

SERFF Tracking Number: MNNL-127160481 State: Arkansas
Filing Company: Minnesota Life Insurance Company State Tracking Number: 48717
Company Tracking Number: JEN-239
TOI: L08 Life - Other Sub-TOI: L08.000 Life - Other
Product Name: Variable Group Universal Life
Project Name/Number: Revised VGUL Actuarial Memorandum/JEN-239

Filing at a Glance

Company: Minnesota Life Insurance Company

Product Name: Variable Group Universal Life SERFF Tr Num: MNNL-127160481 State: Arkansas
TOI: L08 Life - Other SERFF Status: Closed-Accepted State Tr Num: 48717

Sub-TOI: L08.000 Life - Other

Filing Type: Form

For Informational Purposes

Co Tr Num: JEN-239

State Status: Filed-Closed

Reviewer(s): Linda Bird

Authors: Joy Norquist, Paula Moris, Disposition Date: 05/11/2011

Teresa Guindon

Date Submitted: 05/09/2011

Disposition Status: Accepted For Informational Purposes

Implementation Date:

Implementation Date Requested: On Approval

State Filing Description:

General Information

Project Name: Revised VGUL Actuarial Memorandum

Project Number: JEN-239

Requested Filing Mode: Informational

Explanation for Combination/Other:

Submission Type: New Submission

Group Market Type: Employer

Filing Status Changed: 05/11/2011

State Status Changed: 05/11/2011

Created By: Joy Norquist

Corresponding Filing Tracking Number:

Filing Description:

NAIC# 66168

Group# 869

Status of Filing in Domicile: Pending

Date Approved in Domicile:

Domicile Status Comments:

Market Type: Group

Group Market Size: Large

Overall Rate Impact:

Deemer Date:

Submitted By: Joy Norquist

RE: Minnesota Life File No. JEN-239

Enclosed, for informational purposes only, is a revised Actuarial Memorandum. The revised Actuarial Memorandum will replace the Actuarial Memorandum that we filed in 2008 to update our Variable Group Universal Life tables in order to comply with 2001 CSO, and will be used with our Variable Group Universal Life Policy form series MHC-94-18660 Rev.

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5-2001, et al., which was previously approved by the Department on April 5, 2001. The revised Actuarial Memorandum will apply to new business only that will become effective after your acknowledgement of this informational filing submission. The enclosed Actuarial Memorandum is being revised to allow us to change the minimum interest rate credited on the general account value to 1.5% annually.

In no event will the minimum interest rate decrease less than the state mandated requirements.

Thank you for your attention to this informational filing submission. Should you have any questions with regard to this filing, please feel free to contact me directly at (651) 665-6399 or by e-mail at joy.norquist@securian.com. Our fax number is (651) 665-5424.

Sincerely,

Joy Norquist
Senior Product Compliance Analyst
Group Employer Market

Company and Contact

Filing Contact Information

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Filing Company Information

Minnesota Life Insurance Company
400 Robert Street North
Law Department
St. Paul, MN 55101-2098
(651) 665-3500 ext. [Phone]

CoCode: 66168
Group Code: 869
Group Name:
FEIN Number: 41-0417830
State of Domicile: Minnesota
Company Type:
State ID Number:

Filing Fees

Fee Required? No
Retaliatory? No
Fee Explanation:

SERFF Tracking Number: MNNL-127160481 State: Arkansas
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Per Company: No

COMPANY	AMOUNT	DATE PROCESSED	TRANSACTION #
Minnesota Life Insurance Company	\$0.00	05/09/2011	

SERFF Tracking Number: MNNL-127160481 State: Arkansas
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Correspondence Summary

Dispositions

Status	Created By	Created On	Date Submitted
Accepted For Linda Bird Informational Purposes		05/11/2011	05/11/2011

SERFF Tracking Number: MNNL-127160481 State: Arkansas
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Disposition

Disposition Date: 05/11/2011

Implementation Date:

Status: Accepted For Informational Purposes

Comment:

Rate data does NOT apply to filing.

SERFF Tracking Number: MNNL-127160481 *State:* Arkansas
Filing Company: Minnesota Life Insurance Company *State Tracking Number:* 48717
Company Tracking Number: JEN-239
TOI: L08 Life - Other *Sub-TOI:* L08.000 Life - Other
Product Name: Variable Group Universal Life
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Schedule	Schedule Item	Schedule Item Status	Public Access
Supporting Document	Flesch Certification		No
Supporting Document	Application		No
Supporting Document	Revised Actuarial Memorandum		No

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Supporting Document Schedules

Item Status: **Status**
Date:

Satisfied - Item: Revised Actuarial Memorandum

Comments:

Attached, for informational purposes only, is a revised Actuarial Memorandum, as explained in the Filing Description under the General Information tab. The attached Actuarial Memorandum is being revised to allow us to change the minimum interest rate credited on the general account value to 1.5% annually.

Attachment:

VGUL 2001 CSO Act. Memo 4.25.2011.pdf

MINNESOTA LIFE INSURANCE COMPANY
VARIABLE GROUP UNIVERSAL LIFE (VGUL)
ACTUARIAL BASIS MEMORANDUM

I. INTRODUCTION

Variable Group Universal Life (VGUL) is a participating flexible premium, flexible benefit plan of life insurance. There are two death benefit options. The first (Level) pays face amount, while the second (Variable) pays the face amount plus the current account value. The owner selects the face amount at issue. The owner has the right to change the face amount. There are limitations to these changes and evidence of insurability may be required. Minnesota Life may adjust the face amount to qualify the policy as life insurance under Section 7702 of the Internal Revenue Code. The test for qualification will be either the cash value accumulation test or the guideline premium test. At issue, the group sponsor selects which test will be used. Once a test is selected for a policy, it will remain unchanged for that policy. The death benefit payable is supported by monthly deductions from the net cash value. The time and amount of the payment of the premium may be determined by the owner of the policy and the coverage will remain in force so long as the monthly charges may be deducted from the existing balance in the policy's net cash value.

II. DESCRIPTION OF POLICY CHARACTERISTICS

A. General Account

VGUL net premiums and net cash value may be allocated to or transferred into the Guaranteed Account. The Guaranteed Account is the portion of the general account of Minnesota Life which is attributable to policies of this class. The description is for accounting purposes and does not represent a separate account or a division of the general account. The interest credited to the policy's account value in the Guaranteed Account is guaranteed to be not less than 1.5 percent.

B. Separate Account

VGUL net premiums and net cash value may also be allocated to or transferred into the Separate Account of Minnesota Life called the Variable Universal Life Account. The account value invested in the Separate Account will vary with the investment experience of the Separate Account. The Variable Universal Life Account through its sub-accounts, invests its assets in shares of Advantus Series Fund, Inc., Fidelity's Variable Insurance Products (VIP) Funds, Janus Aspen Series, and W&R Target Funds, Inc. (the "Funds").

The Advantus Series Fund, Inc. has seven Portfolios which are available to policy owners for the allocation of premiums or for transfers. They are: the Bond Portfolio, the Money Market Portfolio, the Mortgage Securities Portfolio, the Index 500 Portfolio, the International Bond Portfolio, the Index 400 Mid-Cap Portfolio, and the Real Estate Securities Portfolio.

Fidelity's Variable Insurance Products (VIP) Funds has three Portfolios which are available to the Variable Universal Life Account. They are the VIP Equity-Income Portfolio: Initial Class Shares, the VIP High Income Portfolio: Initial Class Shares and the VIP Contrafund® Portfolio: Initial Class Shares.

Janus Aspen Series has two Portfolios which are available to the Variable Universal Life Account. They are the Janus Aspen Series Forty Portfolio—Service Shares and the Janus Aspen Series International Growth Portfolio—Service Shares.

W&R Target Funds, Inc., has eight Portfolios which are available to the Variable Universal Life Account. They are: the W&R Balance Portfolio, the W&R Core Equity Portfolio, the W&R Growth Portfolio, the W&R International Value Portfolio, the W&R Micro Cap Growth Portfolio, the W&R Small Cap Growth Portfolio, the W&R Small Cap Value Portfolio, and the W&R Value Portfolio.

C. Investment Options

The owner of the policy designates how net premiums are allocated among the Variable Universal Life Account sub-accounts and the Guaranteed Account. The designation may be changed at any time, but the designation must allocate an amount of at least 10% of the net premium to any one of the sub-accounts or the Guaranteed Account. Minnesota Life reserves the right to limit the maximum allocation to the Guaranteed Account to 50% of the net premium. Currently, Minnesota Life does not intend to exercise this right.

The VGUL policy allows for the transfers of net cash value among the sub-accounts and the Guaranteed Account. A transfer is subject to a transaction charge, not to exceed \$10, for each transfer of net cash value. The number of transfers is limited to one transfer each calendar month. The amount to be transferred to or from a sub-account or the Guaranteed Account must be at least \$250 or, if less, the entire account value attributable to that sub-account or the Guaranteed Account. Minnesota Life reserves the right to limit transfers from the Guaranteed Account to one such transfer per policy year and to limit the maximum amount that may be transferred from the Guaranteed Account to a sub-account to 20% (or \$250, if greater) of the account value attributable to the Guaranteed Account. Currently, Minnesota Life does not intend to exercise this right.

D. Guaranteed Account Value

Each policy transaction (e.g., net premiums, monthly deductions, transfers) that affect the Guaranteed Account increases or decreases the account value of the policy invested in the Guaranteed Account by the amount of such transaction.

E. Separate Account Value

The separate account value is the sum of the account value in each sub-account of the policy which is invested in the respective sub-account of the Separate Account. Each policy transaction that affects the sub-accounts purchases or redeems a number of sub-account units equal to the dollar amount of the transaction associated with such sub-account divided by the unit value of such sub-account. The account value of any sub-account of a policy is equal to the number of units outstanding in that sub-account times the unit value of that sub-account of the Separate Account. The unit values are determined daily.

F. Policy Charges

We assess charges against base premiums, the account value and the Variable Universal Life Account assets. All of the charges are fully defined in the policy form.

G. Account Value Formulas

$$AV_t = (AV_{t-1} + GP_t - PE_t - MAF - MRC_t - RC_t)(1 + i^{(12)}) - PW_t$$

Where:

AV_t = Account Value at the end of month t.

GP_t = Gross premium paid in month t.

PE_t = Percent of premium charges for month t. The maximum percent of premium charges is currently 10.25% of the gross premium. This maximum will only vary to the extent federal and state premium tax rates vary.

MAF	= Monthly administrative fee. This fee is guaranteed at issue and will not exceed \$4.00 per month.
$i^{(12)}$	= For the Guaranteed Account, this is the credited interest rate during the month, which will never be less than 1.5% annually (0.12415% monthly). For the Separate Account, this is the percentage change in the unit value from the beginning of the month to the end of the month of the sub-account in which the net premiums are invested. For the Separate Account there is no guaranteed interest rate and no guaranteed minimum account value.
RC_t	= Rider charges for month t.
PW_t	= Partial withdrawal in month t (including cost for processing the request). Partial withdrawals for this formula are assumed to occur at the end of the month; however, interest is actually credited on the account value based on the actual day of the withdrawal.
MRC_t	= Monthly risk charge for month t. = $r_{x+t} (FA_t - Z_t)$ for the Level death benefit option = $r_{x+t} (FA_t)$ for the Variable death benefit option
r_{x+t}	= Risk factor at attained age x+t. The maximum factors are either smoker distinct or unismoke and are shown in Tables A and B attached. Rates lower than these maximums are anticipated. The maximum factors are based on 200% of the 2001 Commissioners Standard Ordinary Tables.
FA_t	= Face amount assumed payable at the beginning of month t.
Z_t	= Account value immediately preceding deduction of MRC_t and RC_t . = $(AV_{t-1} + GP_t - PE_t)$

H. Cash Surrender Value and the Minimum Nonforfeiture Requirements

The cash surrender value of VGUL is the account value, there is no surrender charge. The NAIC Model Regulations for universal life and variable life (Actuarial Guideline XXIV) define minimum cash surrender values as a retrospective accumulation at the actual net investment return. Specifically, these minimum cash surrender values equal the accumulation, at the net investment return, of premiums less accumulated benefit charges (including riders), administrative expense charges, initial and additional acquisition expense charges (not to exceed the initial and additional expense allowances, respectively), partial withdrawals and service charges and less any unamortized unused expense allowance. The expense allowance is that defined in the Standard Nonforfeiture Law (SNL):

$$E_x = .01 \text{ ELA} + 1.25 \min [.04 (\text{ELA}), P_x]$$

where,

P_x = Net level premium assuming the maximum benefit and premium period for the policy (maturity at 95) and a face amount equal to the initial amount of insurance.

ELA = Equivalent level amount. This is the ten year average death benefit, equal to the face amount in this case.

The unamortized unused expense allowance at the end of each year is computed by:

$$E_x \cdot \frac{\ddot{a}_{x+s:95-x-s}}{\ddot{a}_{x:95-x}}$$

where, x = issue age
 s = policy year

Note that the account value as defined above, which is the cash surrender value, is the accumulated premiums less accumulated rider charges, expense charges (percent of premium charges and administrative fee), partial withdrawals and service fees. Further, VGUL does not assess any acquisition expense charges, the administrative expense is a level per policy per month charge for all policy years and there is no surrender charge; therefore, the expense allowance of the SNL is not exceeded.

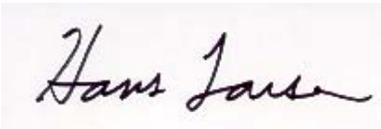
In conclusion, this policy provides cash surrender values which are greater than or equal to the minimum requirements.

I. Paid-Up Benefits

For any month in which no premium is received, the policy will be treated as paid-up term insurance. The rates for computing the cost of paid-up insurance will be the same as those used while premiums are being paid. The paid-up term period will run until the maturity date or until the account value is no longer sufficient to purchase term protection, at which time the policy will terminate in accordance with the grace period provision.

J. Reserves

The reserve for a VGUL policy is calculated based on a reserve method which produces reserves not less than those under the Commissioner's Reserve Valuation Method. The reserve will never be less than the accumulated account value.



Hans Larsen, FSA
Associate Actuary

April 25, 2011
Date

TABLE A

MINNESOTA LIFE INSURANCE COMPANY

Guaranteed Maximum Monthly Cost of Insurance Rate
on a Nicotine-Distinct Basis
per \$1,000 Net Amount at Risk

Attained <u>Age*</u>	Maximum Monthly <u>Rate</u>		Attained <u>Age*</u>	Maximum Monthly <u>Rate</u>		Attained <u>Age*</u>	Maximum Monthly <u>Rate</u>	
	<u>Non-Nicotine</u>	<u>Nicotine</u>		<u>Non-Nicotine</u>	<u>Nicotine</u>		<u>Non-Nicotine</u>	<u>Nicotine</u>
0	0.110	0.110	35	0.180	0.327	70	3.943	6.258
1	0.072	0.072	36	0.190	0.347	71	4.360	6.800
2	0.052	0.052	37	0.202	0.370	72	4.842	7.418
3	0.040	0.040	38	0.213	0.397	73	5.352	8.050
4	0.035	0.035	39	0.227	0.425	74	5.898	8.732
5	0.033	0.033	40	0.243	0.460	75	6.493	9.480
6	0.035	0.035	41	0.263	0.502	76	7.162	10.305
7	0.037	0.037	42	0.288	0.552	77	7.932	11.247
8	0.037	0.037	43	0.317	0.612	78	8.815	12.312
9	0.038	0.038	44	0.350	0.678	79	9.798	13.477
10	0.072	0.072	45	0.385	0.747	80	10.907	14.775
11	0.045	0.045	46	0.422	0.817	81	12.130	16.190
12	0.055	0.055	47	0.453	0.880	82	13.418	17.640
13	0.063	0.063	48	0.482	0.933	83	14.810	19.168
14	0.082	0.082	49	0.517	1.002	84	16.347	20.862
15	0.100	0.100	50	0.560	1.083	85	18.015	22.700
16	0.117	0.130	51	0.613	1.187	86	19.857	24.697
17	0.130	0.153	52	0.677	1.310	87	21.887	26.868
18	0.137	0.170	53	0.750	1.453	88	24.018	29.090
19	0.140	0.182	54	0.840	1.622	89	26.198	31.282
20	0.142	0.193	55	0.940	1.800	90	28.175	33.138
21	0.142	0.203	56	1.045	1.988	91	30.035	34.770
22	0.143	0.212	57	1.148	2.163	92	32.183	36.653
23	0.145	0.223	58	1.252	2.333	93	34.655	38.783
24	0.147	0.237	59	1.370	2.530	94	37.483	41.360
25	0.150	0.248	60	1.512	2.763			
26	0.157	0.262	61	1.682	3.045			
27	0.162	0.272	62	1.878	3.365			
28	0.160	0.273	63	2.090	3.705			
29	0.158	0.275	64	2.313	4.048			
30	0.157	0.277	65	2.545	4.387			
31	0.157	0.280	66	2.783	4.722			
32	0.160	0.287	67	3.035	5.067			
33	0.165	0.298	68	3.302	5.422			
34	0.172	0.312	69	3.598	5.812			

* This is the insured employee's attained age as of the last certificate anniversary.

TABLE A

MINNESOTA LIFE INSURANCE COMPANY

Guaranteed Maximum Monthly Cost of Insurance Rate
on a Uni-Nicotine Basis
per \$1,000 Net Amount at Risk

<u>Attained Age*</u>	<u>Maximum Monthly Rate Uni-Nicotine</u>	<u>Attained Age*</u>	<u>Maximum Monthly Rate Uni-Nicotine</u>	<u>Attained Age*</u>	<u>Maximum Monthly Rate Uni-Nicotine</u>
0	0.110	35	0.198	70	4.200
1	0.072	36	0.210	71	4.623
2	0.052	37	0.223	72	5.112
3	0.040	38	0.238	73	5.625
4	0.035	39	0.255	74	6.178
5	0.033	40	0.273	75	6.785
6	0.035	41	0.297	76	7.462
7	0.037	42	0.325	77	8.242
8	0.037	43	0.358	78	9.135
9	0.038	44	0.395	79	10.127
10	0.072	45	0.435	80	11.243
11	0.045	46	0.477	81	12.475
12	0.055	47	0.512	82	13.767
13	0.063	48	0.543	83	15.157
14	0.082	49	0.582	84	16.695
15	0.100	50	0.628	85	18.363
16	0.118	51	0.688	86	20.203
17	0.133	52	0.758	87	22.225
18	0.142	53	0.842	88	24.348
19	0.147	54	0.940	89	26.508
20	0.148	55	1.048	90	28.452
21	0.152	56	1.165	91	30.273
22	0.153	57	1.277	92	32.385
23	0.155	58	1.387	93	34.815
24	0.158	59	1.513	94	37.615
25	0.163	60	1.663		
26	0.172	61	1.845		
27	0.177	62	2.053		
28	0.177	63	2.278		
29	0.175	64	2.515		
30	0.175	65	2.760		
31	0.175	66	3.008		
32	0.178	67	3.270		
33	0.183	68	3.545		
34	0.190	69	3.850		

* This is the insured employee's attained age as of the last certificate anniversary.