



ALBERTA GRID RISK SHARING POOL

NOVEMBER 2017 OPERATIONAL REPORT

ACTUARIAL HIGHLIGHTS

Related Bulletin: [F17-099 Alberta RSPs November 2017 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 GRID

OPERATIONAL REPORT

NOVEMBER 2017

TABLE OF CONTENTS

1	Summary.....	3
1.1	Valuation Schedule (Fiscal Year 2018).....	3
1.2	Appointed Actuary and Hybrid Actuarial Services Model.....	3
1.3	Consideration of Recent Legal Decisions and Changes in Legislation / Regulation.....	3
1.4	Current Provision Summary.....	4
2	Activity During the Month of November 2017.....	5
2.1	Recorded Premium and Claims Activity	5
2.1.a	Actual vs. Projected (AvsP): Earned Premium.....	6
2.1.b	AvsP: Recorded Indemnity & Allowed Claims Expense	7
2.1.c	AvsP: Paid Indemnity & Allowed Claims Expense	9
2.2	Actuarial Provisions	11
3	Ultimate Loss Ratio Matching Method.....	13
4	Calendar Year-to-Date Results.....	13
5	Current Operational Report – Additional Exhibits	13
6	EXHIBITS	14

1 Summary

1.1 Valuation Schedule (Fiscal Year 2018)

The November 2017 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 GRID RISK SHARING POOL FISCAL YEAR 2017 – SCHEDULE OF VALUATIONS			
Valuation Date	Discount Rate (per annum)	Operational Report	Description of Changes
Sep. 30, 2017 (completed)	1.76% mfad: 25 bp	Oct. 2017	updated valuation (roll forward): accident year 2017 loss ratio decreased 0.3 points to 89.9%; discount rate increased by 57 basis points; no change to selected margins for adverse deviations
Dec. 31, 2017	% mfad: bp	Mar. 2018	update valuation:
Mar. 31, 2018	% mfad: bp	May 2018	update valuation (roll forward):
Jun. 30, 2018	% mfad: bp	Aug. 2018	update valuation:
Sep. 30, 2018	% mfad: bp	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 below. There have been no significant changes in these descriptions since last month’s Highlights.

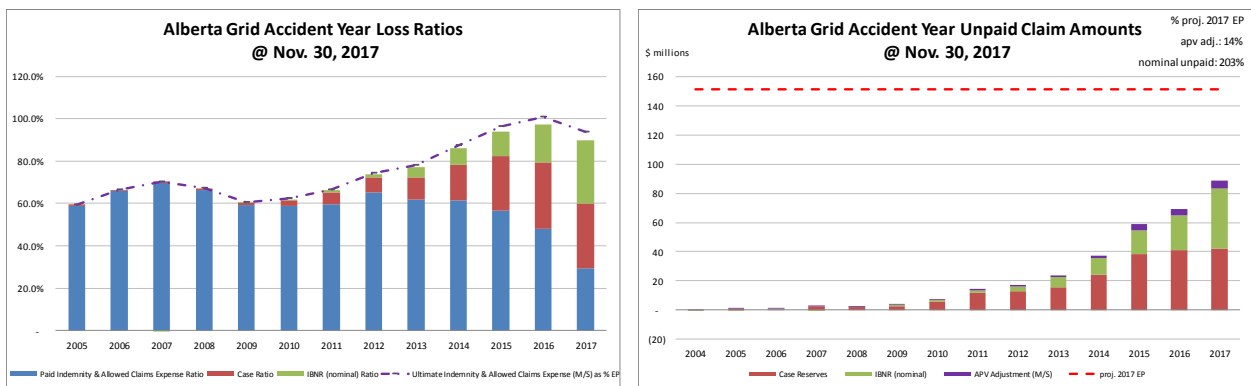
The **Supreme Court of Canada** rendered its judgment on **Saadati v Moorhead (2017 SCC 28, rendered on Jun 2, 2017)**. Saadati was involved in a collision in July of 2005 in British Columbia and sued the at-fault driver for damages. According to the Supreme Court decision, “*The trial judge found that 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 2017 full year earned premium (the red hash-mark line) to provide some perspective.



“M/S” refers to “Member Statement” values – that is, actuarial present value adjustments at the selected discount rate.

The current actuarial present value adjustments balance (\$20.5 million – see table at the top of the next page) represents 14% of the earned premium projected for the full year 2017 (see the upper right corner of the right chart above). If our current estimates of the nominal unpaid amounts prove

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.

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

claim liabilities (\$000s)		
	amt	%
case	199,930	61.1%
ibnr	106,636	32.6%
M/S apv adjust.	20,498	6.3%
M/S total	327,064	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 61% of the IBNR balance relates to accident years 2016 and 2017 (see Exhibit B). Approximately 85% of the M/S

total claim liabilities are related to accident years 2013-2017 inclusive (i.e. the most recent 5 accident years), and approximately 1% is related to accident years 2007 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	93,071	108.9%	claim	306,566	74.3%
prem def/(dpac)	(12,370)	(14.5%)	premium	80,701	19.6%
M/S apv adjust.	4,788	5.6%	M/S apv adjust.	25,286	6.1%
M/S total	85,489	100.0%	M/S total	412,553	100.0%

2 Activity During the Month of November 2017

2.1 Recorded Premium and Claims Activity

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

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

Accident Year	Earned Premium		Paid Indemnity & Allowed Claims Expense		Case increase / (decrease)		Recorded increase / (decrease)	
	Actual	Actual less Projected	Actual	Actual less Projected	Actual	Actual less Projected	Actual	Actual less Projected
Prior	0	0	5,003	509	(4,976)	(1,785)	27	(1,276)
2015	(6)	(6)	1,456	334	(518)	429	938	763
2016	(42)	(42)	1,252	(66)	(444)	137	808	71
2017	12,949	(356)	4,945	(236)	4,422	144	9,367	(91)
TOTAL	12,901	(404)	12,656	541	(1,517)	(1,075)	11,139	(534)

(Recorded transaction amounts exclude IBNR & other actuarial provisions)

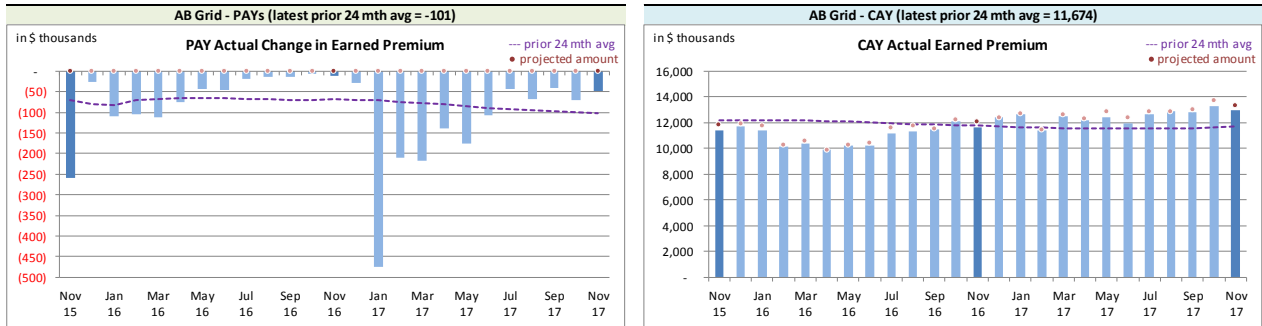
Claims transaction activity is generally volatile and changes from one month to the next are anticipated due to this natural "process variance" (i.e. random variation). Each month, the projection variances are reviewed for signs of projection bias and to identify potential ways to reduce the level of 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 Grid RSP Actual Earned Premium by Calendar Month

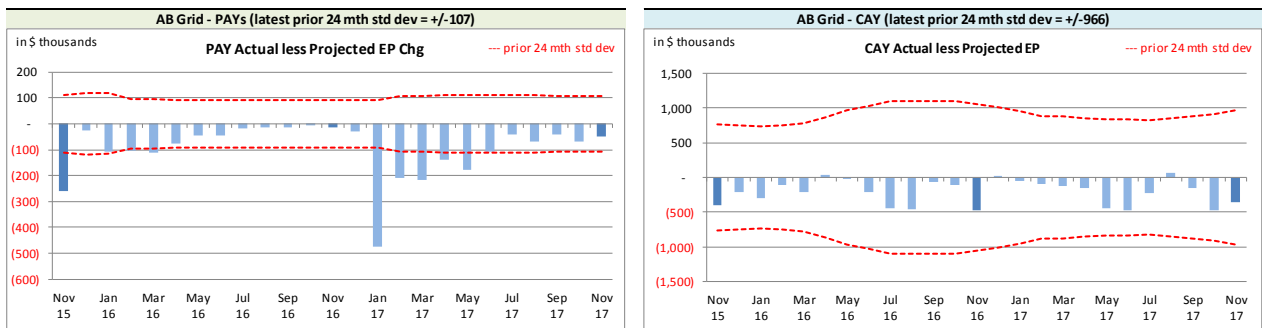


Earned premium changes during a given calendar month in relation to prior accident years tend to be at modest levels, although relatively high levels seem to occur at the beginning of each year.

We have noted and have investigated the unusually high level of PAYS earned premium activity earlier in 2017, particularly with respect to one member and management is satisfied the transactions were appropriate.

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



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)	(101)	11,674
std dev	107	966
A-P <> std dev	8	-
% <> std dev	32.0%	0.0%
norm <> std dev	31.7%	31.7%

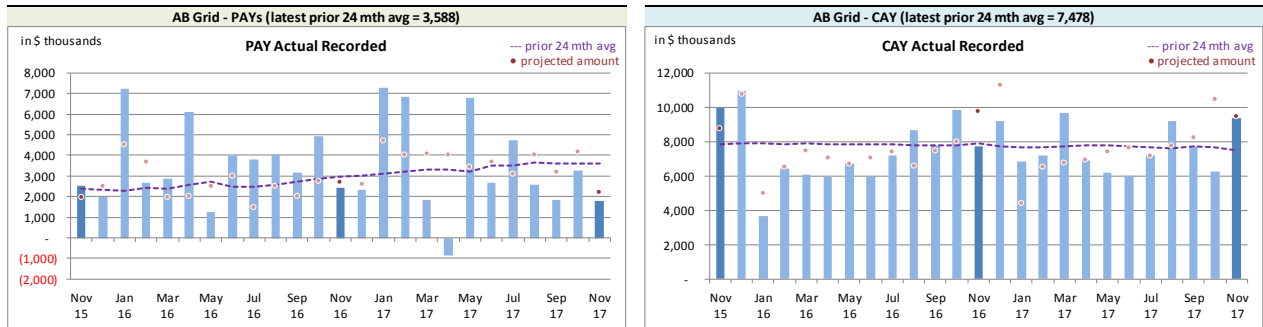
We project **earned premium** changes from known unearned premium and projected written premium levels, but upload the total projections as current accident year (CAY). This process has generated prior accident years’ (PAYs) bias⁵, with actuals generally lower than projected. However, the magnitude is not high relative to monthly

premium. In addition to the PAYs’ bias, the CAY has also shown bias, with actuals being generally lower than projected. Starting with the August 2016 projections, we have modified our projections processes in an attempt to account for CAY bias. Over time, we may consider other projection approaches to narrow monthly variance levels further, but it is not currently deemed a priority.

2.1.b AvsP: Recorded Indemnity & Allowed Claims Expense

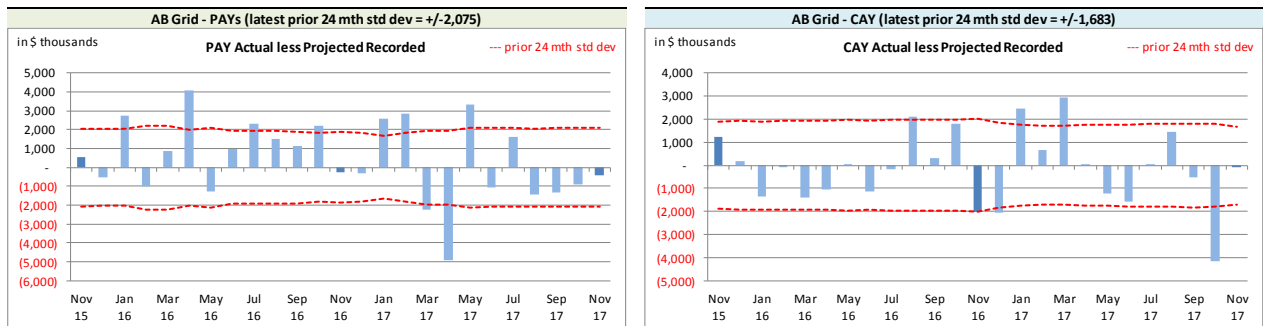
The charts immediately below show actual **recorded** activity (**paid** and case reserve changes), in each of the most recent 25 calendar months, along with a “prior 24-month average” to show how each month’s actual compares with the average amount of the preceding 24 calendar months.

Alberta Grid RSP Actual Recorded by Calendar Month



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

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



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

On Latest \$ thousands		
Recorded	PAYs	CAY
Mthly Avg Recorded (prior 24 mths)	3,588	7,478
std dev	2,075	1,683
A-P <> std dev	9	6
% <> std dev	36.0%	24.0%
norm <> std dev	31.7%	31.7%

With respect to **recorded** indemnity & allowed claims expense activity, 36% of the prior accident years' (PAYs) variances (left chart at the bottom of the previous page) over the last 25 months have fallen outside of one standard deviation of the actual **recorded** amounts, suggesting the projection process has performed

no better than simply projecting from the prior 24-month average. From the end of 2015 until the end of 2016 there may have been evidence of bias in the projections with actuals being higher than projections. A similar pattern was not evident in the **paid** activity where actuals have generally been lower than projections over the same timeframe, suggesting there may be changes in case reserve activity. We have not identified 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 the bottom of the previous page), have been greater than one standard deviation 24% of the time, which suggests that the projection process has performed better than simply projecting the most recent prior 24-month average.

We note that there may be a change in the levels of CAY **recorded** and **paid** activity relative to year-to-date **earned premium**, as evidenced by the average of monthly ratios over the past several years shown in the tables immediately below. These tables show, in each row, the average monthly ratio for each calendar year. That is, each row in the left table (as at Dec) provides the average of the 12 monthly-ratios (i.e. Jan, Feb, ... Dec) for that row's calendar year, whereas each row in the right table (as at November) provides the average of the 11 monthly ratios (i.e. Jan-Nov) for that row's calendar year.

CAY avg of mthly ratios for yr

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

CAY avg of mthly ratios for yr

as at	Rec'd	yr-on-yr chg	Paid	yr-on-yr chg
Nov 2009	19.4%		7.3%	
Nov 2010	24.5%	5.1%	8.2%	0.9%
Nov 2011	12.0%	(12.5%)	5.2%	(3.0%)
Nov 2012	11.9%	(0.1%)	4.8%	(0.4%)
Nov 2013	12.4%	0.5%	5.3%	0.5%
Nov 2014	14.3%	1.9%	6.1%	0.8%
Nov 2015	15.0%	0.7%	6.7%	0.6%
Nov 2016	16.5%	1.5%	7.9%	1.2%
Nov 2017	15.4%	(1.1%)	7.9%	0.0%

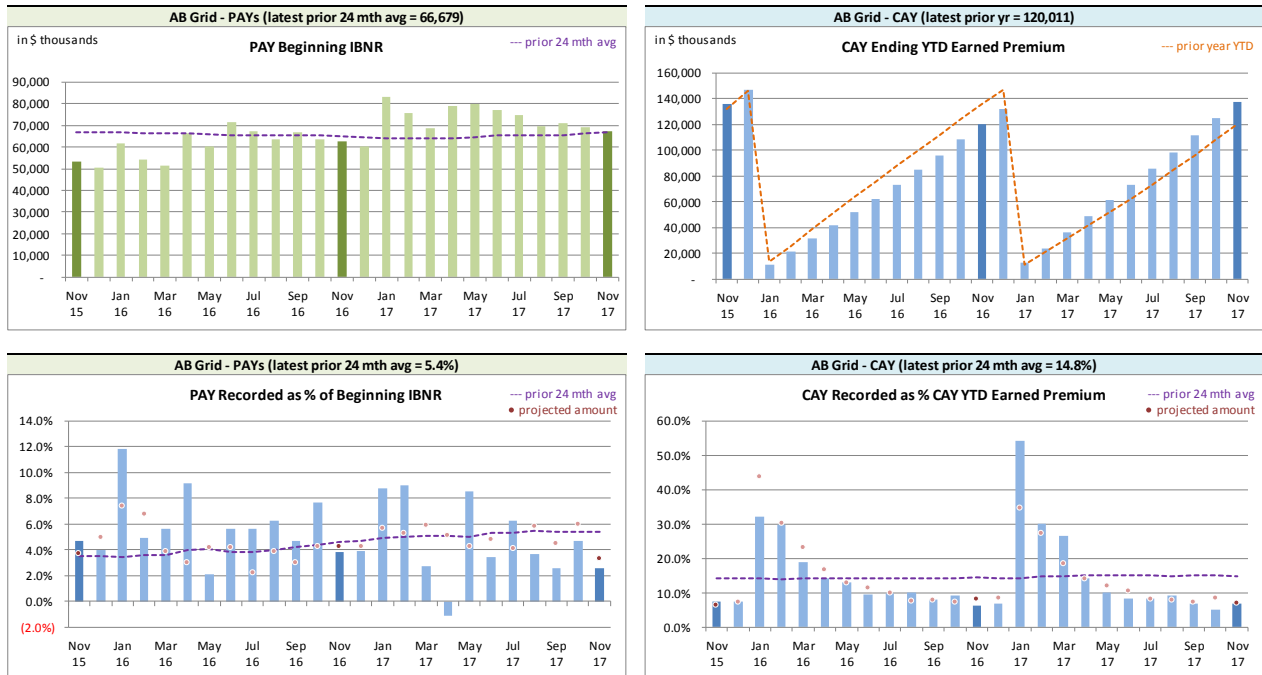
Both **recorded** and **paid** ratios for Dec. 2016 relative to Dec. 2009 have increased at an annual rate of almost 3% over and above any premium rate level increases. At this point, we are only monitoring, but the valuation team has been advised and are taking this information into consideration. Further, while the average of the 12 monthly ratios at December for 2016 was down from 2015, they were still the second highest ratios overall, and the 11-month average ratios for calendar year 2017 are at the second highest level since 2010 in the November table for **recorded** and highest level since 2010 for **paid**.

The method for establishing IBNR adjusts automatically for changes in **earned premium** and

recorded claims activity level (see sections 2.2 and 3).

We have included, for reference, additional charts 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 influence⁶ 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).

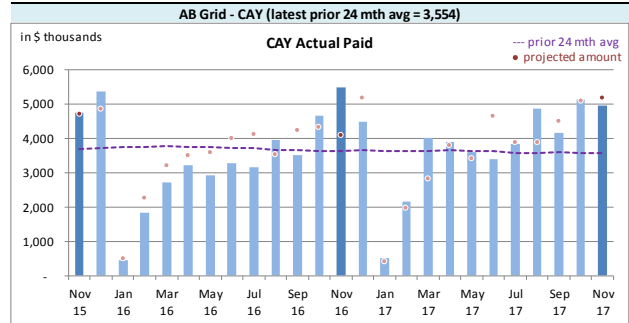
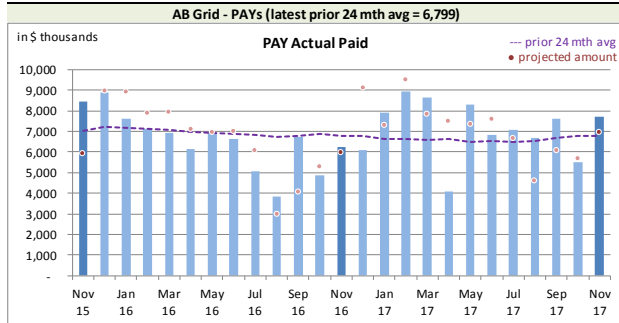
2.1.c AvsP: Paid Indemnity & Allowed Claims Expense

The charts at the top of the next page show actual **paid** activity in each of the most recent

⁶Our 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.

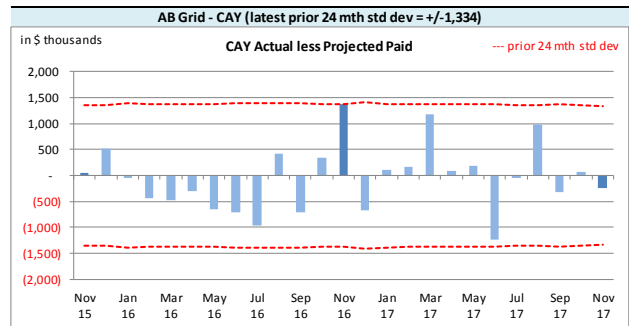
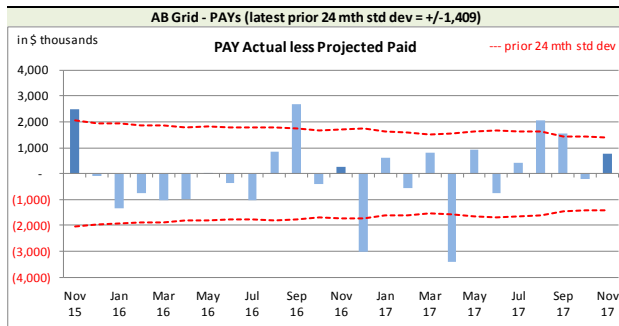
25 calendar months, along with a “prior 24-month average” to show how each month’s actual compares with the average amount of the preceding 24 calendar months.

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



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

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



On Latest \$ thousands			
	Paid	PAYS	CAY
Mthly Avg Paid (prior 24 mths)	6,799	6,799	3,554
std dev	1,409	1,409	1,334
A-P <> std dev	6	6	-
% <> std dev	24.0%	24.0%	0.0%
norm <> std dev	31.7%	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 24% of the time, a lower percent than suggested by a normal distribution, suggesting the projection process has performed better than simply

projecting from the preceding 24-month average.

The current accident year (CAY) **paid** variances (right chart above) have **not** fallen outside one standard deviation of the overall period, suggesting the projection process has performed better than simply projecting from the preceding 24-month average.

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

Alberta Grid RSP Levels that influence⁷ 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 IBNR⁸, 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 November 2017 Operational Report and the

⁷Our 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.

⁸For ease of discussion, “IBNR” is used in place of “provisions for incurred but not recorded (IBNR) and development”.

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

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

Table 02

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	25,310	1,278	(4,217)	20	10,569	(54)	31,662	1,244
2015	16,527	(768)	(2,732)	17	6,870	(42)	20,665	(793)
2016	23,730	(111)	(3,554)	(1)	8,089	3	28,265	(109)
2017	41,069	(229)	(4,413)	4	9,886	(10)	46,542	(235)
TOTAL	106,636	170	(14,916)	40	35,414	(103)	127,134	107

The IBNR provision is \$0.2 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.

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

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

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

The table below summarizes the variances in the provisions for deferred policy acquisition cost asset included in the November 2017 Operational Report and the one-month projections from last month's Report. This RSP is in a deferred policy acquisition cost asset position (shown as a negative amount) prior to and after actuarial present value adjustments. Actuarial present value adjustments decrease the asset value as the adjustments increase the expected future policy obligations (costs) associated with the unearned premium. The variances noted are mainly driven by the unearned premium variance.

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:	(12,370)	29	4,788	(4)	(7,582)	25
balance as % unearned premium:	(13.3%)	-	5.1%	0.1%	(8.1%)	0.1%
actual unearned premium:	93,071					
less projected:	(121)					

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 loss⁹ 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 expenses¹⁰, 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 90.9% rather than 89.9% (the valuation ultimate ratio for accident year 2017), as the calendar year-to-date earned premium includes prior accident year earned premium adjustments. (Note that the ratios in this table may differ slightly from those shown in the Alberta Grid RSP Summary of Operations due to rounding.)

Alberta Grid RSP Calendar Year-to-Date Indemnity & Allowed Claims Expense Summary (\$ thousands)

Table 04	YTD Nominal Values		YTD actuarial present value adjustment		YTD Total		Change from Prior Month YTD	
	Amount	% EP	Amount	% EP	Amount	% EP	Amount	LR pts
PAYs	21,042	15.5%	(14,078)	(10.3%)	6,964	5.1%	(555)	(1.0%)
CAY	123,698	90.9%	5,473	4.0%	129,171	95.0%	12,082	(0.1%)
TOTAL	144,740	106.4%	(8,605)	(6.3%)	136,135	100.1%	11,527	(1.1%)

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

The prior accident years (PAYs) changes from last month are due to the release of the actuarial present value adjustments with claims payments and due to 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.

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.

5 Current Operational Report – Additional Exhibits

Section 6 provides exhibits pertaining to the actuarial provisions reflected in the current month’s Operational Report.

⁹“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).

¹⁰Allowed claims expenses are first party legal and other expenses as listed in the RSP Claims Guide. Claims expenses paid through the member company expense allowance are NOT included in this analysis.

IBNR (including actuarial present value adjustments) presented in section 6, Exhibit A, were derived on a discounted basis, and therefore reflect the time value of money and include an explicit provision for adverse deviations in accordance with accepted actuarial practice in Canada.

IBNR presented in section 6, Exhibit B, does NOT include any actuarial present value adjustments. The “Total IBNR” from this exhibit is shown in the Operational Report as “Undiscounted IBNR”.

The ultimate loss ratios presented in section 6, Exhibit B, refer to the estimates derived on the basis of various actuarial methodologies applied to the experience of the Alberta Grid Risk Sharing Pool for the purposes of the most recent quarterly valuation. As discussed in section 3, IBNR reflected in the current month’s Operational Report was derived as the difference between the estimated ultimate for the claims amount (i.e. earned premium x ultimate loss ratio) and the associated current recorded amounts (life-to-date payments plus current case reserves).

6 EXHIBITS

The exhibits listed below are provided on the pages that follow:

- EXHIBIT A IBNR for Member Sharing – includes Actuarial Present Value Adjustments
- EXHIBIT B IBNR
- EXHIBIT C Premium Liabilities
- EXHIBIT D Projected Year-end Policy Liabilities
- EXHIBIT E Discount Rate & Margins for Adverse Deviations
- EXHIBIT F Interest Rate Sensitivity
- EXHIBIT G Components of IBNR Change During Month

EXHIBIT A

IBNR for Member Sharing – includes Actuarial Present Value Adjustments

TABLE EXHIBIT A

		Amounts in \$000s				
IBNR + M/S actuarial present value adjustments	Accident Year	Actual Oct. 2017	Actual Nov. 2017	Projected Dec. 2017	Projected Jan. 2018	Projected Dec. 2018
	2004	(72)	(72)	(71)	(70)	(41)
	2005	35	37	34	56	37
	2006	160	165	162	161	99
	2007	257	(59)	(66)	(71)	(32)
	2008	160	160	152	153	102
	2009	1,187	1,150	1,128	1,126	689
	2010	1,578	1,769	1,732	1,733	1,062
	2011	2,741	2,673	2,604	2,484	1,528
discount rate	2012	4,558	4,351	4,256	4,151	2,541
1.76%	2013	8,036	8,298	7,898	7,787	4,740
	2014	13,357	13,190	12,794	12,618	7,815
interest rate margin	2015	21,719	20,665	20,251	20,132	13,992
25 basis pts	2016	29,203	28,265	27,463	27,016	20,750
	2017	43,827	46,542	49,440	43,699	33,962
	2018	-	-	-	7,922	50,993
	TOTAL	126,746	127,134	127,777	128,897	138,237
	Change		388	643	1,120	

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 Oct. 2017	Actual Nov. 2017	Projected Dec. 2017	Projected Jan. 2018	Projected Dec. 2018
	51.6%	2004	(80)	(80)	(79)	(77)	(46)
	59.3%	2005	(33)	(31)	(31)	(30)	(19)
	66.4%	2006	104	110	109	107	63
	70.2%	2007	65	(224)	(222)	(218)	(130)
	67.1%	2008	8	8	8	8	7
	60.6%	2009	957	934	925	906	544
	62.0%	2010	1,104	1,366	1,352	1,325	793
	66.2%	2011	1,881	1,826	1,808	1,772	1,060
	73.9%	2012	3,443	3,311	3,278	3,212	1,922
	77.1%	2013	6,567	6,904	6,559	6,428	3,845
	86.0%	2014	11,319	11,186	10,850	10,524	6,239
	93.7%	2015	17,470	16,527	16,196	15,872	10,547
	97.4%	2016	24,578	23,730	23,018	22,327	16,799
	89.9%	2017	38,794	41,069	43,536	38,312	30,032
	85.8%	2018	-	-	-	7,173	44,331
		TOTAL	106,177	106,636	107,307	107,641	115,987
		Change		459	671	334	

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

EXHIBIT C

Premium Liabilities

TABLE EXHIBIT C

	Amounts in \$000s				
	Actual Oct. 2017	Actual Nov. 2017	Projected Dec. 2017	Projected Jan. 2018	Projected Dec. 2018
Premium Liabilities					
(1) unearned premium (UP)	91,739	93,071	91,832	87,387	89,567
FOR MEMBER SHARING					
(2) expected future costs ratio {% of (1)}	92.4%	91.9%	91.2%	91.2%	92.9%
(3) expected future costs {(1) x (2)}	84,778	85,489	83,757	79,733	83,233
(4) premium deficiency / (deferred policy acquisition cost)	(6,961)	(7,582)	(8,075)	(7,654)	(6,334)
Excluding Actuarial Present Value Adjustments					
(5) expected future costs ratio {% of (1)}	87.2%	86.7%	86.1%	86.1%	87.7%
(6) expected future costs {(1) x (5)}	80,031	80,701	79,068	75,271	78,574
(7) premium deficiency / (deferred policy acquisition cost)	(11,708)	(12,370)	(12,764)	(12,116)	(10,993)

EXHIBIT D
Projected Year-end Policy Liabilities

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

Alberta Grid ending 2017		Projected Balances as at Dec. 31, 2017 (\$000s)									
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	4	(79)	(75)	-	-	8	-	8	8	(67)	
2005	906	(31)	875	(25)	4	88	(2)	86	65	940	
2006	637	109	746	(23)	3	75	(2)	73	53	799	
2007	2,373	(222)	2,151	(62)	9	215	(6)	209	156	2,307	
2008	2,038	8	2,046	(63)	8	205	(6)	199	144	2,190	
2009	2,287	925	3,212	(122)	16	321	(12)	309	203	3,415	
2010	5,239	1,352	6,591	(290)	40	659	(29)	630	380	6,971	
2011	10,803	1,808	12,611	(492)	76	1,261	(49)	1,212	796	13,407	
2012	11,918	3,278	15,196	(562)	76	1,520	(56)	1,464	978	16,174	
2013	15,006	6,559	21,565	(841)	108	2,156	(84)	2,072	1,339	22,904	
2014	23,560	10,850	34,410	(1,548)	206	3,441	(155)	3,286	1,944	36,354	
2015	37,342	16,196	53,538	(2,677)	375	6,692	(335)	6,357	4,055	57,593	
2016	40,311	23,018	63,329	(3,483)	507	7,853	(432)	7,421	4,445	67,774	
PAYs (sub-total):	152,424	63,771	216,195	(10,188)	1,428	24,494	(1,168)	23,326	14,566	230,761	
CAY (2017)	46,257	43,536	89,793	(4,759)	629	10,596	(562)	10,034	5,904	95,697	
claims liabilities:	198,681	107,307	305,988	(14,947)	2,057	35,090	(1,730)	33,360	20,470	326,458	
	Unearned Premium	Premium Deficiency / (DPAC)	Total Provision	discount	investment PfAD	nominal development PfAD	development PfAD discount	development PfAD	Total apvs	TOTAL*	
premium liabilities:	91,832	(12,764)	79,068	(3,468)	473	8,038	(354)	7,684	4,689	83,757	
*Total may not be sum of parts, as apvs apply to future costs within UPR											
policy liabilities:			385,056	(18,415)	2,530	43,128	(2,084)	41,044	25,159	410,215	

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%	9.5%	10.0%
2011	10.0%	10.0%	10.0%	10.0%
2012	10.0%	10.0%	9.9%	10.0%
2013	10.0%	10.0%	10.0%	10.0%
2014	10.0%	10.0%	10.0%	10.0%
2015	12.5%	10.0%	12.5%	12.5%
2016	12.4%	10.0%	12.5%	12.4%
2017	12.1%	10.0%	6.6%	11.8%
2018	11.7%	10.0%	5.1%	10.2%
prem liab	11.7%	10.0%	5.1%	10.2%

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 also to Dec. 31, 2017, but are based on more up-to-date information). We have included the most recent valuation selection (1.76%), the prior valuation assumption (1.19%) and the prior fiscal year end valuation assumption (0.54%) for comparative purposes. A 25 basis point margin for investment return adverse deviation is used in all scenarios presented.

\$ Format: \$000s

AY	Actuarial Present Value of Provisions at Various Discount Rates - Dec. 31, 2017 projected Unpaid							
	0.76%	1.26%	1.76%	2.26%	2.76%	3.26%	1.19%	0.54%
2004	-	-	-	-	-	-	-	-
2005	1,013	1,005	997	989	981	973	1,006	1,017
2006	816	808	801	794	787	781	809	819
2007	2,643	2,621	2,600	2,579	2,558	2,538	2,624	2,652
2008	2,171	2,151	2,132	2,114	2,096	2,078	2,154	2,179
2009	4,192	4,145	4,101	4,056	4,012	3,970	4,152	4,213
2010	7,825	7,725	7,630	7,536	7,443	7,354	7,740	7,869
2011	13,101	12,954	12,812	12,673	12,538	12,406	12,976	13,167
2012	18,028	17,833	17,646	17,461	17,282	17,109	17,861	18,114
2013	23,977	23,704	23,441	23,181	22,930	22,686	23,742	24,099
2014	37,300	36,812	36,346	35,886	35,442	35,007	36,882	37,518
2016	69,422	68,308	67,244	66,204	65,196	64,219	68,465	69,921
2017	98,708	97,174	95,711	94,274	92,883	91,547	97,391	99,400
Total	338,311	333,482	328,875	324,338	319,946	315,703	334,168	340,470
	curr - 100 bp	curr - 50 bp	curr val assumption	curr + 50bp	curr + 100bp	curr + 150bp	prior val assumption	prior fyr end assumption

AY	Dollar Impact Relative to Valuation Assumption							
	0.76%	1.26%	1.76%	2.26%	2.76%	3.26%	1.19%	0.54%
Total	9,436	4,607	-	(4,537)	(8,929)	(13,172)	5,293	11,595
	curr - 100 bp	curr - 50 bp	curr val assumption	curr + 50bp	curr + 100bp	curr + 150bp	prior val assumption	prior fyr end assumption

AY	Percentage Impact Relative to Valuation Assumption							
	0.76%	1.26%	1.76%	2.26%	2.76%	3.26%	1.19%	0.54%
2004	-	-	-	-	-	-	-	-
2005	1.6%	0.8%	-	(0.8%)	(1.6%)	(2.4%)	0.9%	2.0%
2006	1.9%	0.9%	-	(0.9%)	(1.7%)	(2.5%)	1.0%	2.2%
2007	1.7%	0.8%	-	(0.8%)	(1.6%)	(2.4%)	0.9%	2.0%
2008	1.8%	0.9%	-	(0.8%)	(1.7%)	(2.5%)	1.0%	2.2%
2009	2.2%	1.1%	-	(1.1%)	(2.2%)	(3.2%)	1.2%	2.7%
2010	2.6%	1.2%	-	(1.2%)	(2.5%)	(3.6%)	1.4%	3.1%
2011	2.3%	1.1%	-	(1.1%)	(2.1%)	(3.2%)	1.3%	2.8%
2012	2.2%	1.1%	-	(1.0%)	(2.1%)	(3.0%)	1.2%	2.7%
2013	2.3%	1.1%	-	(1.1%)	(2.2%)	(3.2%)	1.3%	2.8%
2014	2.6%	1.3%	-	(1.3%)	(2.5%)	(3.7%)	1.5%	3.2%
2016	3.2%	1.6%	-	(1.5%)	(3.0%)	(4.5%)	1.8%	4.0%
2017	3.1%	1.5%	-	(1.5%)	(3.0%)	(4.4%)	1.8%	3.9%
Total	2.9%	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 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	(72)	6	(6)	-	-	-	(72)	
2005	35	(1)	3	-	2	5.7%	37	
2006	160	(10)	15	-	5	3.1%	165	
2007	257	(15)	(301)	-	(316)	(123.0%)	(59)	
2008	160	(8)	8	-	-	-	160	
2009	1,187	(78)	41	-	(37)	(3.1%)	1,150	
2010	1,578	(100)	291	-	191	12.1%	1,769	
2011	2,741	(175)	107	-	(68)	(2.5%)	2,673	
2012	4,558	(297)	90	-	(207)	(4.5%)	4,351	
2013	8,036	(387)	649	-	262	3.3%	8,298	
2014	13,357	(514)	347	-	(167)	(1.3%)	13,190	
2015	21,719	(261)	(793)	-	(1,054)	(4.9%)	20,665	
2016	29,203	(829)	(109)	-	(938)	(3.2%)	28,265	
2017	43,827	2,950	(235)	-	2,715	6.2%	46,542	
Grand Total	126,746	281	107	-	388	0.3%	127,134	

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)	6	(6)	-	-	-	(80)
2005	(33)	2	-	-	2	(6.1%)	(31)
2006	104	(7)	13	-	6	5.8%	110
2007	65	(5)	(284)	-	(289)	(444.6%)	(224)
2008	8	(1)	1	-	-	-	8
2009	957	(67)	44	-	(23)	(2.4%)	934
2010	1,104	(77)	339	-	262	23.7%	1,366
2011	1,881	(132)	77	-	(55)	(2.9%)	1,826
2012	3,443	(241)	109	-	(132)	(3.8%)	3,311
2013	6,567	(328)	665	-	337	5.1%	6,904
2014	11,319	(453)	320	-	(133)	(1.2%)	11,186
2015	17,470	(175)	(768)	-	(943)	(5.4%)	16,527
2016	24,578	(737)	(111)	-	(848)	(3.5%)	23,730
2017	38,794	2,504	(229)	-	2,275	5.9%	41,069
Grand Total	106,177	289	170	-	459	0.4%	106,636