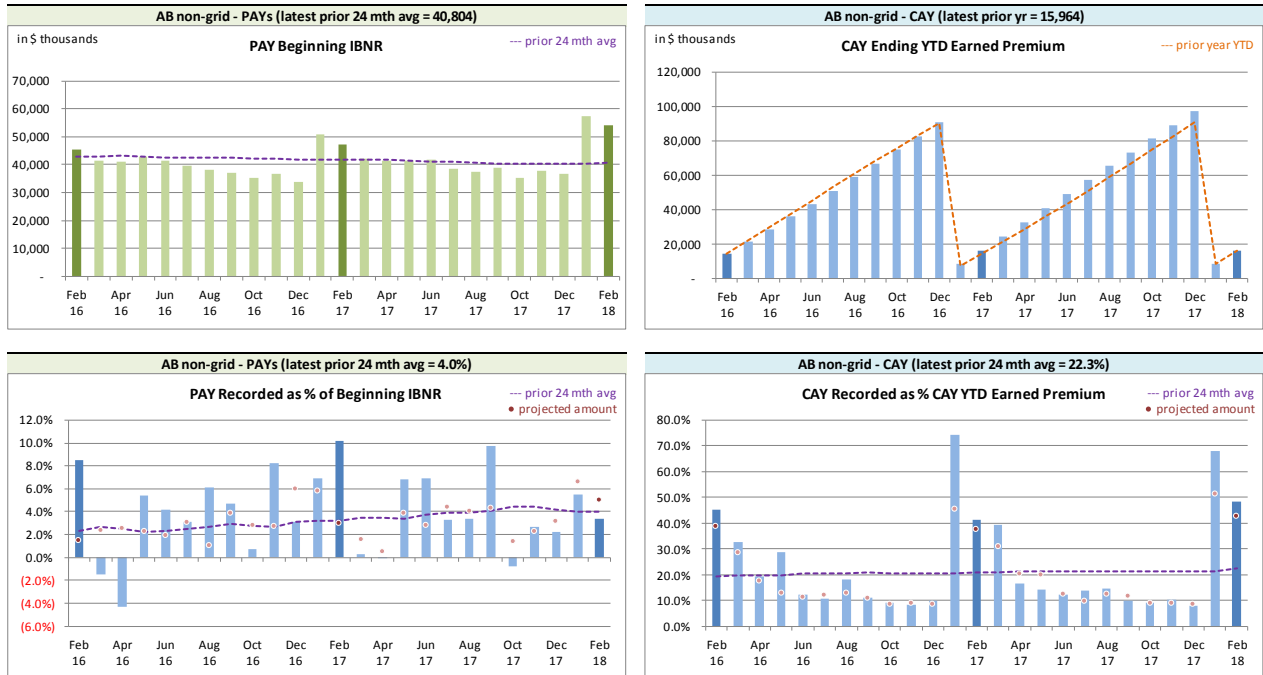
The overstatement of \$4.7 million represented 3.8% of total case reserves recorded at October 31, 2017 for the Alberta non-Grid RSP, and 2.6% of nominal claims liabilities.

FA's year-end audited financial statements (as at October 31, 2017) were adjusted to reflect this overstatement by reducing the claims liabilities amount by the overstatement (as well as release of associated margins for adverse claims development). However, no adjustment has currently been made to reflect this in the Member Statements (i.e. monthly RSP Operational Reports). It is currently expected to be reflected via reductions in ultimate with the December 31, 2017 valuation, expected to be implemented into the March 2018 Operational Reports.

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.

Alberta non-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:

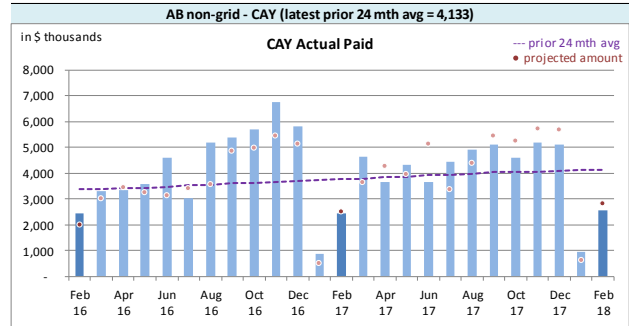
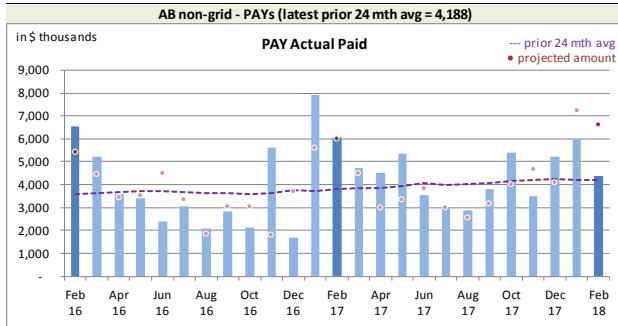
- to offset actual **recorded** activity (through loss ratio matching);
- the annual switchover as a current accident year becomes a prior accident year (occurs in January); and
- when a new valuation is implemented, where the valuation resulted in changes to the selection of prior accident years’ ultimate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

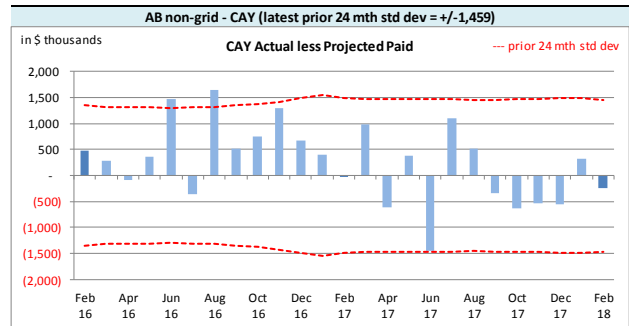
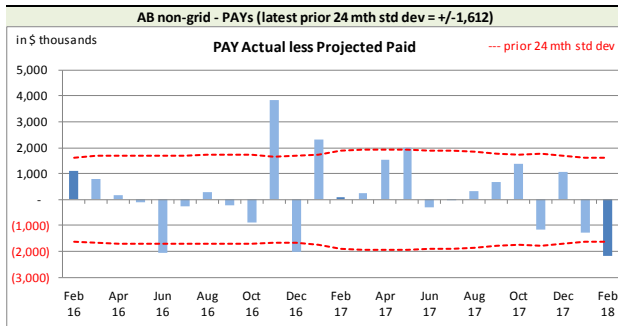
⁷Our recorded activity projections for the prior accident years are based on selected ratios of recorded activity to beginning unpaid balances, whereas the current accident year projections are based on selected ratios of year-to-date IBNR to year-to-date selected ultimate (i.e. selected LR x earned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



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

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



On Latest \$ thousands			
	Paid	PAYs	CAY
Mthly Avg Paid (prior 24 mths)		4,188	4,133
std dev		1,612	1,459
A-P <> std dev		6	2
% <> std dev		24.0%	8.0%
norm <> std dev		31.7%	31.7%

With respect to **paid** indemnity & allowed claims expense, the prior accident years’ variances (left chart above) do not appear to have bias and the magnitude of the variances do not appear to be an issue. With 24% of prior accident years (PAYs) **paid** variances over the last 25 calendar months falling outside of one standard deviation,

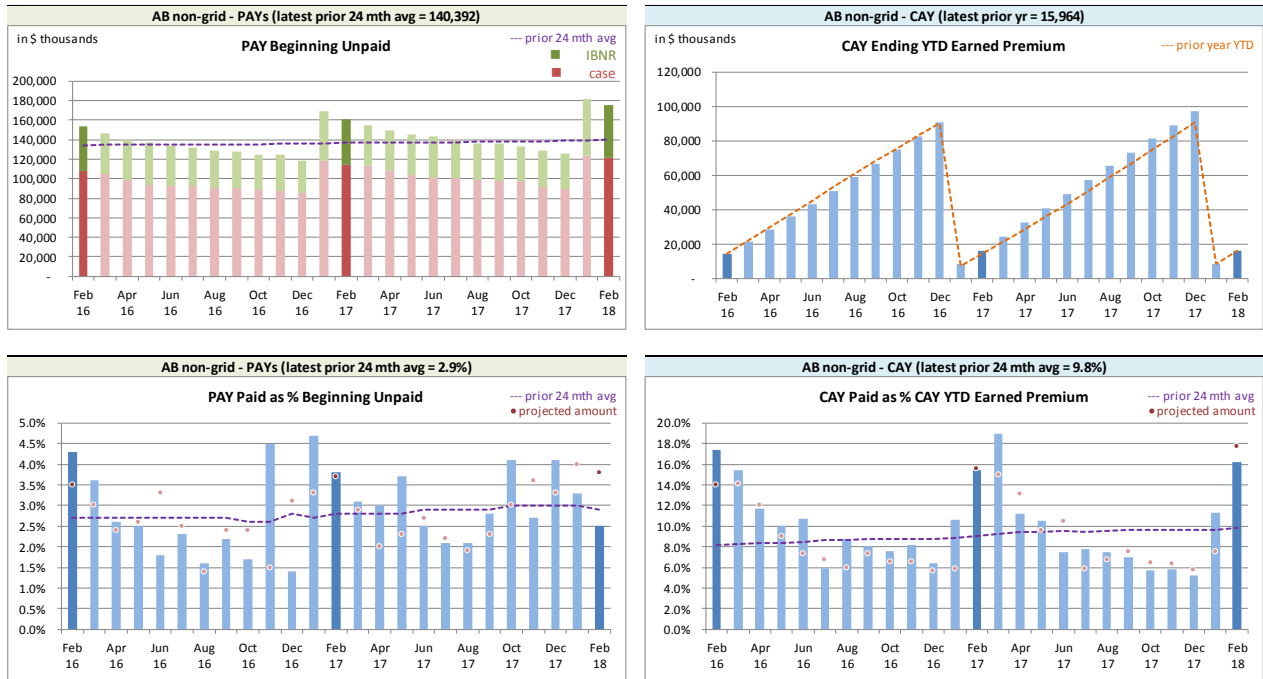
the projection process has performed better than simply projecting based on a 24-month average. No bias has been indicated at a 95% confidence level on a lagging 24-month basis.

The PAY paid variance was outside of one standard deviation. The activity was reviewed and confirmed, with the variance attributed to process variance.

With only 8% of the current accident year (CAY) **paid** variances falling outside of one standard deviation of the experience period activity, the projection process has performed better than simply projecting based on a 24-month average. While no bias has been indicated at a 95% confidence level on a lagging 24-month basis this month, it was indicated for each month from November 2015 through to September 2017. We made adjustments to our projection process to reflect this, and they appear to have been somewhat successful.

We have included, for reference, additional charts at the top of the next page related to levels influencing **paid** activity.

Alberta non-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 February 2018 Operational Report and the

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”.

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

Alberta Non-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	
			Discount Amount		Provisions for Adverse Deviations			
	Actual	Actual less Projected	Actual	Actual less Projected	Actual	Actual less Projected	Actual	Actual less Projected
Prior	19,272	730	(3,266)	(38)	8,520	102	24,526	794
2016	15,094	(646)	(1,915)	2	4,949	(6)	18,128	(650)
2017	17,791	670	(2,766)	(58)	6,271	130	21,296	742
2018	3,497	(906)	(682)	(11)	1,578	25	4,393	(892)
TOTAL	55,654	(152)	(8,629)	(105)	21,318	251	68,343	(6)

The IBNR provision is \$0.2 million lower than projected from last month, counterbalancing the recorded claims activity and adjusting for the earned premium variance impacts indicated in section 2.1.

Exhibit G shows the accident year IBNR amount change from last month to this month broken down into:

- (i) the change projected last month;
- (ii) the additional change due to variances in earned premium (because we apply a loss ratio to earned premium in determining ultimate level) and/or recorded claims (as IBNR is calculated as ultimate less recorded) differences; and
- (iii) the additional change due to valuation implementation impacts (as applicable)

The variances associated with (ii) above are discussed in sections 2.1.a and 2.1.b.

The table immediately below summarizes the variances in the provisions for premium deficiency liability / (deferred policy acquisition cost asset) included in the February 2018 Operational Report and the one-month projections from last month’s Report. This RSP is in a premium deficiency position (shown as a positive amount) prior to and after actuarial present value adjustments. Actuarial present value adjustments increase the liability value as the adjustments increase the expected future policy obligations (costs) associated with the unearned premium. The variances noted are mainly driven by the unearned premium variance.

Alberta Non-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:	3,052	(26)	2,927	(25)	5,979	(51)
balance as % unearned premium:	6.3%	-	6.1%	-	12.4%	-
actual unearned premium:	48,139					
less projected:	(412)					

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 107.2% rather than 105.8% (the valuation ultimate ratio for accident year 2018), as the calendar year-to-date earned premium includes prior accident year earned premium adjustments. (Note that the ratios in this table may differ slightly from those shown in the Alberta Non-Grid RSP Summary of Operations due to rounding.)

Alberta Non-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	(236)	(1.5%)	(430)	(2.7%)	(666)	(4.2%)	(408)	(1.1%)
CAY	16,902	107.2%	896	5.7%	17,798	112.9%	8,375	(0.7%)
TOTAL	16,666	105.7%	466	3.0%	17,132	108.6%	7,967	(1.9%)

(“% EP” based on 2018 calendar year-to-date earned premium; ratios may not total due to rounding)

In general, prior accident years (PAYs) changes from last month are due to the release of the actuarial present value adjustments with claims payments, except when valuations are implemented. The loss ratio change year-to-date in Table 04 reflects not only changes in the prior accident year levels, but also the increase in the calendar year-to-date earned premium with an additional month’s earned premium.

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.

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.

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 detailed in section 6, Exhibit B, refer to the estimates derived on the basis of various actuarial methodologies applied to the experience of the Alberta Non-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 Jan. 2018	Actual Feb. 2018	Projected Mar. 2018	Projected Apr. 2018	Projected Dec. 2018
	2004	42	42	42	42	42
	2005	13	13	13	12	10
	2006	153	153	147	144	111
	2007	(86)	(86)	(87)	(87)	(56)
	2008	100	100	96	96	67
	2009	250	256	251	246	178
	2010	762	756	743	735	516
	2011	901	904	887	875	621
	2012	698	815	793	780	574
discount rate	2013	2,537	2,525	2,477	2,444	1,730
1.76%	2014	6,207	6,505	6,146	6,022	3,554
	2015	13,169	12,543	12,417	12,169	8,153
interest rate margin	2016	19,129	18,128	17,947	17,738	14,557
25 basis pts	2017	22,301	21,296	20,944	20,668	17,733
	2018	3,715	4,393	4,996	7,616	29,283
TOTAL		69,891	68,343	67,812	69,500	77,073
Change			(1,548)	(531)	1,688	

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 Jan. 2018	Actual Feb. 2018	Projected Mar. 2018	Projected Apr. 2018	Projected Dec. 2018
	349.1%	2004	36	36	36	36	36
	97.4%	2005	5	5	5	5	4
	87.2%	2006	9	9	9	9	6
	101.5%	2007	(122)	(122)	(121)	(120)	(81)
	101.2%	2008	72	72	71	70	47
	94.9%	2009	160	166	164	162	112
	84.3%	2010	587	583	577	571	389
	83.4%	2011	627	631	625	619	422
	101.1%	2012	210	333	330	327	222
	100.1%	2013	1,790	1,784	1,766	1,748	1,191
	112.9%	2014	5,128	5,460	5,132	5,029	2,744
	104.3%	2015	10,909	10,315	10,212	10,008	6,353
	120.6%	2016	16,061	15,094	14,943	14,794	12,078
	112.8%	2017	18,610	17,791	17,613	17,437	14,985
	105.8%	2018	3,182	3,497	3,783	6,052	25,028
		TOTAL	57,264	55,654	55,145	56,747	63,536
		Change		(1,610)	(509)	1,602	

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

EXHIBIT C

Premium Liabilities

TABLE EXHIBIT C

	Amounts in \$000s				
	Actual Jan. 2018	Actual Feb. 2018	Projected Mar. 2018	Projected Apr. 2018	Projected Dec. 2018
Premium Liabilities					
(1) unearned premium (UP)	48,528	48,139	47,714	53,636	65,464
FOR MEMBER SHARING					
(2) expected future costs ratio {% of (1)}	112.4%	112.4%	112.5%	112.7%	115.1%
(3) expected future costs {(1) x (2)}	54,532	54,118	53,684	60,445	75,353
(4) premium deficiency / (deferred policy acquisition cost)	6,004	5,979	5,970	6,809	9,889
Excluding Actuarial Present Value Adjustments					
(5) expected future costs ratio {% of (1)}	106.3%	106.3%	106.4%	106.6%	108.9%
(6) expected future costs {(1) x (5)}	51,583	51,191	50,780	57,177	71,277
(7) premium deficiency / (deferred policy acquisition cost)	3,055	3,052	3,066	3,541	5,813

EXHIBIT D
Projected Year-end Policy Liabilities

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

Alberta non-Grid ending 2018		Projected Balances as at Dec. 31, 2018 (\$000s)								
Acc Yr	nominal values			actuarial present value adjustments (apvs)					TOTAL	
	Case	IBNR	Total Unpaid	discount	investment PfAD	nominal development PfAD	development PfAD discount	development PfAD		Total apvs
2004	26	36	62	-	-	6	-	6	6	68
2005	55	4	59	-	-	6	-	6	6	65
2006	1,041	6	1,047	-	-	105	-	105	105	1,152
2007	429	(81)	348	(10)	1	35	(1)	34	25	373
2008	229	47	276	(8)	1	28	(1)	27	20	296
2009	828	112	940	(29)	4	94	(3)	91	66	1,006
2010	1,581	389	1,970	(73)	10	197	(7)	190	127	2,097
2011	2,908	422	3,330	(137)	17	333	(14)	319	199	3,529
2012	5,883	222	6,105	(269)	37	611	(27)	584	352	6,457
2013	8,012	1,191	9,203	(396)	55	920	(40)	880	539	9,742
2014	11,609	2,744	14,353	(646)	86	1,435	(65)	1,370	810	15,163
2015	15,695	6,353	22,048	(948)	132	2,734	(118)	2,616	1,800	23,848
2016	20,517	12,078	32,595	(1,565)	196	4,042	(194)	3,848	2,479	35,074
2017	26,711	14,985	41,696	(2,168)	292	4,878	(254)	4,624	2,748	44,444
PAYs (sub-total):	95,524	38,508	134,032	(6,249)	831	15,424	(724)	14,700	9,282	143,314
CAY (2018)	38,458	25,028	63,486	(3,238)	444	7,428	(379)	7,049	4,255	67,741
claims liabilities:	133,982	63,536	197,518	(9,487)	1,275	22,852	(1,103)	21,749	13,537	211,055
	Unearned Premium	Premium Deficiency / (DPAC)	Total Provision	discount	investment PfAD	nominal development PfAD	development PfAD discount	development PfAD	Total apvs	TOTAL*
premium liabilities:	65,464	5,813	71,277	(2,697)	355	6,671	(253)	6,418	4,076	75,353
*Total may not be sum of parts, as apvs apply to future costs within UPR										
policy liabilities:			268,795	(12,184)	1,630	29,523	(1,356)	28,167	17,613	286,408

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.

Selected Claims Development MfADs (Sep. 30, 2017)

Accident Year	Third Party Liability	Accident Benefits	Other Coverages	Total
2004	10.0%	10.0%	10.0%	10.0%
2005	10.0%	10.0%	10.0%	10.0%
2006	10.0%	10.0%	10.0%	10.0%
2007	10.0%	10.0%	10.0%	10.0%
2008	10.0%	10.0%	10.0%	10.0%
2009	10.0%	10.0%	10.0%	10.0%
2010	10.0%	10.0%	6.0%	10.0%
2011	10.0%	10.0%	10.0%	10.0%
2012	10.0%	10.0%	10.0%	10.0%
2013	10.0%	10.0%	9.8%	10.0%
2014	10.0%	10.0%	9.3%	10.0%
2015	12.5%	10.0%	11.1%	12.4%
2016	12.5%	10.0%	12.5%	12.4%
2017	12.1%	10.0%	8.2%	11.7%
2018	11.8%	10.0%	5.2%	9.4%
prem liab	11.8%	10.0%	5.2%	9.4%

discount rate: 1.76%
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 to Dec. 31, 2018, and are based on more up-to-date information). We have included the most recent valuation selection (1.76%), the prior valuation assumption (1.20%) and the prior fiscal year end valuation assumption (0.55%) 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	0.76%	1.26%	1.76%	2.26%	2.76%	3.26%	1.20%	0.55%
2004	-	-	-	-	-	-	-	-
2005	-	-	-	-	-	-	-	-
2006	1,330	1,319	1,309	1,298	1,288	1,278	1,320	1,334
2007	692	687	681	676	670	665	687	695
2008	370	367	364	360	357	354	367	372
2009	2,162	2,139	2,117	2,095	2,073	2,052	2,142	2,172
2010	2,754	2,721	2,689	2,657	2,627	2,597	2,725	2,768
2011	5,094	5,029	4,966	4,905	4,845	4,788	5,037	5,121
2012	10,645	10,513	10,385	10,260	10,139	10,022	10,528	10,701
2013	13,576	13,397	13,226	13,058	12,894	12,737	13,419	13,651
2014	22,289	22,009	21,739	21,473	21,217	20,968	22,042	22,408
2016	45,362	44,669	44,007	43,356	42,725	42,118	44,752	45,654
2017	66,776	65,786	64,842	63,923	63,032	62,176	65,905	67,193
Total	202,862	199,998	197,258	194,571	191,966	189,459	200,337	204,068
	curr - 100 bp	curr - 50 bp	curr val assumption	curr + 50bp	curr + 100bp	curr + 150bp	prior val assumption	prior fyr end assumption

Dollar Impact Relative to Valuation Assumption								
AY	0.76%	1.26%	1.76%	2.26%	2.76%	3.26%	1.20%	0.55%
Total	5,604	2,740	-	(2,687)	(5,292)	(7,799)	3,079	6,810
	curr - 100 bp	curr - 50 bp	curr val assumption	curr + 50bp	curr + 100bp	curr + 150bp	prior val assumption	prior fyr end assumption

Percentage Impact Relative to Valuation Assumption								
AY	0.76%	1.26%	1.76%	2.26%	2.76%	3.26%	1.20%	0.55%
2004	-	-	-	-	-	-	-	-
2005	-	-	-	-	-	-	-	-
2006	1.6%	0.8%	-	(0.8%)	(1.6%)	(2.4%)	0.8%	1.9%
2007	1.6%	0.9%	-	(0.7%)	(1.6%)	(2.3%)	0.9%	2.1%
2008	1.6%	0.8%	-	(1.1%)	(1.9%)	(2.7%)	0.8%	2.2%
2009	2.1%	1.0%	-	(1.0%)	(2.1%)	(3.1%)	1.2%	2.6%
2010	2.4%	1.2%	-	(1.2%)	(2.3%)	(3.4%)	1.3%	2.9%
2011	2.6%	1.3%	-	(1.2%)	(2.4%)	(3.6%)	1.4%	3.1%
2012	2.5%	1.2%	-	(1.2%)	(2.4%)	(3.5%)	1.4%	3.0%
2013	2.6%	1.3%	-	(1.3%)	(2.5%)	(3.7%)	1.5%	3.2%
2014	2.5%	1.2%	-	(1.2%)	(2.4%)	(3.5%)	1.4%	3.1%
2016	3.1%	1.5%	-	(1.5%)	(2.9%)	(4.3%)	1.7%	3.7%
2017	3.0%	1.5%	-	(1.4%)	(2.8%)	(4.1%)	1.6%	3.6%
Total	2.8%	1.4%	-	(1.4%)	(2.7%)	(4.0%)	1.6%	3.5%
	curr - 100 bp	curr - 50 bp	curr val assumption	curr + 50bp	curr + 100bp	curr + 150bp	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 Non-Grid			M/S IBNR - in \$000s		
AccountCode Desc		IBNR - Discou					
AccYear	Values						
	Sum of Prior Month Actual Amount	Sum of Projected Change	Sum of Change Due to AvsP Variances	Sum of Change Due to Valuation Implementation	Sum of Total Change	Sum of % Total Change	Sum of Current Month Final Amount
2004	42	-	-	-	-	-	42
2005	13	-	-	-	-	-	13
2006	153	(8)	8	-	-	-	153
2007	(86)	3	(3)	-	-	-	(86)
2008	100	(5)	5	-	-	-	100
2009	250	(11)	17	-	6	2.4%	256
2010	762	(33)	27	-	(6)	(0.8%)	756
2011	901	(39)	42	-	3	0.3%	904
2012	698	(32)	149	-	117	16.8%	815
2013	2,537	(108)	96	-	(12)	(0.5%)	2,525
2014	6,207	(432)	730	-	298	4.8%	6,505
2015	13,169	(349)	(277)	-	(626)	(4.8%)	12,543
2016	19,129	(351)	(650)	-	(1,001)	(5.2%)	18,128
2017	22,301	(1,747)	742	-	(1,005)	(4.5%)	21,296
2018	3,715	1,570	(892)	-	678	18.3%	4,393
Grand Total	69,891	(1,542)	(6)	-	(1,548)	(2.2%)	68,343

EXHIBIT G

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

RSP **Alberta Non-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	36	-	-	-	-	-	36
2005	5	-	-	-	-	-	5
2006	9	-	-	-	-	-	9
2007	(122)	5	(5)	-	-	-	(122)
2008	72	(3)	3	-	-	-	72
2009	160	(6)	12	-	6	3.8%	166
2010	587	(23)	19	-	(4)	(0.7%)	583
2011	627	(25)	29	-	4	0.6%	631
2012	210	(8)	131	-	123	58.6%	333
2013	1,790	(72)	66	-	(6)	(0.3%)	1,784
2014	5,128	(410)	742	-	332	6.5%	5,460
2015	10,909	(327)	(267)	-	(594)	(5.4%)	10,315
2016	16,061	(321)	(646)	-	(967)	(6.0%)	15,094
2017	18,610	(1,489)	670	-	(819)	(4.4%)	17,791
2018	3,182	1,221	(906)	-	315	9.9%	3,497
Grand Total	57,264	(1,458)	(152)	-	(1,610)	(2.8%)	55,654