



ALBERTA GRID RISK SHARING POOL

JANUARY 2017 OPERATIONAL REPORT

ACTUARIAL HIGHLIGHTS

Related Bulletin: [F17-011 Alberta RSPs January 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 Norm Seeney, Vice President, Finance & Member Services at (416) 644-4914.

ACTUARIAL HIGHLIGHTS

RSP ALBERTA GRID

OPERATIONAL REPORT

JANUARY 2017

TABLE OF CONTENTS

1	Summary.....	3
1.1	Valuation Schedule (Fiscal Year 2017).....	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 January 2017	5
2.1	Recorded Premium and Claims Activity	5
2.1.a	Actual vs. Projected (AvsP): Earned Premium.....	5
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.....	12
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 2017)

The January 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 2017.

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

Under the proposed schedule for fiscal year 2017, the “off-half” valuation quarters ending March 31, 2017 and September 30, 2017 would not reflect a full valuation update of assumptions, but would rather “roll-forward” key assumptions from the previous valuation.

1.2 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.

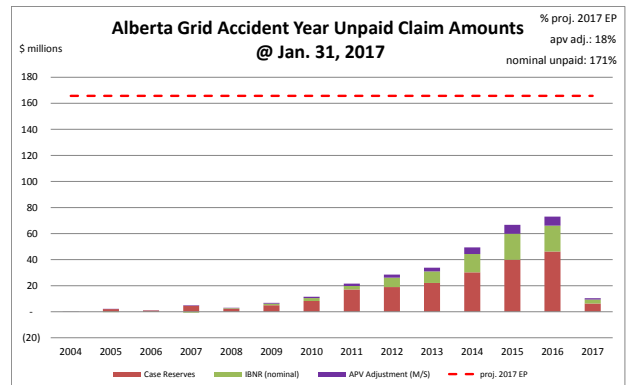
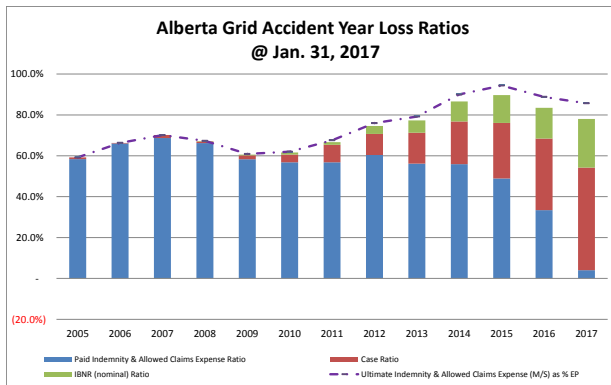
1.3 Consideration of Recent Legal Decisions and Changes in Legislation / Regulation

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.

Alberta Bill 39 (Enhancing Consumer Protection in Auto Insurance Act) was introduced into the Legislature by the Minister of Finance on November 6, 2013, and received Royal Assent on December 11, 2013. Bill 39 includes various amendments and provisions such as allowing for both mandatory and optional auto insurance premiums to be regulated by the independent Automobile Insurance Rate Board (AIRB), the introduction of an Insurer file and approve system for premium adjustments instead of an annual industry-wide rate adjustment, improved access to health care after a collision and strengthened Insurance Company solvency requirements. No specific adjustments have been made to the most recent valuation (September 30, 2016) assumptions based on Bill 39.

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 (\$29.4 million – see table immediately below) represents 18% of the earned premium projected for the full year 2017 (see the upper right corner of the right chart above). If our current estimates of the nominal unpaid amounts prove to match actual claims payments, the actuarial present value adjustments will be released into the net operating result over future periods.

claim liabilities (\$000s)	amt	%
case	204,024	65.4%
ibnr	78,542	25.2%
M/S apv adjust.	29,351	9.4%
M/S total	311,917	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 29% of the IBNR balance relates to accident years 2016 and 2017 (see Exhibit B). Approximately 75% of the M/S

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

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.

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	76,486	117.2%	claim	282,566	74.9%
prem def/(dpac)	(16,677)	(25.6%)	premium	59,809	15.9%
M/S apv adjust.	5,459	8.4%	M/S apv adjust.	34,810	9.2%
M/S total	65,268	100.0%	M/S total	377,185	100.0%

2 Activity During the Month of January 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	(1)	(1)	2,757	(1,296)	(1,281)	1,468	1,476	172
2015	(4)	(4)	749	(1,071)	61	632	810	(439)
2016	(469)	(469)	4,413	2,995	599	(133)	5,012	2,862
2017	12,663	(47)	505	109	6,351	2,341	6,856	2,450
TOTAL	12,189	(521)	8,425	738	5,730	4,308	14,154	5,045

(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.

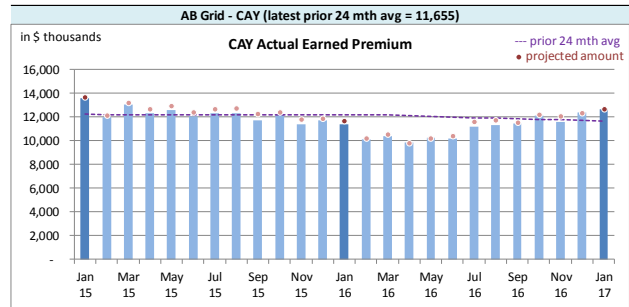
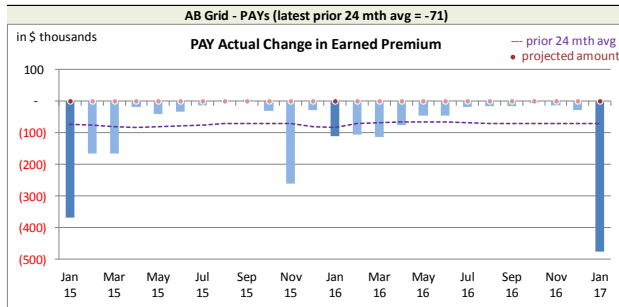
2.1.a Actual vs. Projected (AvsP): Earned Premium

The charts at the top of the next page show actual **earned premium**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.

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

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.

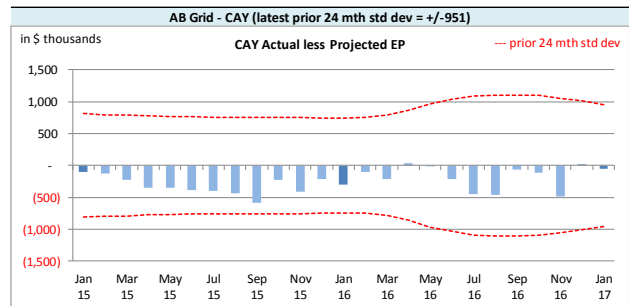
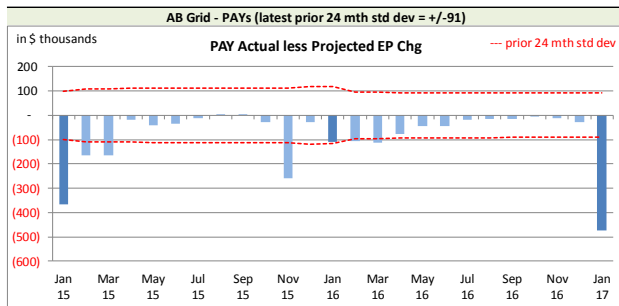
Alberta Grid RSP Actual Earned Premium by Calendar Month



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)	(71)	11,655
std dev	91	951
A-P <> std dev	7	-
% <> std dev	28.0%	0.0%
norm <> std dev	31.7%	31.7%

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

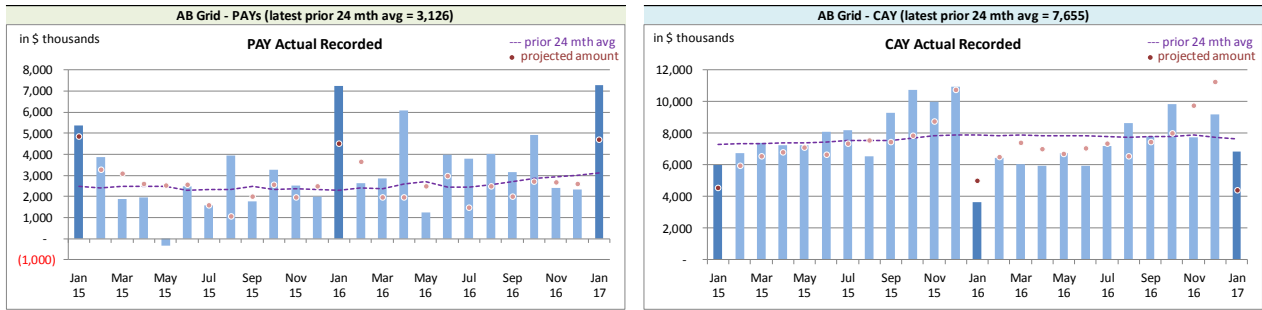
monthly premium, and the variances are within the prior 24-month standard deviation more often than indicated by a normal distribution (see table above). In addition to the prior accident years' bias, the CAY has also shown bias, with actuals being generally lower than projected. Starting with the August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

⁵The 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

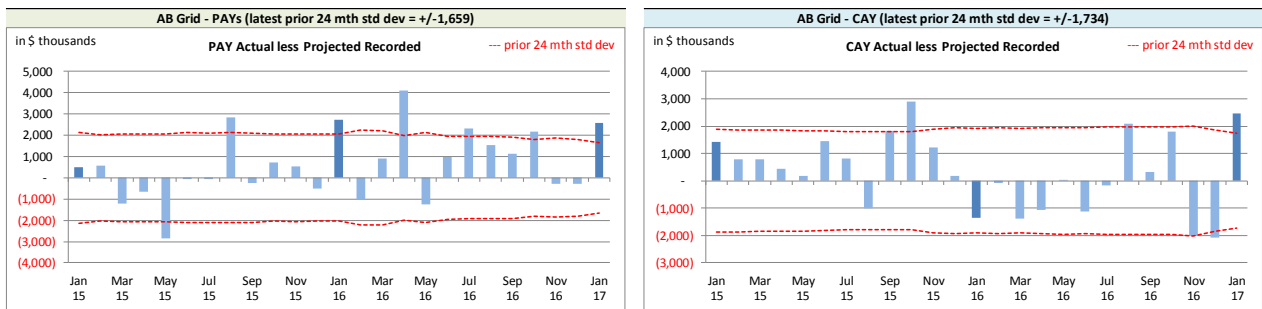
Actual **recorded** activity (**paid** and case reserve changes) over the last 25-month period are shown in the charts immediately below, including the “prior 24-month average” level.

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)	3,126	7,655	
std dev	1,659	1,734	
A-P <> std dev	7	6	
% <> std dev	28.0%	24.0%	
norm <> std dev	31.7%	31.7%	

With respect to **recorded** indemnity & allowed claims expense activity, 28% 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 not much better than

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

The 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 24%, 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.

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

We note that there may be a change in the levels of CAY **recorded** and **paid** activity relative to year-to-date **earned premium**, as evidenced by the average of monthly ratios over the past several years, particularly between 2013 and 2014 (table shows the average monthly ratios for January to December for each 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%)

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.

This month's ratios again were high when compared to the past 8 months of January (see table below), although there is more volatility for the month of January due to lower levels of year-to-date earned premium.

CAY avg of mthly ratios for yr

as at	Rec'd	yr-on-yr chg	Paid	yr-on-yr chg
Jan 2009	35.3%		3.7%	
Jan 2010	26.3%	(9.0%)	3.8%	0.1%
Jan 2011	36.4%	10.1%	4.3%	0.5%
Jan 2012	34.3%	(2.1%)	3.3%	(1.0%)
Jan 2013	40.1%	5.8%	3.4%	0.1%
Jan 2014	33.8%	(6.3%)	3.2%	(0.2%)
Jan 2015	43.9%	10.1%	2.8%	(0.4%)
Jan 2016	32.1%	(11.8%)	4.0%	1.2%
Jan 2017	54.1%	22.0%	4.0%	0.0%

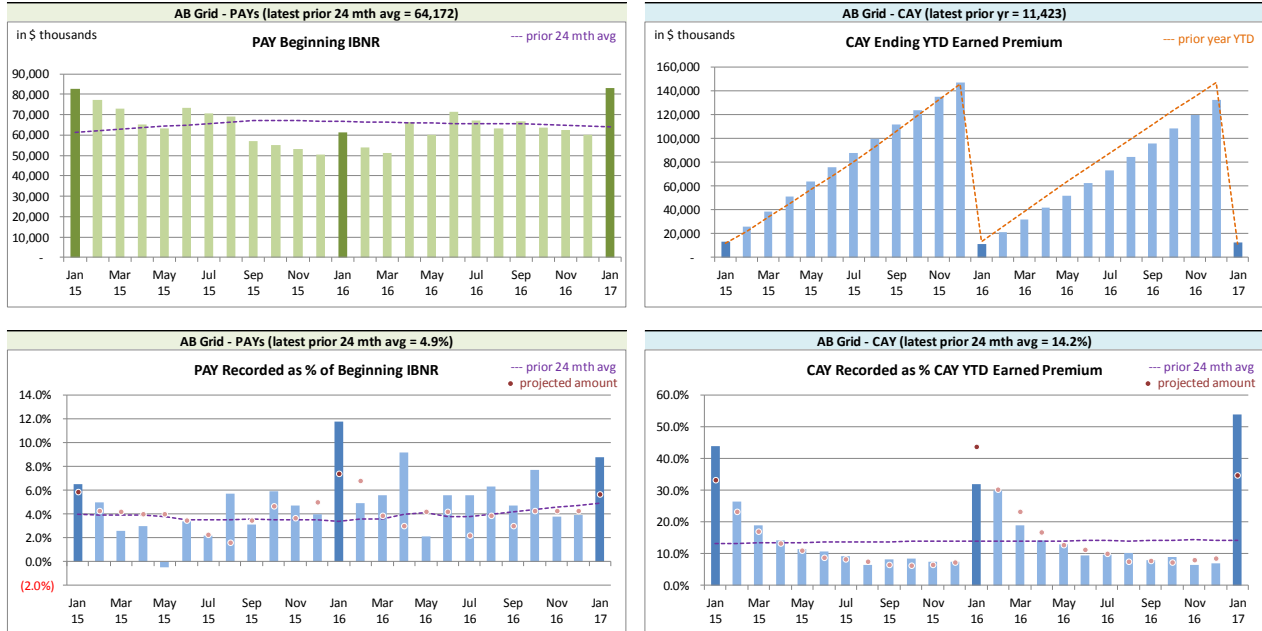
Note that the January 2017 **recorded** ratio at 54.1% is the highest such ratio, by a significant margin, since at least 2009.

The method for establishing IBNR adjusts automatically for changes in **earned premium** and **recorded** claims activity level (see sections 2.2 and 3).

We have included, for reference, additional charts at the top of the next page related to levels influencing **recorded** activity. Note in particular the changes in the level of PAY beginning IBNR

over the months, as a response to valuations and showing up as a beginning IBNR change one month after the valuation is implemented (i.e. April, June, September, and November).

Alberta Grid RSP Levels that 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:

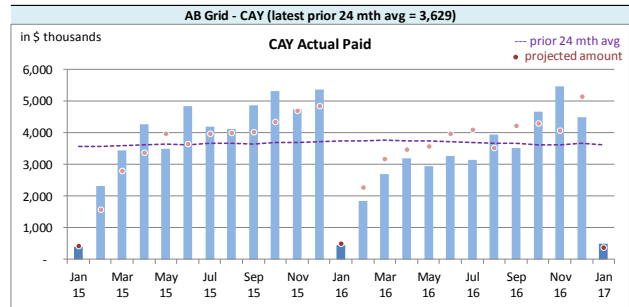
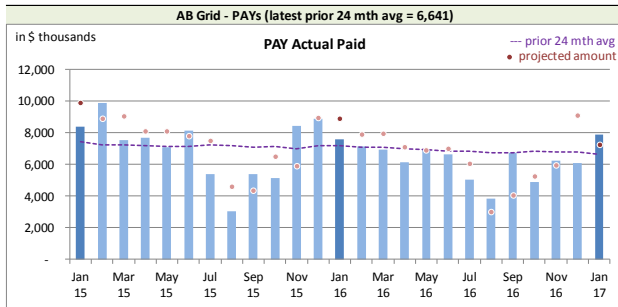
- to offset actual **recorded** activity (through loss ratio matching);
- the annual switchover as a current accident year becomes a prior accident year (occurs in January); and
- when a new valuation is implemented, where the valuation resulted in changes to the selection of prior accident years’ ultimate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

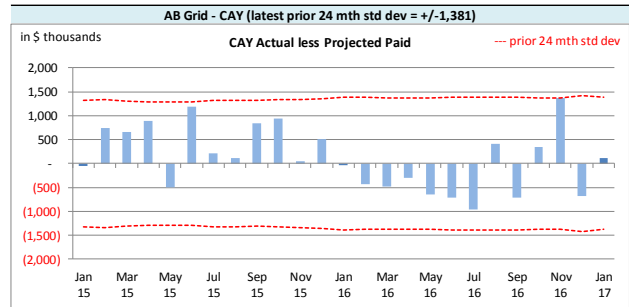
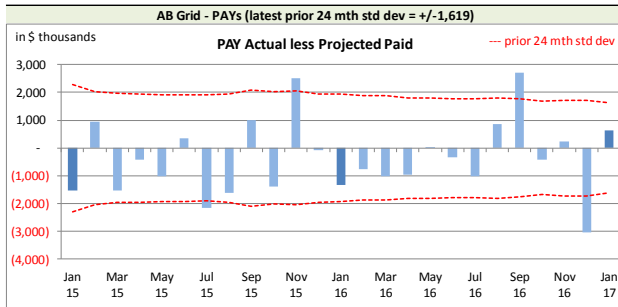
⁶Our recorded activity projections for the prior accident years are based on selected ratios of recorded activity to beginning unpaid balances, whereas the current accident year projections are based on selected ratios of year-to-date IBNR to year-to-date selected ultimate (i.e. selected LR x earned 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.

*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)	6,641	3,629	
std dev	1,619	1,381	
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) indicated bias through 2015 (where actuals tend to be higher than our projections), but efforts to address this may have generated bias the other way. The CAY **paid** variances have **not** fallen outside one standard deviation of the overall period, suggesting the projection process is better than simply projecting from the preceding 24-month average. However, the CAY paid to ytd earned premium ratios as projected have been high in retrospect during 2016 and we are looking into this further.

We have included, for reference, additional charts 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 January 2017 Operational Report and the associated one-month projections from last month’s Report.

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”.

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

Accident Year	IBNR		actuarial present value adjustments				IBNR + actuarial present value adjustments	
	Actual	Actual less Projected	Discount Amount		Provisions for Adverse Deviations		Actual	Actual less Projected
			Actual	Actual less Projected	Actual	Actual less Projected		
Prior	35,643	(172)	(1,912)	(20)	16,510	147	50,241	(45)
2015	19,995	435	(958)	(17)	7,787	138	26,824	556
2016	19,895	(3,254)	(1,190)	61	8,122	(416)	26,827	(3,609)
2017	3,009	(2,486)	(159)	3	1,151	(18)	4,001	(2,501)
TOTAL	78,542	(5,477)	(4,219)	27	33,570	(149)	107,893	(5,599)

The IBNR provision is \$5.5 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 below summarizes the variances in the provisions for deferred policy acquisition cost asset included in the January 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)

	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:	(16,677)	413	5,459	(135)	(11,218)	278
balance as % unearned premium:	(21.8%)	-	7.1%	-	(14.7%)	-
actual unearned premium:	76,486					
less projected:	(1,885)					

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 80.9% rather than 77.9% (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	(396)	(3.2%)	(744)	(6.1%)	(1,140)	(9.4%)	(1,140)	(9.4%)
CAY	9,865	80.9%	992	8.1%	10,857	89.1%	10,857	89.1%
TOTAL	9,469	77.7%	248	2.0%	9,717	79.7%	9,717	79.7%

(“% 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. 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, 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.

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

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.

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 Dec. 2016	Actual Jan. 2017	Projected Feb. 2017	Projected Mar. 2017	Projected Dec. 2017
	2004	(72)	(72)	(72)	(72)	(72)
	2005	44	(116)	(112)	(111)	(93)
	2006	(12)	(12)	(12)	(13)	(14)
	2007	(326)	(342)	(333)	(329)	(272)
	2008	808	823	798	779	610
	2009	1,748	1,739	1,686	1,646	1,287
	2010	2,987	3,249	3,153	3,080	2,412
	2011	4,605	4,431	4,288	4,185	3,261
discount rate	2012	9,409	9,610	9,323	9,112	7,162
0.54%	2013	11,917	11,695	11,343	11,089	8,741
	2014	20,760	19,236	18,493	17,778	14,040
interest rate margin	2015	27,648	26,824	25,385	24,248	18,753
25 basis pts	2016	32,814	26,827	24,958	23,694	16,739
	2017	-	4,001	7,125	13,508	32,763
	TOTAL	112,330	107,893	106,023	108,594	105,317
	Change		(4,437)	(1,870)	2,571	

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 Dec. 2016	Actual Jan. 2017	Projected Feb. 2017	Projected Mar. 2017	Projected Dec. 2017
	51.6%	2004	(80)	(80)	(80)	(80)	(80)
	59.1%	2005	(158)	(293)	(284)	(278)	(220)
	66.3%	2006	(101)	(101)	(98)	(96)	(76)
	70.0%	2007	(692)	(708)	(687)	(673)	(533)
	67.2%	2008	547	560	543	532	422
	60.7%	2009	1,171	1,163	1,128	1,105	874
	61.6%	2010	2,004	2,283	2,215	2,171	1,720
	66.7%	2011	2,756	2,623	2,544	2,493	1,975
	74.7%	2012	6,936	7,215	6,999	6,859	5,431
	77.3%	2013	9,074	8,854	8,588	8,416	6,666
	86.5%	2014	15,662	14,127	13,562	13,020	10,310
	89.7%	2015	20,809	19,995	18,795	17,855	13,287
	83.5%	2016	25,299	19,895	18,303	17,205	11,469
	77.9%	2017	-	3,009	5,394	11,001	24,597
		TOTAL	83,227	78,542	76,922	79,530	75,842
		Change		(4,685)	(1,620)	2,608	

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

EXHIBIT C

Premium Liabilities

TABLE EXHIBIT C

	Amounts in \$000s				
	Actual Dec. 2016	Actual Jan. 2017	Projected Feb. 2017	Projected Mar. 2017	Projected Dec. 2017
Premium Liabilities					
(1) unearned premium (UP)	80,958	76,486	75,488	74,955	78,521
FOR MEMBER SHARING					
(2) expected future costs ratio {% of (1)}	85.3%	85.3%	85.3%	85.4%	86.5%
(3) expected future costs {(1) x (2)}	69,079	65,268	64,426	64,001	67,935
(4) premium deficiency / (deferred policy acquisition cost)	(11,879)	(11,218)	(11,062)	(10,954)	(10,586)
Excluding Actuarial Present Value Adjustments					
(5) expected future costs ratio {% of (1)}	78.2%	78.2%	78.2%	78.2%	79.3%
(6) expected future costs {(1) x (5)}	63,302	59,809	59,040	58,649	62,253
(7) premium deficiency / (deferred policy acquisition cost)	(17,656)	(16,677)	(16,448)	(16,306)	(16,268)

EXHIBIT D

Projected Year-end Policy Liabilities

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

Alberta Grid ending 2017		Projected Balances as at Dec. 31, 2017 (\$000s)							
		nominal values			actuarial present value adjustments (apvs)				TOTAL
Acc Yr	Case	IBNR	Total Unpaid	discount	investment PfAD	development PfAD	Total apvs		
2004	-	(80)	(80)	-	-	8	8	(72)	
2005	1,487	(220)	1,267	-	-	127	127	1,394	
2006	749	(76)	673	(7)	3	66	62	735	
2007	3,309	(533)	2,776	(25)	11	275	261	3,037	
2008	1,577	422	1,999	(20)	10	198	188	2,187	
2009	3,562	874	4,436	(53)	27	439	413	4,849	
2010	5,808	1,720	7,528	(90)	38	744	692	8,220	
2011	12,072	1,975	14,047	(197)	98	1,385	1,286	15,333	
2012	13,449	5,431	18,880	(245)	113	1,863	1,731	20,611	
2013	15,955	6,666	22,621	(294)	136	2,233	2,075	24,696	
2014	22,057	10,310	32,367	(453)	194	3,989	3,730	36,097	
2015	34,660	13,287	47,947	(767)	336	5,897	5,466	53,413	
2016	38,774	11,469	50,243	(904)	402	5,772	5,270	55,513	
PAYs (sub-total):	153,459	51,245	204,704	(3,055)	1,368	22,996	21,309	226,013	
CAY (2017)	52,432	24,597	77,029	(1,309)	616	8,859	8,166	85,195	
claims liabilities:	205,891	75,842	281,733	(4,364)	1,984	31,855	29,475	311,208	
	Unearned Premium	Premium Deficiency / (DPAC)	Total Provision	discount	investment PfAD	development PfAD	Total apvs	TOTAL*	
premium liabilities:	78,521	(16,268)	62,253	(868)	434	6,116	5,682	67,935	
*Total may not be sum of parts, as apvs apply to future costs within UPR									
policy liabilities:			343,986	(5,232)	2,418	37,971	35,157	379,143	

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 (Sep. 30, 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%	9.2%	10.0%
2011	10.0%	10.0%	9.9%	10.0%
2012	10.0%	10.0%	10.0%	10.0%
2013	10.0%	10.0%	10.0%	10.0%
2014	12.5%	10.0%	12.5%	12.5%
2015	12.4%	10.0%	12.5%	12.5%
2016	12.0%	10.0%	6.9%	11.7%
2017	12.5%	10.0%	12.5%	12.5%
prem liab	11.7%	10.0%	5.2%	10.0%

discount rate: 0.54%

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, 2017 and based on more up-to-date information). We have included both the current valuation selection (0.54%), the prior valuation assumption (0.60%) 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	0.04%	0.54%	1.04%	1.54%	2.04%	2.54%	0.60%	0.75%
2004	-	-	-	-	-	-	-	-
2005	2,052	2,041	2,023	2,005	1,988	1,971	2,039	2,033
2006	1,106	1,100	1,091	1,082	1,073	1,065	1,099	1,096
2007	5,339	5,309	5,262	5,216	5,171	5,126	5,304	5,290
2008	3,689	3,664	3,626	3,588	3,550	3,514	3,660	3,648
2009	7,381	7,329	7,245	7,164	7,084	7,007	7,318	7,293
2010	11,488	11,398	11,255	11,115	10,978	10,846	11,381	11,337
2011	21,001	20,844	20,594	20,352	20,115	19,884	20,815	20,738
2012	29,151	28,934	28,587	28,252	27,925	27,607	28,893	28,786
2013	33,611	33,341	32,908	32,490	32,082	31,685	33,287	33,157
2014	52,207	51,719	50,949	50,208	49,489	48,792	51,624	51,392
2015	67,306	66,606	65,514	64,464	63,438	62,444	66,473	66,138
2016	78,859	78,096	76,912	75,758	74,642	73,569	77,958	77,590
Total	313,190	310,381	305,966	301,694	297,535	293,510	309,851	308,498
	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	0.04%	0.54%	1.04%	1.54%	2.04%	2.54%	0.60%	0.75%
Total	2,809	-	(4,415)	(8,687)	(12,846)	(16,871)	(530)	(1,883)
	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	0.04%	0.54%	1.04%	1.54%	2.04%	2.54%	0.60%	0.75%
2004	-	-	-	-	-	-	-	-
2005	0.5%	-	(0.9%)	(1.8%)	(2.6%)	(3.4%)	(0.1%)	(0.4%)
2006	0.5%	-	(0.8%)	(1.6%)	(2.5%)	(3.2%)	(0.1%)	(0.4%)
2007	0.6%	-	(0.9%)	(1.8%)	(2.6%)	(3.4%)	(0.1%)	(0.4%)
2008	0.7%	-	(1.0%)	(2.1%)	(3.1%)	(4.1%)	(0.1%)	(0.4%)
2009	0.7%	-	(1.1%)	(2.3%)	(3.3%)	(4.4%)	(0.2%)	(0.5%)
2010	0.8%	-	(1.3%)	(2.5%)	(3.7%)	(4.8%)	(0.1%)	(0.5%)
2011	0.8%	-	(1.2%)	(2.4%)	(3.5%)	(4.6%)	(0.1%)	(0.5%)
2012	0.7%	-	(1.2%)	(2.4%)	(3.5%)	(4.6%)	(0.1%)	(0.5%)
2013	0.8%	-	(1.3%)	(2.6%)	(3.8%)	(5.0%)	(0.2%)	(0.6%)
2014	0.9%	-	(1.5%)	(2.9%)	(4.3%)	(5.7%)	(0.2%)	(0.6%)
2015	1.1%	-	(1.6%)	(3.2%)	(4.8%)	(6.2%)	(0.2%)	(0.7%)
2016	1.0%	-	(1.5%)	(3.0%)	(4.4%)	(5.8%)	(0.2%)	(0.6%)
Total	0.9%	-	(1.4%)	(2.8%)	(4.1%)	(5.4%)	(0.2%)	(0.6%)
	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 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
	Sum of Prior Month Actual Amount	Sum of Projected Change					
2004	(72)	2	(2)	-	-	-	(72)
2005	44	11	(171)	-	(160)	(363.6%)	(116)
2006	(12)	1	(1)	-	-	-	(12)
2007	(326)	11	(27)	-	(16)	4.9%	(342)
2008	808	(21)	36	-	15	1.9%	823
2009	1,748	(45)	36	-	(9)	(0.5%)	1,739
2010	2,987	(87)	349	-	262	8.8%	3,249
2011	4,605	(140)	(34)	-	(174)	(3.8%)	4,431
2012	9,409	(318)	519	-	201	2.1%	9,610
2013	11,917	(323)	101	-	(222)	(1.9%)	11,695
2014	20,760	(673)	(851)	-	(1,524)	(7.3%)	19,236
2015	27,648	(1,380)	556	-	(824)	(3.0%)	26,824
2016	32,814	(2,378)	(3,609)	-	(5,987)	(18.2%)	26,827
2017	-	6,502	(2,501)	-	4,001	100.0%	4,001
Grand Total	112,330	1,162	(5,599)	-	(4,437)	(3.9%)	107,893

EXHIBIT G

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

RSP **Alberta Grid**
AccountCode Desc **IBNR - Undiscounted**

IBNR - in \$000s

AccYear	Values				Sum of Total Change	Sum of % Total Change	Sum of Current Month Final Amount
	Sum of Prior Month Actual Amount	Sum of Projected Change	Sum of Change Due to AvsP Variances	Sum of Change Due to Valuation Implementation			
2004	(80)	2	(2)	-	-	-	(80)
2005	(158)	5	(140)	-	(135)	85.4%	(293)
2006	(101)	3	(3)	-	-	-	(101)
2007	(692)	21	(37)	-	(16)	2.3%	(708)
2008	547	(16)	29	-	13	2.4%	560
2009	1,171	(35)	27	-	(8)	(0.7%)	1,163
2010	2,004	(60)	339	-	279	13.9%	2,283
2011	2,756	(83)	(50)	-	(133)	(4.8%)	2,623
2012	6,936	(243)	522	-	279	4.0%	7,215
2013	9,074	(272)	52	-	(220)	(2.4%)	8,854
2014	15,662	(626)	(909)	-	(1,535)	(9.8%)	14,127
2015	20,809	(1,249)	435	-	(814)	(3.9%)	19,995
2016	25,299	(2,150)	(3,254)	-	(5,404)	(21.4%)	19,895
2017	-	5,495	(2,486)	-	3,009	100.0%	3,009
Grand Total	83,227	792	(5,477)	-	(4,685)	(5.6%)	78,542