17. (2.0 points)

A workers' compensation policy has the following limits and expected losses:

Per-Occurrence Limit	$300,000
Expected Unlimited Aggregate Losses	$700,000
Expected Limited Aggregate Losses	$500,000
Aggregate Deductible Limit	$800,000
State Hazard Group Differential	0.95

Table of Expected Loss Groups

Expected Loss Group	Range of Values
31	630,000-720,000
30	720,001-830,000
29	830,001-990,000
28	990,001-1,180,000
27	1,180,001-1,415,000
26	1,415,001-1,744,000

Table of Insurance Charges

	Expected Loss Group					
Entry Ratio	31	30	29	28	27	26
0.43	0.5675	0.5626	0.5584	0.5543	0.5497	0.5456
0.60	0.4865	0.4799	0.4737	0.4676	0.4613	0.4553
1.14	0.2658	0.2552	0.2448	0.2341	0.2234	0.2128
1.60	0.1644	0.1537	0.1367	0.1322	0.1215	0.1107
2.67	0.0822	0.0769	0.0684	0.0661	0.0608	0.0554

a. (1.5 points)

Calculate the total expected loss cost for this policy using the Insurance Charge Reflecting Loss Limitation (ICRLL) adjustment procedure.

b. (0.5 points)

Describe how the ICRLL procedure is used to adjust expected losses for a workers' compensation policy.

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SAMPLE ANSWERS AND EXAMINER'S REPORT

QUESTION 17	
TOTAL POINT VALUE: 2.0	**LEARNING OBJECTIVE(S): B5a**

SAMPLE ANSWERS

Part a: 1.5 points

Adj Exp Losses = 700kx.95x($\frac{1+0.8*k}{1-k}$) = 1,143,800 -> ELG=28

Where k=1-500/700=.2857

$e(A_D)$ = 500k

loss cost=xs + $e(A_D)\Phi$(Agg Limit/Ltd Loss)

=200k +500k Φ(800/500)

=266,100

Part b: .5 point

Sample 1

Presence of per-occurrence limit reduces variance of severity distribution, thus reducing variance of aggregate loss distribution. ICRLL procedure approximates a limited table M by increasing the expected losses used to determine the ELG, since policies with larger expected losses have lower variance in aggregate loss distribution (just like a policy with per-occurrence limit)

Sample 2

The ICRLL procedure is used to adjust expected loss for a given risk via its state hazard group differential (accounts for riskiness and location) and its expected XS ratio. It uses the adjusted expected loss rather than unadjusted expected losses to find table M charges. It basically shifts the column of charges that we are looking at to better align variance of loss distribution.

EXAMINER'S REPORT

Candidates were expected to know how to use the ICRLL procedure to calculate the total expected loss cost, and how to construct a table of insurance charges.

Candidates were expected to understand how an occurrence limit necessitates adjustments before using a Table M. Some candidates confused the ICRLL formulas with other insurance charge calculations from the text.

Part a

Candidates were expected to use the ICRLL adjustment to calculate the total expected loss cost. Candidates that used a procedure other than the ICRLL adjustment did not receive full credit.

Common mistakes included:

- Calculating an incorrect entry ratio
- Not having the correct formula for the ICRLL adjustment (incorrect excess ratio)
- Looking up the wrong ELG

Part b

Candidates were expected to describe how the ICRLL procedure is used to adjust expected losses for a workers compensation policy.

Not fully describing the procedure resulted in only partial credit. For example, just mentioning the state hazard group adjustment without fully describing what the adjustment does did not receive full credit.