

Nationwide Life Insurance Company
Actuarial Description of
Flexible Premium Variable Universal Life
Policy Form Number VLO-0759-03

I. Description of Policy Characteristics

A. Death Benefits

This Policy provides a death benefit if the Insured dies while the Policy is in force, prior to the Maturity Date. The death benefit is determined in accordance with one of the following options, whichever is chosen and in effect when the Death Proceeds become payable. The current option in effect is stated on the Policy Data Pages.

1. **Death Benefit Option 1**

The death benefit will be the greater of:

- a. the Specified Amount on the date the Death Proceeds become payable; and
- b. the Minimum Required Death Benefit to qualify the Policy as life insurance under section 7702 of the Internal Revenue Code, as amended, on the date of death.

2. **Death Benefit Option 2**

The death benefit will be the greater of:

- a. the Specified Amount plus the Cash Value on the date the Death Proceeds become payable; and
- b. the Minimum Required Death Benefit to qualify the Policy as life insurance under section 7702 of the Internal Revenue Code, as amended, on the date of death.

3. **Death Benefit Option 3**

The death benefit will be the greater of:

- a. the Specified Amount plus the greater of 0 and the premiums less partial Surrenders accumulated at an interest rate (identified at issue) to the date the Death Proceeds become payable, but not to exceed the maximal returnable premium (identified at issue); and
- b. the Minimum Required Death Benefit to qualify the Policy as life insurance under section 7702 of the Internal Revenue Code, as amended, on the date of death.

The Minimum Required Death Benefit to qualify the Policy as life insurance under section 7702 of the Internal Revenue Code, as amended, is dependent on the qualification test selected at issue by the Owner. For the Guideline Premium/Cash Value Corridor Test, the Minimum Required Death Benefit is the applicable percentage of the Cash Value on the date of death. The applicable percentages are stated in the Policy Data Pages, and are provided in section 7702 of the Internal Revenue Code, as amended. For the Cash Value Accumulation Test, the Minimum Required Death Benefit is the lowest death benefit whose net single premium equals or exceeds the Cash Value after the net single premiums for the qualified additional benefits have been deducted. The factors required for calculation of the Minimum Required Death Benefit factors are stated in the

Policy Data Pages. The actual Death Proceeds payable will be reduced by any Indebtedness and any due and unpaid policy charges accruing during a grace period.

B. Cash Value

The Cash Value is the accumulation of Net Premiums minus expense charges, a mortality and expense charge, a cost of insurance charge, and the cost of any additional benefits provided by a Rider. Such accumulations are based on the investment returns of the investment options to which the Policy's Cash Value is allocated. The cost of insurance rates will be less than or equal to the cost of insurance rates guaranteed in the Policy.

Partial Surrenders will reduce the Cash Value by the Partial Surrender Amount.

C. Continuation of Benefit (Nonforfeiture Benefits)

If premiums are not continued, the death benefit under this Policy and any benefits provided by any Rider attached to this Policy will be continued until the Policy terminates in accordance with the Grace Period Provision, until the Policy is surrendered for the Cash Surrender Value, the Insured dies, or until the Maturity Date, whichever occurs first. The cost of insurance during this time will be based on the same rates as those used if premiums had been continued.

The Cash Value is calculated during this period as described in B. above.

D. Maturity Benefit and Maturity Date

Prior to the Maturity Date, we will send the Owner a notice and election form informing the Owner that, if the Policy is in force on the Maturity Date, it will be automatically extended unless the Owner elects to receive the Maturity Proceeds. The automatic extension will be to the Insured's date of death. The Owner must return the election form to our Home Office by the Maturity Date. If the election is not received by the Maturity Date and the Policy is in force, it will be extended.

In no event will the Maturity Date be extended beyond the point where the Policy would fail to meet the definition of life insurance as defined by the Internal Revenue Code, as amended. The effective date of the extension will be the Maturity Date stated in the Policy Data Pages.

In addition, the following will apply:

1. No premium payments will be allowed.
2. Increases and/or decreases to the Specified Amount will not be permitted.
3. Death Benefit Option 2 and Death Benefit Option 3 policies (if applicable), will be changed to Death Benefit Option 1.
4. The amount of death benefit will be equal to the Cash Value.
5. 100% of the Cash Value from all the Sub-accounts will be transferred to the Fixed Account.
6. The mortality and expense risk charge and monthly expense charges will no longer be deducted from the Cash Value. Since the death benefit will be equal to the Cash Value, the monthly cost of insurance charges will be zero.

The Owner can continue to take loans and make loan repayments after the original Maturity Date. The loan amount is transferred from the Fixed Account to the Policy Loan Account. The Policy Loan Account will continue to function in the same manner as before the original Maturity Date.

E. Flexibility

1. Death Benefit Option

At issue, the Owner selects a Death Benefit Option. At any time after the first Policy Anniversary Day, and once during a policy year, the Death Benefit Option may be changed, except to Death Benefit Option 3.

2. Specified Amount Increase

The Specified Amount may be increased at any time after the first Policy Anniversary Day subject to the following:

- a. Evidence of insurability is required.
- b. Minimum increase is \$10,000.
- c. Age limits (Attained Age) for any increase are the same as for a new issue.
- d. An increase in Specified Amount is effective on the Monthly Anniversary Day on or next following the date the increase has been approved.
- e. The age of the increase segment will be the Attained Age on the date the increase is first effective.
- f. The Cash Surrender Value is sufficient to continue the Policy in force for at least 4 months.
- g. An increase in Specified Amount that is triggered by a change of Death Benefit Option (2 to 1 or 3 to 1 or 3 to 2) will be exempt from a. and b. above.
- h. We reserve the right to limit the number of increases to one each year.
- i. The Specified Amount, after the increase, must not cause the death benefit to exceed the Maximum Death Benefit.

3. Specified Amount Decrease

The Specified Amount may be decreased at any time after the first Policy Anniversary Day subject to the following conditions:

- a. Specified Amount may not be reduced below the Minimum Specified Amount. The Minimum Specified Amount is stated on the Policy Data Pages.
- b. Decreases which would disqualify the Policy as life insurance under section 7702 of the Internal Revenue Code, as amended, will not be permitted.
- c. We reserve the right to limit the number of decreases to one each year.
- d. A decrease is effective on the Monthly Anniversary Day on or next following the receipt of the Owner's request unless the Owner requests a different date.
- e. Decreases will be processed on a last in-first out (LIFO) basis.

- f. Decreases that would result in both a negative Guideline Single Premium (GSP) and a Guideline Level Premium (GLP) that is negative to the extent that the annual sum of GLPs would be negative at some time before maturity will not be allowed.

4. Partial Surrenders

No partial Surrenders are allowed in the first policy year. After the first Policy Anniversary Day, the Owner may partially surrender a portion of the Cash Value with the following limitations:

- a. The minimum partial Surrender is \$200.
- b. The partial Surrender may not reduce the Specified Amount to less than the Minimum Specified Amount. The Minimum Specified Amount is stated on the Policy Data Pages.
- c. After the completion of ten years from the Policy Date, the partial Surrender may not reduce the Cash Surrender Value below \$500 or four monthly deductions, whichever is greater.
- d. The partial Surrender will not be permitted if it will violate the definition of life insurance under section 7702 of the Internal Revenue Code, as amended.
- e. We reserve the right to deduct a fee from the Partial Surrender Amount. The maximum fee is stated in the Policy Data Pages.

Partial Surrenders will be deducted proportionately from the values in each Sub-account, unless otherwise elected. We will only reduce the Cash Value attributable to the Fixed Account when that of the Sub-accounts is insufficient to cover the Partial Surrender Amount.

Partial Surrenders are available in years 2-10 for amounts up to 10% of the Cash Surrender Value as of the beginning of the policy year. Partial Surrenders after policy year 10 are available subject only to the limits described above.

Partial Surrenders will reduce the Cash Value by the amount of the partial Surrender. The Specified Amount will also be reduced by an amount necessary to prevent an increase in the Net Amount at Risk. Any such decreases will be applied on a LIFO basis.

5. Premium Flexibility

This is a flexible premium Policy. The Policy will lapse if the Cash Surrender Value becomes negative.

Nationwide reserves the right to require satisfactory evidence of insurability for any premium payment that results in an increased Net Amount at Risk. Premium payments that are in excess of those permitted under section 7702 of the Internal Revenue Code, as amended, to qualify the Policy as life insurance will, if accepted, result in an increase to the Specified Amount.

6. Allocation of Premiums and Transfers

The Owner initially allocates the premium payments among the various underlying

investment options. Thereafter, the Owner may transfer the Cash Value among the eligible investment options subject to the following limitations:

- a) The remainder of the Funds will only allow a limited number of transfers per year. This limitation will be imposed as a cap on the number of days per calendar year that transfers to or from any of the Funds in this group can be made. Any day with a transfer to or from any of the restricted Funds will be counted as a trading day. Once the trading day limit has been reached, we will only honor requests to transfer Funds to or from the restricted Funds if those requests are received via U.S. mail. The purpose of this restriction is to limit the arbitrage opportunities offered by market timing these sensitive Funds.
- b) We will reserve the right to restrict the amount which may be transferred out of the Fixed Account. In no event will such transfers be restricted to less than 12% of the Cash Values eligible to be transferred.
- c) The Owner may request a transfer of up to 100% of the Cash Value from the Sub-account(s) to the Fixed Account. We reserve the right to restrict such transfers to 20% of the Cash Value attributable to the Sub-accounts. We also reserve the right to refuse transfers to the Fixed Account if the Fixed Account is greater than or equal to 30% of the total Cash Value.

II. Basis of Values

A. Interest Rate

The interest rate used in the Cash Value calculation will depend on the investment results of the underlying investment options to which the Cash Value is allocated. In addition to allocating the Cash Value to the Sub-accounts of the Variable Account that are listed on the Policy Data Pages, the Cash Value may also be allocated to the following accounts:

1. the Fixed Account, subject to any limitations imposed by the Policy; and
2. the Policy Loan Account as a result of any Policy Indebtedness.

There is no guaranteed interest rate for Cash Values allocated to the Sub-accounts of the Variable Account. Instead, actual investment returns are reflected daily through the unit values. Nationwide reserves the right to impose a charge against the Variable Account assets for any tax reserves resulting from the investment operations of the Sub-accounts.

Any Cash Values allocated to either the Fixed Account or the Policy Loan Account will be credited with interest daily at the following annual rates.

	Guaranteed Annual <u>Interest Rate</u>
Fixed Account	3.00% in all years
Policy Loan Account	3.00% Years 1-10 3.65% Years 11+

Nationwide may at its sole discretion apply an increased rate of interest in the calculation of Cash Values allocated to the Fixed Account or the Policy Loan Account. Because a retrospective approach is used in the calculation of Cash Values, the use of an increased rate of interest will

generate increased Cash Values. Therefore, such use is not in conflict with the maximum interest rate defined in the Standard Nonforfeiture Law.

B. Cost of Insurance

Policies will be issued on one of the following bases with the corresponding guaranteed cost of insurance charges:

<u>Rate Class</u>	<u>Guaranteed Mortality Charges</u>
Standard	2001 CSO Mortality Tables, ALB
Substandard	% Multiple of 2001 CSO Mortality Tables, ALB

For all policies, the guaranteed maximum mortality charges will be based on male/female and smoker/nonsmoker distinct mortality tables. Non-tobacco rates will be available at all Issue Ages 18 and above. Policies issued under age 18 will be on a standard basis. These policies may be changed to a non-tobacco basis at Attained Age 18 upon submission of evidence of non-tobacco use. The Guaranteed Maximum Monthly Cost of Insurance Rates are stated on the Policy Data Pages.

Nationwide may use cost of insurance rates lower than the guaranteed maximums. This will result in lower charges for the insurance coverage and a higher Cash Value.

C. Basis of Values

The same basis of values applies regardless of whether a Policy is currently in a premium paying status.

III. Demonstration of Compliance with the Standard Nonforfeiture Law (SNFL)

This Policy imposes a mortality charge at the beginning of each policy month based on the Net Amount at Risk. In addition, premium payments are flexible. There is no guaranteed interest crediting rate with respect to those policy values allocated to the Sub-accounts of the Variable Accounts. Therefore, for purposes of demonstrating compliance with the SNFL, this Policy will be treated as a Flexible Premium Universal Life Insurance Policy.

A. Definition of Symbols

x = Issue Age

t = policy year

m = policy month

i_m = actual implied interest rate applied to the Cash Value in a policy month m . For any given policy month, $(1+i_m)$ for each variable Sub-account is calculated as the product of net investment factors for all Valuation Periods which occurred during the month. For the Fixed Account and the Policy Loan Account, $(1+i_m)$ is calculated as $(1+i)^{d/365}$ where i is the guaranteed annual crediting rate shown in section II.A and d is the number of days in the policy month.

q_t = monthly mortality rate used to calculate the cost of insurance at the beginning of each policy month in year t .

DB_m = death benefit at the beginning of policy month m .

GP_m = gross premiums collected at the beginning of policy month m .

L = premium load factor which is less than or equal to 14% of all premium payments.

COI_m = cost of insurance deducted at the beginning of policy month m .

CV_m = Cash Value at the end of policy month m .

CSV_m = Cash Surrender Value at the end of policy month m .

AC_m = monthly administration charge deducted at the beginning of each policy month.

ME_m = monthly mortality and expense charge deducted at the beginning of each policy month.

$Per1000_m$ = monthly per 1000 charge deducted at the beginning of each policy month in the first 10 policy years.

PS_m = partial Surrender, if any, at the beginning of policy month m .

B. Cash Value Formula

The Policy states that:

1. $CV_0=0$;
2. $CV_m = (CV_{m-1} + GP_m * (1 - L) - COI_m - AC_m - ME_m - Per1000_m - PS_m) * (1 + i_m)$,
 where $AC_m=10$; and
3. $COI_m = q'_t * (DB_m - CV_{m-1} - GP_m * (1 - L) + AC_m + ME_m + Per1000_m)$,

C. Cash Surrender Value Formula

The Policy defines the Cash Surrender Value at any time as:

$CSV_m = CV_m - I_m$, where

I_m represents any Indebtedness.

D. Compliance with the SNFL

The NAIC Variable Life Insurance Model Regulation specifies that the method of determining Cash Values shall be in accordance with actuarial procedures that recognize the variable nature of the Policy. This method of computation must be such that if the net investment return credited to the Policy at all times from the date of issue should be equal to the assumed investment rate with premiums and benefits determined accordingly under the terms of the Policy then the resulting Cash Surrender Values must exceed the minimum values required by the SNFL for a general account Policy with such premiums and benefits. Since the Policy does not contain an assumed interest rate, the demonstration should be based on the maximum interest rate permitted under the SNFL. The similar general account product has a minimum Cash Value requirement for a Flexible Premium Universal Life Policy (as defined by the NAIC) Universal Life Insurance Model Regulation.

The minimum Cash Surrender Value (before adjustment for Indebtedness and assuming no partial Surrenders) available on a monthly anniversary date is:

$$MINCSV_m = (CV_{m-1} + GP_m * (1 - L) - COI_m - AC_m - ME_m - Per1000_m) * (1 + i_m) - UUEA_x$$

where ${}_tUUEA_x$ represents the unamortized, unused initial and additional expense allowance in policy year t .

The actual Cash Surrender Value is $CSV_m = CV_m - I_m$ per the formula in III.C. Substituting the formula for CV in III.B.2 and dropping the symbols relating to Indebtedness and partial Surrenders, the actual Cash Surrender Value becomes

$$CSV_m = (CV_{m-1} + GP_m * (1 - L) - AC_m - ME_m - Per1000_m - COI_m) * (1 + i_m)$$

since ${}_tUUEA_x \Rightarrow 0$ and $CSV_m \Rightarrow MINCSV_m$ for all m .

IV. Reserve Analysis under CRVM

The Standard Valuation Law requires, as a minimum standard, that reserves held for the policies be established in accordance with the Commissioner's Reserve Valuation Method (CRVM). The Standard Valuation Law defines the maximum expense allowance (E'_x) that can be used in calculating reserves under CRVM. Under CRVM, if the renewal Net Premium on the full preliminary term basis exceeds the full preliminary term renewal Net Premium for a 20-payment whole life insurance at the same Issue Age, then a modified preliminary term basis is prescribed where:

$$E'_x = {}_n P_{x+1} - c_x$$

Nationwide will establish a minimum reserve, ${}_tV_x$, for each Policy equal to:

$${}_tV_x = \text{maximum} \{ CSV_t, 0, CV_t - E'_x * (\ddot{a}_{x+t} / \ddot{a}_x) \}, \text{ where}$$

values of E'_x and a_x are based on guaranteed mortality rates and a 4.0% interest rate. In addition, the annuity values (\ddot{a}) assume annual payments until age 120.

An additional reserve equal to the unearned monthly cost of insurance charge will be established for policies where the valuation date falls within a policy month.



Aniela Karina Iancu, FSA, MAAA
Actuary - Individual Life
Nationwide Life Insurance Company
October 17, 2008