
State:	District of Columbia	Filing Company:	The Independent Order of Foresters
TOI/Sub-TOI:	H21 Health - Other/H21.000 Health - Other		
Product Name:	Accelerated Death Benefit Rider - 2014 - UL - Health Rate		
Project Name/Number:	/		

Filing at a Glance

Company:	The Independent Order of Foresters
Product Name:	Accelerated Death Benefit Rider - 2014 - UL - Health Rate
State:	District of Columbia
TOI:	H21 Health - Other
Sub-TOI:	H21.000 Health - Other
Filing Type:	Rate
Date Submitted:	06/19/2014
SERFF Tr Num:	FRSS-129536017
SERFF Status:	Assigned
State Tr Num:	
State Status:	
Co Tr Num:	
Implementation	On Approval
Date Requested:	
Author(s):	Jennifer Daigle, Kerry Shields, Tamara Levin, Art Vikari
Reviewer(s):	Darniece Shirley (primary), Alula Selassie, John Morgan
Disposition Date:	
Disposition Status:	
Implementation Date:	
State Filing Description:	

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Filing Company: The Independent Order of Foresters

General Information

Project Name: Status of Filing in Domicile: Not Filed
Project Number: Date Approved in Domicile:
Requested Filing Mode: Review & Approval Domicile Status Comments: The Insurance Laws of Canada where this Society is domiciled does not require approval of this filing.
Explanation for Combination/Other: Market Type: Individual
Submission Type: New Submission Individual Market Type: Individual
Overall Rate Impact: Filing Status Changed: 06/24/2014
State Status Changed:
Deemer Date: Created By: Kerry Shields
Submitted By: Tamara Levin Corresponding Filing Tracking Number:
PPACA: Not PPACA-Related
PPACA Notes: null
Include Exchange Intentions: No
Filing Description:

RE: The Independent Order of Foresters
NAIC #763-58068; FEIN: 980000680

Product Type: Accelerated Death Benefit Rider

Forms Submitted for Approval:

FORM NO.Marketing Name/Description
UL-ABRCHCRTI-DC01-2014 Accelerated Death Benefit Rider (for Chronic, Critical and Terminal Illness)
UL-ABRCRTI-DC01-2014 Accelerated Death Benefit Rider (for Critical and Terminal Illness)

The above listed forms to which these memorandums are applicable have been submitted for approval under SERFF Filing #FRSS-129536074.

The forms are new and will not replace any previously approved forms. This filing is essentially the same as filing FRSS-129532783, approved June 3, 2014, except that this version of the forms and memorandums, pending approval under SERFF filing #FRSS-129532989 are intended for use with Foresters universal life products so wording impacted because the base certificate is a UL certificate rather than a term or whole life certificate has been adjusted. No part of this filing contains any unusual or possibly controversial items from normal industry standards. Approval of these forms is not required by the Insurance Laws of Canada where this Society is domiciled.

The riders will be marketed through the same distribution method as the certificate to which they are attached. If attached to an illustrated product, they will be included in the illustration used to market that product.

These riders provide the owner with the opportunity to accelerate a portion of the death benefit of the certificate to which they are attached and receive an accelerated death benefit payment, if the insured is diagnosed with a covered illness. The accelerated death benefit payment is paid to the owner during the lifetime of the insured in lieu of payment of that portion of the

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death benefit accelerated to the beneficiary(ies), upon the death of the insured. The accelerated death benefit payment is based upon a present value calculation and may be subject to an administrative fee. No additional premium is required for these riders.

A version of the accelerated death benefit rider will be attached to each newly issued certificate as long as (1) the certificate is issued subject to underwriting requirements (i.e. not issued as the result of a term conversion or guaranteed insurability privilege) and (2) the certificate's face amount is at least \$20,000.

UL-ABRCHCRTI-DC01-2014 provides benefits for chronic, critical and terminal illness and will be attached, subject to underwriting approval, to non-rated certificates if the insured is issue age 75 or younger.

UL-ABRCRTI-DC01-2014 provides benefits for critical and terminal illness and will be attached, subject to underwriting approval, to non-rated certificates if the insured is issue age 75 or younger.

In addition to the above two forms, a third form in this rider suite UL-ABRTI-DC01-2014, was submitted in SERFF filing #FRSS-129535972, pending approval, as a life filing, and its corresponding actuarial memorandum, pending approval under SERFF filing #FRSS-129536023. It provides benefits for terminal illness only and will be attached to any certificate that is eligible for a version of an accelerated death benefit rider but is not eligible for one of the other two versions because of underwriting concerns or because the insured is issue age 76 or older.

Below is the current product to which the UL version of the riders will be attached. They may also be attached to any future universal life products that Foresters develops:

- UL-SMART-DC01-2009 'Foresters SMART' Flexible Premium Adjustable Life Insurance Certificate approved under FRSS-126367693 on December 16, 2009

The eligibility conditions outlined above, such as issue age range, underwriting criteria, minimum face amount and product lines to which the riders can be attached may change in future, on a go forward basis, due to market conditions and business experience.

Enclosed please find:

- An actuarial memorandum for each rider version.

If I may provide any additional information relating to this submission, please feel free to contact me at 416-429-3000, ext. 4310 or email tlevin@foresters.com

Sincerely,

Tamara Levin
Compliance Analyst

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Company and Contact

Filing Contact Information

Kerry Shields, Compliance Analyst	kshields@foresters.com
789 Don Mills Road	416-429-3000 [Phone] 4066 [Ext]
Toronto, ON M3C 1T9	416-467-2525 [FAX]

Filing Company Information

The Independent Order of Foresters	CoCode: 58068	State of Domicile: Ontario
789 Don Mills Road	Group Code:	Company Type: Fraternal
Toronto, ON M3C 1T9	Group Name:	Benefit Society
(416) 429-3000 ext. [Phone]	FEIN Number: 98-0000680	State ID Number:

Filing Fees

Fee Required?	No
Retaliatory?	No
Fee Explanation:	

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Supporting Document Schedules

Satisfied - Item:	Cover Letter All Filings
Comments:	Please see Filing Description under General Information tab.
Attachment(s):	
Item Status:	
Status Date:	

Bypassed - Item:	Certificate of Authority to File
Bypass Reason:	N/A
Attachment(s):	
Item Status:	
Status Date:	

Satisfied - Item:	Actuarial Memorandum
Comments:	
Attachment(s):	Actuarial Memorandum_UL CHCRTI.pdf Actuarial Memorandum_UL CRTI.pdf
Item Status:	
Status Date:	

Bypassed - Item:	Actuarial Justification
Bypass Reason:	N/A
Attachment(s):	
Item Status:	
Status Date:	

Bypassed - Item:	District of Columbia and Countrywide Loss Ratio Analysis (P&C)
Bypass Reason:	N/A
Attachment(s):	
Item Status:	
Status Date:	

Bypassed - Item:	District of Columbia and Countrywide Experience for the Last 5 Years (P&C)
Bypass Reason:	N/A
Attachment(s):	
Item Status:	

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Status Date:	
Bypassed - Item:	Consumer Disclosure Form
Bypass Reason:	N/A
Attachment(s):	
Item Status:	
Status Date:	
Satisfied - Item:	Actuarial Memorandum and Certifications
Comments:	Actuarial Memorandums are attached above.
Attachment(s):	
Item Status:	
Status Date:	
Bypassed - Item:	Unified Rate Review Template
Bypass Reason:	N/A
Attachment(s):	
Item Status:	
Status Date:	

THE INDEPENDENT ORDER OF FORESTERS ACTUARIAL MEMORANDUM

Accelerated Death Benefit Rider (for Chronic, Critical and Terminal Illness) UL-ABRCHCRTI-XX-2014

(XX will be replaced by US if your state uses the US general version,
or, if a variation, the postal abbreviation for your state)

Purpose and Scope

This actuarial memorandum has been prepared to support the filing of the above indicated accelerated death benefit rider. It has been prepared for the purpose of demonstrating compliance with regulatory authorities and may not be appropriate for other purposes.

Rider Description

This rider provides the opportunity for the owner to, during the lifetime of the insured, accelerate a portion of the certificate's eligible death benefit and receive an accelerated death benefit payment, if the insured is diagnosed with a chronic, critical or terminal illness. The accelerated death benefit payment is paid to the owner in lieu of payment, to the beneficiary(ies) upon the death of the insured, of the portion of the eligible death benefit being accelerated.

There are no monthly rider deductions for this rider and the rider will automatically be added to each eligible certificate issued, subject to Foresters then current business rules with respect to eligibility for this rider. Our current rider eligibility rules are outlined in the cover letter submitted with this filing.

To be eligible for an accelerated death benefit payment the owner must submit proof, including certification by a physician of his/her diagnosis, that the insured has a chronic, critical or terminal illness, as described below:

Chronic Illness

The insured:

- is unable to perform, without substantial assistance from another person, at least two Activities of Daily Living for a period of at least 90 days, due to a loss of functional capacity; or
- requires substantial supervision by another person to protect the insured from threats to health and safety due to the insured's severe cognitive impairment.

The chronic illness must be diagnosed by a physician as being permanent.

Critical Illness

The insured has one of the following medical conditions:

- Advanced Alzheimer's Disease;
- Amyotrophic Lateral Sclerosis (ALS);
- End stage renal failure (kidney failure);
- Life threatening (invasive) cancer;
- Major organ failure;
- Myocardial infarction (heart attack); or
- Stroke.

Terminal Illness

The insured has a non-correctable illness or physical condition which is reasonably expected to result in death within 12 months of diagnosis.

Acceleration Amount Limits

The portion of the eligible death benefit (the certificate's face amount) that the owner can request to be accelerated, is referred to as the acceleration amount and is subject to the following limits:

Overall Limit

The total of all acceleration amounts under any one certificate cannot be greater than the lesser of the maximum lifetime acceleration amount and 95% of the eligible death benefit on the effective date of the initial acceleration under the rider.

The maximum lifetime acceleration amount, applicable for the lifetime of that rider, will be shown for each rider on the certificate data pages. Our current maximum lifetime acceleration amount is \$500,000.00.

Individual Claim Limits

- Each acceleration amount must be at least equal to the minimum acceleration amount. The minimum acceleration amount, applicable for the lifetime of the rider, will be shown on the certificate data pages. Our current minimum acceleration amount is \$4,500.00.
- Each acceleration amount must be an amount such that the certificate's face amount after acceleration is least equal to the residual face amount. The residual face amount, applicable for the lifetime of the rider, will be shown on the certificate data pages. Our current residual face amount is \$10,000.00.

Limit by Type of Illness

- For chronic illness - The maximum acceleration amount that can be accelerated in any 12 month period is 24% of the eligible death benefit on the effective date of the first payment due to a chronic illness.
- For critical or terminal illness - The maximum acceleration amount is 95% of the eligible death benefit on the effective date of the payment.

Administrative Fee

At the time of claim an administrative fee will be deducted in the calculation of the accelerated death benefit payment. The administrative fee covers the costs of processing the accelerated death benefit claim.

The administrative fee will vary depending on the type of claim and are currently:

- For chronic and critical illness - \$300.00
- For terminal illness - \$0.00

Since a claim for an accelerated death benefit could be received years, even decades, after the issue date of the rider we may increase our administrative fee, for chronic and critical illness only, subject to a maximum administrative fee set at issue. For each rider issued the maximum administrative fee, applicable for the lifetime of that rider, will be shown on the certificate data pages. Our current maximum administrative fee will be \$500.00, which will allow us to increase the administrative fee that will actually be charged, based upon processing cost increases that could occur over the timeframe that the coverage could be provided under the rider. As indicated in our statement of variability we may also increase that maximum administrative fee to up to \$1,000.00, without re-filing, if in the future costs increase to a point where an increase to the maximum is justified.

Accelerated Death Benefit Payment (ADBP)

The ADBP will be determined based on a number of factors such as:

- The acceleration amount (AA) requested;
- The company's expectation of the future mortality of the insured;
- The accelerated death benefit interest rate;
- The future anticipated premiums;
- The future monthly deductions including COI charges;
- The account value, if any;
- The loan amount, if any; and
- The cash value, if any.

The formula used to determine the ADBP is detailed below. For this purpose the following terms are defined:

AF	The Acceleration Factor. Equal to the AA divided by the eligible death benefit on the effective date of that ADBP.
LRA	The Loan Repayment Amount. Equal to the AF multiplied by the loan amount, if any, on the effective date of that ADBP.
Fee	The applicable administrative fee.

Any overdue monthly deductions will be deducted from the ADBP. The ADBP will be at least equal to the cash value multiplied by the AF. The ADBP will be paid in a lump sum.

Sample ADBP calculations are provided in Appendix A.

ADBP Formula – Chronic Illness and Critical Illness

At the time of the initial ADBP, a certificate with the Increasing Death Benefit option will be changed to the Level Death Benefit option.

ADBP is equal to:

$$AAV + PVFNAR - PVFDED - LRA - Fee$$

Where:

AAV	The Accelerated Account Value. Equal to the AF multiplied by the Account Value at the effective date of the ADBP.
PVFNAR	The present value of the accelerated portion, i.e. AF, of the projected annual Net Amounts at Risk using the NAR at the effective date of the ADBP as the initial value. For purposes of projecting the NARs: (A) projected account values (i) assume that premiums will continue to be paid at current levels but will be increased as needed to cover total deductions, (ii) account for deductions including COI charges, and (iii) accumulate at the Accelerated Benefit Interest Rate; and (B) projected death benefits take into account 7702 corridor factors.
PVFDED	The present value of deductions including COI charges in respect of the projected annual accelerated Net Amounts at Risk (ANAR) used to determine PVFNAR.

Present values are taken over the period from the effective date of the ADBP to attained age 120.

ADBP Formula – Terminal Illness

The discounting rate for a terminal illness claim is 0%. The current mortality assumption for terminal illness is 100%. There is no administrative fee charged for a terminal illness claim.

The ADBP formula above thus simplifies to be:

$$AA - LRA$$

Accelerated Death Benefit Interest Rate

The interest rate used for discounting will not exceed the greater of:

- the current yield on 90-day U.S. Treasury Bills; and
- the maximum adjustable loan interest rate permitted under the NAIC Model Policy Loan Interest Rate Bill, as amended or superseded.

For terminal illness claims the interest rate used will be 0%.

Mortality

Present values are based on mortality rates which represent the company's expectation regarding mortality experience for individuals who are diagnosed to be chronically, critically or terminally ill, as applicable. The assumed mortality rates are not guaranteed and may be changed by the company. The mortality rates used will be sex distinct if the base certificate is issued on a sex distinct basis, while male mortality rates will be used if the base certificate is issued on a unisex basis. Samples of the current mortality assumptions for chronic and critical illness are shown in Appendix C; they are based on a multiple of the mortality assumption for standard risks. The current mortality assumption for terminal illness is 100%.

Effect of Acceleration on Policy Values

All applicable certificate values, such as face amount, account value and loan amount, will be reduced on a pro-rata basis based upon the acceleration factor. The COI charge rates will not be affected. After acceleration, monthly deductions including COI charges will be as if the certificate had been issued at the reduced amount.

Reserves

Reserves for the base certificate to which this rider is attached will be determined as described in the Actuarial Memorandum for the base certificate, and will disregard the benefits provided by this rider. Since the ADBP is actuarially equivalent to the payment of the AA, and the reserves established for the base certificate cover the AA, no additional reserves are required for this rider.

Lynn M. Manchester, F.S.A., M.A.A.A.
AVP, Product Actuarial
Foresters

June 16, 2014

Date

Appendix A

Sample Calculation for a Universal Life Certificate

Female, Standard Non-Smoker, Issue Age 40

Election age	65	
Eligible death benefit	150,000.00	
Loan	10,000.00	
Account value	37,581.11	
Cash value	27,581.11	
Acceleration Amount requested (AA)	30,000.00	
Acceleration Factor (AF)	20.00%	
Accelerated Death Benefit Interest Rate	6.00%	Chronic and Critical only
Accelerated Account Value (AAV)	7,516.22	
Accelerated Net Amount at Risk (ANAR)	22,483.78	AA - AAV
PVFNAR	5,236.93	See following page
PVFDDED	3,261.72	See following page
Loan Repayment Amount (LRA)	2,000.00	
Administration fee	300.00	Chronic and Critical only

Accelerated Death Benefit Payment (ADBP):

Chronic or Critical Illness ADBP

$$\begin{aligned}
 &= \text{AAV} + \text{PVFNAR} - \text{PVFDDED} - \text{LRA} - \text{Fee} \\
 &= 7,516.22 + 5,236.93 - 3,261.72 - 2,000.00 - 300.00 \\
 &= 7,191.43
 \end{aligned}$$

Terminal Illness ADBP

$$\begin{aligned}
 &= \text{AA} - \text{LRA} \\
 &= 30,000.00 - 2,000.00 \\
 &= 28,000.00
 \end{aligned}$$

Minimum ADBP

$$\begin{aligned}
 &= \text{AF} \times \text{CV} \\
 &= 20\% \times 27,581.11 \\
 &= 5,516.22
 \end{aligned}$$

Effects on Certificate Values

Certificate values are multiplied by 1 - AF. COI charge rates unchanged.

	<u>Before Acceleration</u>	<u>After Acceleration</u>
Death benefit	150,000.00	120,000.00
Loan	10,000.00	8,000.00
Account value	37,581.11	30,064.89
Cash value	27,581.11	22,064.89

Attained Age	Chronic / Critical Illness Mortality	Remaining Lives	Deaths	Discount Factor	Death Benefit	Account Value	NAR	Premium	COI Charge on NAR *	Accelerated NAR (ANAR)	PVFNAR	PVFDDED
65	0.015887	1.000000	0.015887	0.943396	150,000.00	37,581.11	112,418.89	1,201.50	1,002.69	22,483.78	329.59	200.54
66	0.017438	0.984113	0.017161	0.889996	150,000.00	40,046.71	109,953.29	1,201.50	1,076.12	21,990.66	328.12	199.82
67	0.019191	0.966952	0.018557	0.839619	150,000.00	42,582.42	107,417.58	1,201.50	1,156.69	21,483.52	326.62	199.09
68	0.021182	0.948396	0.020089	0.792094	150,000.00	45,184.86	104,815.14	1,244.96	1,244.96	20,963.03	324.94	198.27
69	0.023464	0.928307	0.021782	0.747258	150,000.00	47,895.95	102,104.05	1,341.67	1,341.67	20,420.81	323.03	197.31
70	0.026063	0.906525	0.023627	0.704961	150,000.00	50,769.70	99,230.30	1,446.23	1,446.23	19,846.06	320.41	195.94
71	0.028953	0.882898	0.025562	0.665057	150,000.00	53,815.89	96,184.11	1,554.80	1,554.80	19,236.82	316.06	193.54
72	0.032213	0.857336	0.027617	0.627412	150,000.00	57,044.84	92,955.16	1,668.79	1,668.79	18,591.03	310.27	190.30
73	0.035861	0.829719	0.029754	0.591898	150,000.00	60,467.53	89,532.47	1,785.72	1,785.72	17,906.49	302.58	185.92
74	0.039913	0.799964	0.031929	0.558395	150,000.00	64,095.58	85,904.42	1,902.64	1,902.64	17,180.88	292.61	180.18
75	0.044407	0.768035	0.034106	0.526788	150,000.00	67,941.32	82,058.68	2,017.05	2,017.05	16,411.74	280.22	173.01
76	0.049359	0.733929	0.036226	0.496969	150,000.00	72,017.79	77,982.21	2,124.80	2,124.80	15,596.44	265.23	164.30
77	0.054795	0.697703	0.038231	0.468839	150,000.00	76,338.86	73,661.14	2,221.46	2,221.46	14,732.23	247.64	154.05
78	0.060734	0.659473	0.040052	0.442301	150,000.00	80,919.19	69,080.81	2,301.56	2,301.56	13,816.16	227.55	142.32
79	0.067210	0.619420	0.041631	0.417265	150,000.00	85,774.35	64,225.65	2,359.62	2,359.62	12,845.13	205.26	129.29
80	0.074259	0.577789	0.042906	0.393646	150,000.00	90,920.81	59,079.19	2,388.95	2,388.95	11,815.84	181.14	115.19
81	0.082039	0.534883	0.043881	0.371364	150,000.00	96,376.05	53,623.95	2,385.48	2,385.48	10,724.79	155.92	100.45
82	0.090453	0.491002	0.044413	0.350344	150,000.00	102,158.62	47,841.38	2,335.85	2,335.85	9,568.28	129.81	85.18
83	0.099547	0.446589	0.044456	0.330513	150,000.00	108,288.14	41,711.86	2,230.36	2,230.36	8,342.37	103.48	69.79
84	0.109327	0.402133	0.043964	0.311805	150,000.00	114,785.42	35,214.58	2,057.13	2,057.13	7,042.92	77.66	54.68
85	0.119874	0.358169	0.042935	0.294155	150,000.00	121,672.55	28,327.45	1,804.29	1,804.29	5,665.49	53.11	40.30
86	0.131126	0.315234	0.041335	0.277505	150,000.00	128,972.90	21,027.10	1,456.30	1,456.30	4,205.42	30.49	27.01
87	0.143136	0.273898	0.039205	0.261797	150,000.00	136,711.28	13,288.72	1,201.50	981.82	2,657.74	14.90	14.93
88	0.155948	0.234694	0.036600	0.246979	152,404.15	145,146.81	7,257.34	1,220.76	647.67	1,451.47	13.96	7.96
89	0.169624	0.198094	0.033601	0.232999	162,186.25	154,463.10	7,723.15	1,299.11	749.68	1,544.63	12.86	7.34
90	0.183687	0.164492	0.030215	0.219810	172,528.95	164,313.28	8,215.66	1,381.96	863.61	1,643.13	11.60	6.62
91	0.200745	0.134277	0.026955	0.207368	183,457.61	174,721.53	8,736.08	1,469.50	1,003.58	1,747.22	10.38	5.92
92	0.218966	0.107322	0.023500	0.195630	194,983.63	185,698.69	9,284.93	1,561.82	1,163.45	1,856.99	9.07	5.18
93	0.238403	0.083822	0.019983	0.184557	207,126.03	197,262.88	9,863.14	1,659.08	1,345.61	1,972.63	7.72	4.41
94	0.259073	0.063839	0.016539	0.174110	219,902.48	209,430.93	10,471.55	1,761.42	1,552.48	2,094.31	6.40	3.66
95	0.281029	0.047300	0.013293	0.164255	233,329.18	222,218.27	11,110.91	1,868.97	1,786.87	2,222.18	5.14	2.94
96	0.304325	0.034007	0.010349	0.154957	247,420.30	235,638.38	11,781.92	2,052.47	2,052.47	2,356.38	4.01	2.29
97	0.328977	0.023658	0.007783	0.146186	262,265.52	249,776.68	12,488.83	2,353.51	2,353.51	2,497.77	3.01	1.73
98	0.375569	0.015875	0.005962	0.137912	278,001.45	264,763.29	13,238.16	2,851.84	2,851.84	2,647.63	2.31	1.32
99	0.423182	0.009913	0.004195	0.130105	294,681.54	280,649.08	14,032.45	3,410.85	3,410.85	2,806.49	1.62	0.93
100	0.471289	0.005718	0.002695	0.122741	312,362.43	297,488.03	14,874.40	0.00	0.00	2,974.88	1.04	0.00
101	0.519220	0.003023	0.001570	0.115793	331,104.18	315,337.31	15,766.87	0.00	0.00	3,153.37	0.61	0.00
102	0.566270	0.001453	0.000823	0.109239	350,970.43	334,257.55	16,712.88	0.00	0.00	3,342.58	0.32	0.00
103	0.611610	0.000630	0.000386	0.103056	372,028.65	354,313.00	17,715.65	0.00	0.00	3,543.13	0.15	0.00
104	0.652492	0.000245	0.000160	0.097222	394,350.37	375,571.78	18,778.59	0.00	0.00	3,755.72	0.06	0.00
105	0.693374	0.000085	0.000059	0.091719	418,011.39	398,106.09	19,905.30	0.00	0.00	3,981.06	0.02	0.00
106	0.715701	0.000026	0.000019	0.086527	443,092.08	421,992.45	21,099.62	0.00	0.00	4,219.92	0.01	0.00
107	0.736952	0.000007	0.000005	0.081630	469,677.60	447,312.00	22,365.60	0.00	0.00	4,473.12	0.00	0.00
108	0.756988	0.000002	0.000001	0.077009	497,858.26	474,150.72	23,707.54	0.00	0.00	4,741.51	0.00	0.00
109	0.775720	0.000000	0.000000	0.072650	527,729.75	502,599.76	25,129.99	0.00	0.00	5,026.00	0.00	0.00
110	0.792971	0.000000	0.000000	0.068538	559,393.54	532,755.75	26,637.79	0.00	0.00	5,327.56	0.00	0.00
111	0.792971	0.000000	0.000000	0.064658	592,957.15	564,721.10	28,236.05	0.00	0.00	5,647.21	0.00	0.00
112	0.792971	0.000000	0.000000	0.060998	628,534.58	598,604.36	29,930.22	0.00	0.00	5,986.04	0.00	0.00
113	0.792971	0.000000	0.000000	0.057546	666,246.65	634,520.62	31,726.03	0.00	0.00	6,345.21	0.00	0.00
114	0.792971	0.000000	0.000000	0.054288	706,221.45	672,591.86	33,629.59	0.00	0.00	6,725.92	0.00	0.00
115	0.792971	0.000000	0.000000	0.051215	748,594.74	712,947.37	35,647.37	0.00	0.00	7,129.47	0.00	0.00
116	0.986809	0.000000	0.000000	0.048316	793,510.42	755,724.21	37,786.21	0.00	0.00	7,557.24	0.00	0.00
117	1.000000	0.000000	0.000000	0.045582	841,121.05	801,067.67	40,053.38	0.00	0.00	8,010.68	0.00	0.00
118	1.000000	0.000000	0.000000	0.043001	891,588.31	849,131.73	42,456.59	0.00	0.00	8,491.32	0.00	0.00
119	1.000000	0.000000	0.000000	0.040567	945,083.61	900,079.63	45,003.98	0.00	0.00	9,000.80	0.00	0.00
120	1.000000	0.000000	0.000000	0.038271	1,001,788.63	954,084.41	47,704.22	0.00	0.00	9,540.84	0.00	0.00
Sum											5,236.93	3,261.72

* Note: the only deductions in the scenario in this example are COI charges.

Appendix B.1

Current Chronic and Critical Illness Mortality Assumption Sample Rates, Per 1,000

Female Standard Non-smoker, all Simplified Issue products

Policy Year	Issue Age	20	25	30	35	40	45	50	55	60	65	70	75
1		0.740	0.455	0.455	0.536	0.683	0.832	1.014	1.425	2.029	3.511	6.565	11.444
2		0.828	0.589	0.610	0.698	0.829	1.069	1.636	2.247	3.436	5.912	10.483	17.704
3		0.833	0.667	0.646	0.771	0.917	1.459	2.106	3.024	4.775	8.133	14.024	23.616
4		0.818	0.685	0.695	0.808	1.196	1.800	2.629	3.867	6.159	10.384	17.760	29.995
5		0.795	0.706	0.706	0.924	1.412	2.108	3.083	4.674	7.459	12.442	21.343	36.262
6		0.780	0.721	0.790	1.082	1.658	2.448	3.638	5.512	8.741	14.555	25.111	43.004
7		0.807	0.778	0.865	1.269	1.913	2.836	4.231	6.405	10.059	16.801	29.217	50.405
8		0.833	0.852	1.004	1.450	2.198	3.288	4.881	7.270	11.356	19.120	33.615	58.245
9		0.895	0.980	1.140	1.659	2.536	3.781	5.555	8.187	12.809	21.873	38.748	67.113
10		0.928	1.078	1.285	1.895	2.908	4.325	6.250	9.112	14.415	24.908	44.346	76.596
11		0.979	1.118	1.405	2.117	3.255	4.818	6.872	10.017	16.021	28.093	50.035	92.535
12		1.007	1.183	1.553	2.404	3.661	5.354	7.584	11.136	18.139	32.107	57.158	110.538
13		1.071	1.300	1.730	2.646	4.011	5.835	8.235	12.286	20.376	36.355	64.348	128.426
14		1.172	1.382	1.941	2.930	4.405	6.366	9.051	13.724	23.271	41.541	72.787	148.586
15		1.309	1.538	2.170	3.223	4.808	6.916	9.912	15.474	26.652	47.406	81.941	169.984
16		1.450	1.768	2.394	3.501	5.152	7.402	10.860	17.385	30.334	53.493	96.172	189.198
17		1.623	2.013	2.648	3.818	5.569	8.056	12.094	19.907	34.944	60.925	112.571	206.768
18		1.795	2.236	2.891	4.104	5.991	8.732	13.486	22.751	39.880	68.538	129.013	223.345
19		2.002	2.478	3.188	4.481	6.512	9.622	15.364	26.382	45.955	77.651	147.833	243.171
20		2.154	2.720	3.520	4.912	7.096	10.754	17.682	30.704	52.892	87.771	167.578	264.254
21		2.302	2.898	3.859	5.389	7.800	12.089	20.365	35.421	60.186	102.074	185.524	283.839
22		2.435	3.192	4.295	6.003	8.752	13.895	23.808	41.285	69.227	118.386	202.753	307.368
23		2.596	3.627	4.855	6.759	9.980	16.182	27.928	48.057	79.594	135.552	221.155	332.267
24		2.763	4.084	5.494	7.687	11.466	18.787	32.461	55.360	90.639	151.577	238.403	375.569
25		2.983	4.630	6.409	8.972	13.456	22.125	38.064	64.355	104.525	168.478	259.073	423.182
26		3.212	5.185	7.589	10.637	15.887	26.063	44.407	74.259	119.874	183.687	281.029	471.289
27		3.494	5.660	8.117	11.430	17.438	28.953	49.359	82.039	131.126	200.745	304.325	519.220
28		3.864	6.118	8.663	12.337	19.191	32.213	54.795	90.453	143.136	218.966	328.977	566.270
29		4.278	6.620	9.263	13.368	21.182	35.861	60.734	99.547	155.948	238.403	375.569	611.610
30		4.735	7.095	9.906	14.531	23.464	39.913	67.210	109.327	169.624	259.073	423.182	652.492
31		5.185	7.589	10.637	15.887	26.063	44.407	74.259	119.874	183.687	281.029	471.289	693.374
32		5.660	8.117	11.430	17.438	28.953	49.359	82.039	131.126	200.745	304.325	519.220	715.701
33		6.118	8.663	12.337	19.191	32.213	54.795	90.453	143.136	218.966	328.977	566.270	736.952
34		6.620	9.263	13.368	21.182	35.861	60.734	99.547	155.948	238.403	375.569	611.610	756.988
35		7.095	9.906	14.531	23.464	39.913	67.210	109.327	169.624	259.073	423.182	652.492	775.720
36		7.589	10.637	15.887	26.063	44.407	74.259	119.874	183.687	281.029	471.289	693.374	792.971
37		8.117	11.430	17.438	28.953	49.359	82.039	131.126	200.745	304.325	519.220	715.701	792.971
38		8.663	12.337	19.191	32.213	54.795	90.453	143.136	218.966	328.977	566.270	736.952	792.971
39		9.263	13.368	21.182	35.861	60.734	99.547	155.948	238.403	375.569	611.610	756.988	792.971
40		9.906	14.531	23.464	39.913	67.210	109.327	169.624	259.073	423.182	652.492	775.720	792.971
41		10.637	15.887	26.063	44.407	74.259	119.874	183.687	281.029	471.289	693.374	792.971	792.971
42		11.430	17.438	28.953	49.359	82.039	131.126	200.745	304.325	519.220	715.701	792.971	986.809
43		12.337	19.191	32.213	54.795	90.453	143.136	218.966	328.977	566.270	736.952	792.971	1000.000
44		13.368	21.182	35.861	60.734	99.547	155.948	238.403	375.569	611.610	756.988	792.971	1000.000
45		14.531	23.464	39.913	67.210	109.327	169.624	259.073	423.182	652.492	775.720	792.971	1000.000
46		15.887	26.063	44.407	74.259	119.874	183.687	281.029	471.289	693.374	792.971	792.971	1000.000
47		17.438	28.953	49.359	82.039	131.126	200.745	304.325	519.220	715.701	792.971	986.809	1000.000
48		19.191	32.213	54.795	90.453	143.136	218.966	328.977	566.270	736.952	792.971	1000.000	1000.000
49		21.182	35.861	60.734	99.547	155.948	238.403	375.569	611.610	756.988	792.971	1000.000	1000.000
50		23.464	39.913	67.210	109.327	169.624	259.073	423.182	652.492	775.720	792.971	1000.000	1000.000
51		26.063	44.407	74.259	119.874	183.687	281.029	471.289	693.374	792.971	792.971	1000.000	1000.000
52		28.953	49.359	82.039	131.126	200.745	304.325	519.220	715.701	792.971	986.809	1000.000	1000.000
53		32.213	54.795	90.453	143.136	218.966	328.977	566.270	736.952	792.971	1000.000	1000.000	1000.000
54		35.861	60.734	99.547	155.948	238.403	375.569	611.610	756.988	792.971	1000.000	1000.000	1000.000
55		39.913	67.210	109.327	169.624	259.073	423.182	652.492	775.720	792.971	1000.000	1000.000	1000.000
56		44.407	74.259	119.874	183.687	281.029	471.289	693.374	792.971	792.971	1000.000	1000.000	1000.000
57		49.359	82.039	131.126	200.745	304.325	519.220	715.701	792.971	986.809	1000.000	1000.000	1000.000
58		54.795	90.453	143.136	218.966	328.977	566.270	736.952	792.971	1000.000	1000.000	1000.000	1000.000
59		60.734	99.547	155.948	238.403	375.569	611.610	756.988	792.971	1000.000	1000.000	1000.000	1000.000
60		67.210	109.327	169.624	259.073	423.182	652.492	775.720	792.971	1000.000	1000.000	1000.000	1000.000
61		74.259	119.874	183.687	281.029	471.289	693.374	792.971	792.971	1000.000	1000.000	1000.000	1000.000
62		82.039	131.126	200.745	304.325	519.220	715.701	792.971	986.809	1000.000	1000.000	1000.000	1000.000
63		90.453	143.136	218.966	328.977	566.270	736.952	792.971	1000.000	1000.000	1000.000	1000.000	1000.000
64		99.547	155.948	238.403	375.569	611.610	756.988	792.971	1000.000	1000.000	1000.000	1000.000	1000.000
65		109.327	169.624	259.073	423.182	652.492	775.720	792.971	1000.000	1000.000	1000.000	1000.000	1000.000
66		119.874	183.687	281.029	471.289	693.374	792.971	792.971	1000.000	1000.000	1000.000	1000.000	1000.000
67		131.126	200.745	304.325	519.220	715.701	792.971	986.809	1000.000	1000.000	1000.000	1000.000	1000.000
68		143.136	218.966	328.977	566.270	736.952	792.971	1000.000	1000.000	1000.000	1000.000	1000.000	1000.000
69		155.948	238.403	375.569	611.610	756.988	792.971	1000.000	1000.000	1000.000	1000.000	1000.000	1000.000
70		169.624	259.073	423.182	652.492	775.720	792.971	1000.000	1000.000	1000.000	1000.000	1000.000	1000.000
71		183.687	281.029	471.289	693.374	792.971	792.971	1000.000	1000.000	1000.000	1000.000	1000.000	1000.000
72		200.745	304.325	519.220	715.701	792.971	986.809	1000.000	1000.000	1000.000	1000.000	1000.000	1000.000
73		218.966	328.977	566.270	736.952	792.971	1000.000	1000.000	1000.000	1000.000	1000.000	1000.000	1000.000
74		238.403	375.569	611.610	756.988	792.971	1000.000	1000.000	1000.000	1000.000	1000.000	1000.000	1000.000
75		259.073	423.182	652.492	775.720	792.971	1000.000	1000.000	1000.000	1000.000	1000.000	1000.000	1000.000
76		281.029	471.289	693.374	792.971	792.971	1000.000	1000.000	1000.000	1000.000	1000.000	1000.000	1000.000
77		304.325	519.220	715.701	792.971	986.809	1000.000	1000.000	1000.000	1000.000	1000.000	1000.000	1000.000
78		328.977	566.270	736.952	792.971	1000.000	1000.000	1000.000	1000.000	1000.000	1000.000	1000.000	1000.000
79		375.569	611.610	756.988	792.971	1000.000	1000.000	1000.000	1000.000	1000.000	1000.000	1000.000	1000.000
80		423.182	652.492	775.720	792								

Current Chronic and Critical Illness Mortality Assumption Sample Rates, Per 1,000

Male Standard Non-smoker, all Simplified Issue products

Policy Year	Issue Age	20	25	30	35	40	45	50	55	60	65	70	75
1	1	1.777	1.287	0.695	0.740	0.911	1.116	1.640	2.825	4.761	7.882	13.839	25.095
2	1	1.820	1.144	0.850	1.025	1.297	1.755	2.736	4.338	6.976	11.620	20.450	35.964
3	1	1.823	1.094	0.958	1.167	1.531	2.250	3.521	5.459	8.783	14.994	26.508	46.080
4	1	1.840	1.135	1.053	1.267	1.768	2.719	4.191	6.501	10.632	18.586	33.115	56.951
5	1	1.789	1.152	1.083	1.292	1.987	3.120	4.730	7.374	12.334	21.985	39.420	67.157
6	1	1.677	1.160	1.091	1.413	2.232	3.490	5.313	8.364	14.243	25.728	46.118	77.775
7	1	1.576	1.172	1.153	1.556	2.517	3.901	5.939	9.446	16.376	29.794	53.268	89.140
8	1	1.506	1.174	1.278	1.809	2.869	4.404	6.678	10.742	18.881	34.115	60.646	100.586
9	1	1.498	1.244	1.432	2.139	3.326	5.032	7.653	12.291	21.454	39.120	68.990	113.127
10	1	1.438	1.250	1.658	2.485	3.835	5.765	8.759	13.444	24.774	44.717	77.759	128.474
11	1	1.543	1.590	1.931	2.855	4.443	6.533	9.881	15.834	27.622	49.951	86.163	145.402
12	1	1.636	1.784	2.199	3.262	4.963	7.458	11.277	18.016	31.440	56.525	96.661	167.154
13	1	1.694	1.941	2.444	3.624	5.547	8.358	12.634	20.234	35.345	63.131	106.707	187.523
14	1	1.794	2.123	2.700	4.027	6.234	9.374	14.172	22.835	40.043	70.899	118.179	215.813
15	1	1.886	2.270	2.938	4.467	6.948	10.436	15.820	25.747	45.281	79.336	130.102	249.594
16	1	1.967	2.402	3.191	4.868	7.588	11.396	17.409	28.747	50.660	87.601	146.784	252.887
17	1	2.094	2.556	3.472	5.394	8.322	12.503	19.359	32.447	57.156	97.699	165.926	283.251
18	1	2.209	2.729	3.797	5.844	8.996	13.549	21.389	36.545	63.779	107.463	184.334	313.761
19	1	2.353	2.926	4.174	6.401	9.768	14.851	23.958	41.240	71.712	118.840	211.663	347.078
20	1	2.523	3.349	4.966	7.584	10.594	16.378	27.000	46.836	80.445	135.902	244.794	380.779
21	1	2.703	3.449	5.396	8.171	11.575	17.420	28.550	50.626	89.133	146.977	260.475	405.775
22	1	2.943	3.805	5.520	8.214	12.580	20.388	34.760	59.835	99.924	165.476	278.251	436.900
23	1	3.201	4.214	6.116	9.049	14.109	23.269	39.812	67.824	111.794	185.219	310.180	467.993
24	1	3.503	4.674	6.730	10.078	15.941	26.551	45.247	76.048	123.621	207.513	340.273	499.836
25	1	3.873	5.263	7.604	11.530	18.494	30.795	51.878	85.949	138.159	239.994	372.626	540.965
26	1	4.243	5.985	8.801	13.511	21.690	35.726	59.048	95.976	154.026	245.522	401.191	581.777
27	1	4.524	6.434	9.558	14.813	23.917	39.522	65.214	105.800	169.633	275.496	432.575	620.491
28	1	4.841	6.935	10.403	16.266	26.436	43.723	71.970	116.311	186.683	307.109	463.360	655.840
29	1	5.184	7.507	11.336	17.877	29.210	48.338	79.308	127.607	207.513	340.273	499.836	685.938
30	1	5.554	8.097	12.348	19.691	32.300	53.455	87.307	139.627	239.994	372.626	540.965	710.855
31	1	5.985	8.801	13.511	21.690	35.726	59.048	95.976	154.026	245.522	401.191	581.777	732.794
32	1	6.343	9.349	14.217	23.917	39.522	65.214	105.800	169.633	275.496	432.575	620.491	792.971
33	1	6.935	10.403	16.266	26.436	43.723	71.970	116.311	186.683	307.109	463.360	655.840	770.345
34	1	7.507	11.336	17.877	29.210	48.338	79.308	127.607	207.513	340.273	499.836	685.938	779.984
35	1	8.097	12.348	19.691	32.300	53.455	87.307	139.627	239.994	372.626	540.965	710.855	787.544
36	1	8.801	13.511	21.690	35.726	59.048	95.976	154.026	245.522	401.191	581.777	732.794	792.971
37	1	9.558	14.813	23.917	39.522	65.214	105.800	169.633	275.496	432.575	620.491	752.265	792.971
38	1	10.403	16.266	26.436	43.723	71.970	116.311	186.683	307.109	463.360	655.840	770.345	792.971
39	1	11.336	17.877	29.210	48.338	79.308	127.607	207.513	340.273	499.836	685.938	779.984	792.971
40	1	12.348	19.691	32.300	53.455	87.307	139.627	239.994	372.626	540.965	710.855	787.544	792.971
41	1	13.511	21.690	35.726	59.048	95.976	154.026	245.522	401.191	581.777	732.794	792.971	792.971
42	1	14.813	23.917	39.522	65.214	105.800	169.633	275.496	432.575	620.491	752.265	792.971	792.971
43	1	16.266	26.436	43.723	71.970	116.311	186.683	307.109	463.360	655.840	770.345	792.971	1000.000
44	1	17.877	29.210	48.338	79.308	127.607	207.513	340.273	499.836	685.938	779.984	792.971	1000.000
45	1	19.691	32.300	53.455	87.307	139.627	239.994	372.626	540.965	710.855	787.544	792.971	1000.000
46	1	21.690	35.726	59.048	95.976	154.026	245.522	401.191	581.777	732.794	792.971	792.971	1000.000
47	1	23.917	39.522	65.214	105.800	169.633	275.496	432.575	620.491	752.265	792.971	792.971	1000.000
48	1	26.436	43.723	71.970	116.311	186.683	307.109	463.360	655.840	770.345	792.971	1000.000	1000.000
49	1	29.210	48.338	79.308	127.607	207.513	340.273	499.836	685.938	779.984	792.971	1000.000	1000.000
50	1	32.300	53.455	87.307	139.627	239.994	372.626	540.965	710.855	787.544	792.971	1000.000	1000.000
51	1	35.726	59.048	95.976	154.026	245.522	401.191	581.777	732.794	792.971	792.971	1000.000	1000.000
52	1	39.522	65.214	105.800	169.633	275.496	432.575	620.491	752.265	792.971	792.971	1000.000	1000.000
53	1	43.723	71.970	116.311	186.683	307.109	463.360	655.840	770.345	792.971	1000.000	1000.000	1000.000
54	1	48.338	79.308	127.607	207.513	340.273	499.836	685.938	779.984	792.971	1000.000	1000.000	1000.000
55	1	53.455	87.307	139.627	239.994	372.626	540.965	710.855	787.544	792.971	1000.000	1000.000	1000.000
56	1	59.048	95.976	154.026	245.522	401.191	581.777	732.794	792.971	792.971	1000.000	1000.000	1000.000
57	1	65.214	105.800	169.633	275.496	432.575	620.491	752.265	792.971	792.971	1000.000	1000.000	1000.000
58	1	71.970	116.311	186.683	307.109	463.360	655.840	770.345	792.971	1000.000	1000.000	1000.000	1000.000
59	1	79.308	127.607	207.513	340.273	499.836	685.938	779.984	792.971	1000.000	1000.000	1000.000	1000.000
60	1	87.307	139.627	239.994	372.626	540.965	710.855	787.544	792.971	1000.000	1000.000	1000.000	1000.000
61	1	95.976	154.026	245.522	401.191	581.777	732.794	792.971	792.971	1000.000	1000.000	1000.000	1000.000
62	1	105.800	169.633	275.496	432.575	620.491	752.265	792.971	792.971	1000.000	1000.000	1000.000	1000.000
63	1	116.311	186.683	307.109	463.360	655.840	770.345	792.971	1000.000	1000.000	1000.000	1000.000	1000.000
64	1	127.607	207.513	340.273	499.836	685.938	779.984	792.971	1000.000	1000.000	1000.000	1000.000	1000.000
65	1	139.627	239.994	372.626	540.965	710.855	787.544	792.971	1000.000	1000.000	1000.000	1000.000	1000.000
66	1	154.026	245.522	401.191	581.777	732.794	792.971	792.971	1000.000	1000.000	1000.000	1000.000	1000.000
67	1	169.633	275.496	432.575	620.491	752.265	792.971	792.971	1000.000	1000.000	1000.000	1000.000	1000.000
68	1	186.683	307.109	463.360	655.840	770.345	792.971	1000.000	1000.000	1000.000	1000.000	1000.000	1000.000
69	1	207.513	340.273	499.836	685.938	779.984	792.971	1000.000	1000.000	1000.000	1000.000	1000.000	1000.000
70	1	239.994	372.626	540.965	710.855	787.544	792.971	1000.000	1000.000	1000.000	1000.000	1000.000	1000.000
71	1	245.522	401.191	581.777	732.794	792.971	792.971	1000.000	1000.000	1000.000	1000.000	1000.000	1000.000
72	1	275.496	432.575	620.491	752.265	792.971	792.971	1000.000	1000.000	1000.000	1000.000	1000.000	1000.000
73	1	307.109	463.360	655.840	770.345	792.971	792.971	1000.000	1000.000	1000.000	1000.000	1000.000	1000.000
74	1	340.273	499.836	685.938	779.984	792.971	792.971	1000.000	1000.000	1000.000	1000.000	1000.000	1000.000
75	1	372.626	540.965	710.855	787.544	792.971	792.971	1000.000	1000.000	1000.000	1000.000	1000.000	1000.000
76	1	401.191	581.777	732.794	792.971	792.971	792.971	1000.000	1000.000	1000.000	1000.000	1000.000	1000.000
77	1	432.575	620.491	752.265	792.971	792.971	792.971	1000.000	1000.000	1000.000	1000.000	1000.000	1000.000
78	1	463.360	655.840	770.345	792.971	1000.000	1000.000	1000.000	1000.000	1000.000	1000.000	1000.000	1000.000
79	1	499.836	685.938	779.984	792.971	1000.000	1000.000	1000.000	1000.000	1000.000	1000.000	1000.000	1000.000

THE INDEPENDENT ORDER OF FORESTERS
ACTUARIAL MEMORANDUM
Accelerated Death Benefit Rider (for Critical and Terminal Illness)
UL-ABRCRTI-XX-2014

(XX will be replaced by US if your state uses the US general version,
or, if a variation, the postal abbreviation for your state)

Purpose and Scope

This actuarial memorandum has been prepared to support the filing of the above indicated accelerated death benefit rider. It has been prepared for the purpose of demonstrating compliance with regulatory authorities and may not be appropriate for other purposes.

Rider Description

This rider provides the opportunity for the owner to, during the lifetime of the insured, accelerate a portion of the certificate's eligible death benefit and receive an accelerated death benefit payment, if the insured is diagnosed with a critical or terminal illness. The accelerated death benefit payment is paid to the owner in lieu of payment, to the beneficiary(ies) upon the death of the insured, of the portion of the eligible death benefit being accelerated.

There are no monthly rider deductions for this rider and the rider will automatically be added to each eligible certificate issued, subject to Foresters then current business rules with respect to eligibility for this rider. Our current rider eligibility rules are outlined in the cover letter submitted with this filing.

To be eligible for an accelerated death benefit payment the owner must submit proof, including certification by a physician of his/her diagnosis, that the insured has a critical or terminal illness, as described below:

Critical Illness

The insured has one of the following medical conditions:

- Advanced Alzheimer's Disease;
- Amyotrophic Lateral Sclerosis (ALS);
- End stage renal failure (kidney failure);
- Life threatening (invasive) cancer;
- Major organ failure;
- Myocardial infarction (heart attack); or
- Stroke.

Terminal Illness

The insured has a non-correctable illness or physical condition which is reasonably expected to result in death within 12 months of diagnosis.

Acceleration Amount Limits

The portion of the eligible death benefit (the certificate's face amount) that the owner can request to be accelerated, is referred to as the acceleration amount and is subject to the following limits:

Overall Limit

The total of all acceleration amounts under any one certificate cannot be greater than the lesser of the maximum lifetime acceleration amount and 95% of the eligible death benefit on the effective date of the initial acceleration under the rider.

The maximum lifetime acceleration amount, applicable for the lifetime of that rider, will be shown for each rider on the certificate data pages. Our current maximum lifetime acceleration amount is \$500,000.00.

Individual Claim Limits

- Each acceleration amount must be at least equal to the minimum acceleration amount. The minimum acceleration amount, applicable for the lifetime of the rider, will be shown on the certificate data pages. Our current minimum acceleration amount is \$4,500.00.
- Each acceleration amount must be an amount such that the certificate's face amount after acceleration is least equal to the residual face amount. The residual face amount, applicable for the lifetime of the rider, will be shown on the certificate data pages. Our current residual face amount is \$10,000.00.

Limit by Type of Illness

For critical or terminal illness - The maximum acceleration amount is 95% of the eligible death benefit on the effective date of the payment.

Administrative Fee

At the time of claim an administrative fee will be deducted in the calculation of the accelerated death benefit payment. The administrative fee covers the costs of processing the accelerated death benefit claim.

The administrative fee will vary depending on the type of claim and are currently:

- For critical illness - \$300.00
- For terminal illness - \$0.00

Since a claim for an accelerated death benefit could be received years, even decades, after the issue date of the rider we may increase our administrative fee, for critical illness only, subject to a maximum administrative fee set at issue. For each rider issued the maximum administrative fee, applicable for the lifetime of that rider, will be shown on the certificate data pages. Our current maximum administrative fee will be \$500.00, which will allow us to increase the administrative fee that will actually be charged, based upon processing cost increases that could occur over the timeframe that the coverage could be provided under the rider. As indicated in our statement of variability we may also increase that maximum administrative fee to up to \$1,000.00, without re-filing, if in the future costs increase to a point where an increase to the maximum is justified.

Accelerated Death Benefit Payment (ADBP)

The ADBP will be determined based on a number of factors such as:

- The acceleration amount (AA) requested;
- The company's expectation of the future mortality of the insured;
- The accelerated death benefit interest rate;
- The future anticipated premiums;
- The future monthly deductions including COI charges;
- The account value, if any;

- The loan amount, if any; and
- The cash value, if any.

The formula used to determine the ADBP is detailed below. For this purpose the following terms are defined:

AF	The Acceleration Factor. Equal to the AA divided by the eligible death benefit on the effective date of that ADBP.
LRA	The Loan Repayment Amount. Equal to the AF multiplied by the loan amount, if any, on the effective date of that ADBP.
Fee	The applicable administrative fee.

Any overdue monthly deductions will be deducted from the ADBP. The ADBP will be at least equal to the cash value multiplied by the AF. The ADBP will be paid in a lump sum.

Sample ADBP calculations are provided in Appendix A.

ADBP Formula – Critical Illness

At the time of the initial ADBP, a certificate with the Increasing Death Benefit option will be changed to the Level Death Benefit option.

ADBP is equal to:

$$AAV + PVFNAR - PVFDED - LRA - Fee$$

Where:

AAV	The Accelerated Account Value. Equal to the AF multiplied by the Account Value at the effective date of the ADBP.
PVFNAR	The present value of the accelerated portion, i.e. AF, of the projected annual Net Amounts at Risk using the NAR at the effective date of the ADBP as the initial value. For purposes of projecting the NARs: (A) projected account values (i) assume that premiums will continue to be paid at current levels but will be increased as needed to cover total deductions, (ii) account for deductions including COI charges, and (iii) accumulate at the Accelerated Benefit Interest Rate; and (B) projected death benefits take into account 7702 corridor factors.
PVFDED	The present value of deductions including COI charges in respect of the projected annual accelerated Net Amounts at Risk (ANAR) used to determine PVFNAR.

Present values are taken over the period from the effective date of the ADBP to attained age 120.

ADBP Formula – Terminal Illness

The discounting rate for a terminal illness claim is 0%. The current mortality assumption for terminal illness is 100%. There is no administrative fee charged for a terminal illness claim.

The ADBP formula above thus simplifies to be:

$$AA - LRA$$

Accelerated Death Benefit Interest Rate

The interest rate used for discounting will not exceed the greater of:

- the current yield on 90-day U.S. Treasury Bills; and
- the maximum adjustable loan interest rate permitted under the NAIC Model Policy Loan Interest Rate Bill, as amended or superseded.

For terminal illness claims the interest rate used will be 0%.

Mortality

Present values are based on mortality rates which represent the company's expectation regarding mortality experience for individuals who are diagnosed to be critically or terminally ill, as applicable. The assumed mortality rates are not guaranteed and may be changed by the company. The mortality rates used will be sex distinct if the base certificate is issued on a sex distinct basis, while male mortality rates will be used if the base certificate is issued on a unisex basis. Samples of the current mortality assumptions for critical illness are shown in Appendix B; they are based on a multiple of the mortality assumption for standard risks. The current mortality assumption for terminal illness is 100%.

Effect of Acceleration on Policy Values

All applicable certificate values, such as face amount, account value and loan amount, will be reduced on a pro-rata basis based upon the acceleration factor. The COI charge rates will not be affected. After acceleration, monthly deductions including COI charges will be as if the certificate had been issued at the reduced amount.

Reserves

Reserves for the base certificate to which this rider is attached will be determined as described in the Actuarial Memorandum for the base certificate, and will disregard the benefits provided by this rider. Since the ADBP is actuarially equivalent to the payment of the AA, and the reserves established for the base certificate cover the AA, no additional reserves are required for this rider.

Lynn M. Manchester, F.S.A., M.A.A.A.
AVP, Product Actuarial
Foresters

June 16, 2014

Date

Appendix A

Sample Calculation for a Universal Life Certificate

Female, Standard Non-Smoker, Issue Age 40

Election age	65	
Eligible death benefit	150,000.00	
Loan	10,000.00	
Account value	37,581.11	
Cash value	27,581.11	
Acceleration Amount requested (AA)	30,000.00	
Acceleration Factor (AF)	20.00%	
Accelerated Death Benefit Interest Rate	6.00%	Critical only
Accelerated Account Value (AAV)	7,516.22	
Accelerated Net Amount at Risk (ANAR)	22,483.78	AA - AAV
PVFNAR	5,236.93	See following page
PVFEED	3,261.72	See following page
Loan Repayment Amount (LRA)	2,000.00	
Administration fee	300.00	Critical only

Accelerated Death Benefit Payment (ADBP):

Critical Illness ADBP

$$\begin{aligned}
 &= \text{AAV} + \text{PVFNAR} - \text{PVFEED} - \text{LRA} - \text{Fee} \\
 &= 7,516.22 + 5,236.93 - 3,261.72 - 2,000.00 - 300.00 \\
 &= 7,191.43
 \end{aligned}$$

Terminal Illness ADBP

$$\begin{aligned}
 &= \text{AA} - \text{LRA} \\
 &= 30,000.00 - 2,000.00 \\
 &= 28,000.00
 \end{aligned}$$

Minimum ADBP

$$\begin{aligned}
 &= \text{AF} \times \text{CV} \\
 &= 20\% \times 27,581.11 \\
 &= 5,516.22
 \end{aligned}$$

Effects on Certificate Values

Certificate values are multiplied by 1 - AF. COI charge rates unchanged.

	<u>Before Acceleration</u>	<u>After Acceleration</u>
Death benefit	150,000.00	120,000.00
Loan	10,000.00	8,000.00
Account value	37,581.11	30,064.89
Cash value	27,581.11	22,064.89

Attained Age	Critical Illness Mortality	Remaining Lives	Deaths	Discount Factor	Death Benefit	Account Value	NAR	Premium	COI Charge on NAR *	Accelerated NAR (ANAR)	PVFNAR	PVFDDED
65	0.015887	1.000000	0.015887	0.943396	150,000.00	37,581.11	112,418.89	1,201.50	1,002.69	22,483.78	329.59	200.54
66	0.017438	0.984113	0.017161	0.889996	150,000.00	40,046.71	109,953.29	1,201.50	1,076.12	21,990.66	328.12	199.82
67	0.019191	0.966952	0.018557	0.839619	150,000.00	42,582.42	107,417.58	1,201.50	1,156.69	21,483.52	326.62	199.09
68	0.021182	0.948396	0.020089	0.792094	150,000.00	45,184.86	104,815.14	1,244.96	1,244.96	20,963.03	324.94	198.27
69	0.023464	0.928307	0.021782	0.747258	150,000.00	47,895.95	102,104.05	1,341.67	1,341.67	20,420.81	323.03	197.31
70	0.026063	0.906525	0.023627	0.704961	150,000.00	50,769.70	99,230.30	1,446.23	1,446.23	19,846.06	320.41	195.94
71	0.028953	0.882898	0.025562	0.665057	150,000.00	53,815.89	96,184.11	1,554.80	1,554.80	19,236.82	316.06	193.54
72	0.032213	0.857336	0.027617	0.627412	150,000.00	57,044.84	92,955.16	1,668.79	1,668.79	18,591.03	310.27	190.30
73	0.035861	0.829719	0.029754	0.591898	150,000.00	60,467.53	89,532.47	1,785.72	1,785.72	17,906.49	302.58	185.92
74	0.039913	0.799964	0.031929	0.558395	150,000.00	64,095.58	85,904.42	1,902.64	1,902.64	17,180.88	292.61	180.18
75	0.044407	0.768035	0.034106	0.526788	150,000.00	67,941.32	82,058.68	2,017.05	2,017.05	16,411.74	280.22	173.01
76	0.049359	0.733929	0.036226	0.496969	150,000.00	72,017.79	77,982.21	2,124.80	2,124.80	15,596.44	265.23	164.30
77	0.054795	0.697703	0.038231	0.468839	150,000.00	76,338.86	73,661.14	2,221.46	2,221.46	14,732.23	247.64	154.05
78	0.060734	0.659473	0.040052	0.442301	150,000.00	80,919.19	69,080.81	2,301.56	2,301.56	13,816.16	227.55	142.32
79	0.067210	0.619420	0.041631	0.417265	150,000.00	85,774.35	64,225.65	2,359.62	2,359.62	12,845.13	205.26	129.29
80	0.074259	0.577789	0.042906	0.393646	150,000.00	90,920.81	59,079.19	2,388.95	2,388.95	11,815.84	181.14	115.19
81	0.082039	0.534883	0.043881	0.371364	150,000.00	96,376.05	53,623.95	2,385.48	2,385.48	10,724.79	155.92	100.45
82	0.090453	0.491002	0.044413	0.350344	150,000.00	102,158.62	47,841.38	2,335.85	2,335.85	9,568.28	129.81	85.18
83	0.099547	0.446589	0.044456	0.330513	150,000.00	108,288.14	41,711.86	2,230.36	2,230.36	8,342.37	103.48	69.79
84	0.109327	0.402133	0.043964	0.311805	150,000.00	114,785.42	35,214.58	2,057.13	2,057.13	7,042.92	77.66	54.68
85	0.119874	0.358169	0.042935	0.294155	150,000.00	121,672.55	28,327.45	1,804.29	1,804.29	5,665.49	53.11	40.30
86	0.131126	0.315234	0.041335	0.277505	150,000.00	128,972.90	21,027.10	1,456.30	1,456.30	4,205.42	30.49	27.01
87	0.143136	0.273898	0.039205	0.261797	150,000.00	136,711.28	13,288.72	1,201.50	981.82	2,657.74	14.90	14.93
88	0.155948	0.234694	0.036600	0.246979	152,404.15	145,146.81	7,257.34	1,220.76	647.67	1,451.47	13.96	7.96
89	0.169624	0.198094	0.033601	0.232999	162,186.25	154,463.10	7,723.15	1,299.11	749.68	1,544.63	12.86	7.34
90	0.183687	0.164492	0.030215	0.219810	172,528.95	164,313.28	8,215.66	1,381.96	863.61	1,643.13	11.60	6.62
91	0.200745	0.134277	0.026955	0.207368	183,457.61	174,721.53	8,736.08	1,469.50	1,003.58	1,747.22	10.38	5.92
92	0.218966	0.107322	0.023500	0.195630	194,983.63	185,698.69	9,284.93	1,561.82	1,163.45	1,856.99	9.07	5.18
93	0.238403	0.083822	0.019983	0.184557	207,126.03	197,262.88	9,863.14	1,659.08	1,345.61	1,972.63	7.72	4.41
94	0.259073	0.063839	0.016539	0.174110	219,902.48	209,430.93	10,471.55	1,761.42	1,552.48	2,094.31	6.40	3.66
95	0.281029	0.047300	0.013293	0.164255	233,329.18	222,218.27	11,110.91	1,868.97	1,786.87	2,222.18	5.14	2.94
96	0.304325	0.034007	0.010349	0.154957	247,420.30	235,638.38	11,781.92	2,052.47	2,052.47	2,356.38	4.01	2.29
97	0.328977	0.023658	0.007783	0.146186	262,265.52	249,776.68	12,488.83	2,353.51	2,353.51	2,497.77	3.01	1.73
98	0.375569	0.015875	0.005962	0.137912	278,001.45	264,763.29	13,238.16	2,851.84	2,851.84	2,647.63	2.31	1.32
99	0.423182	0.009913	0.004195	0.130105	294,681.54	280,649.08	14,032.45	3,410.85	3,410.85	2,806.49	1.62	0.93
100	0.471289	0.005718	0.002695	0.122741	312,362.43	297,488.03	14,874.40	0.00	0.00	2,974.88	1.04	0.00
101	0.519220	0.003023	0.001570	0.115793	331,104.18	315,337.31	15,766.87	0.00	0.00	3,153.37	0.61	0.00
102	0.566270	0.001453	0.000823	0.109239	350,970.43	334,257.55	16,712.88	0.00	0.00	3,342.58	0.32	0.00
103	0.611610	0.000630	0.000386	0.103056	372,028.65	354,313.00	17,715.65	0.00	0.00	3,543.13	0.15	0.00
104	0.652492	0.000245	0.000160	0.097222	394,350.37	375,571.78	18,778.59	0.00	0.00	3,755.72	0.06	0.00
105	0.693374	0.000085	0.000059	0.091719	418,011.39	398,106.09	19,905.30	0.00	0.00	3,981.06	0.02	0.00
106	0.715701	0.000026	0.000019	0.086527	443,092.08	421,992.45	21,099.62	0.00	0.00	4,219.92	0.01	0.00
107	0.736952	0.000007	0.000005	0.081630	469,677.60	447,312.00	22,365.60	0.00	0.00	4,473.12	0.00	0.00
108	0.756988	0.000002	0.000001	0.077009	497,858.26	474,150.72	23,707.54	0.00	0.00	4,741.51	0.00	0.00
109	0.775720	0.000000	0.000000	0.072650	527,729.75	502,599.76	25,129.99	0.00	0.00	5,026.00	0.00	0.00
110	0.792971	0.000000	0.000000	0.068538	559,393.54	532,755.75	26,637.79	0.00	0.00	5,327.56	0.00	0.00
111	0.792971	0.000000	0.000000	0.064658	592,957.15	564,721.10	28,236.05	0.00	0.00	5,647.21	0.00	0.00
112	0.792971	0.000000	0.000000	0.060998	628,534.58	598,604.36	29,930.22	0.00	0.00	5,986.04	0.00	0.00
113	0.792971	0.000000	0.000000	0.057546	666,246.65	634,520.62	31,726.03	0.00	0.00	6,345.21	0.00	0.00
114	0.792971	0.000000	0.000000	0.054288	706,221.45	672,591.86	33,629.59	0.00	0.00	6,725.92	0.00	0.00
115	0.792971	0.000000	0.000000	0.051215	748,594.74	712,947.37	35,647.37	0.00	0.00	7,129.47	0.00	0.00
116	0.986809	0.000000	0.000000	0.048316	793,510.42	755,724.21	37,786.21	0.00	0.00	7,557.24	0.00	0.00
117	1.000000	0.000000	0.000000	0.045582	841,121.05	801,067.67	40,053.38	0.00	0.00	8,010.68	0.00	0.00
118	1.000000	0.000000	0.000000	0.043001	891,588.31	849,131.73	42,456.59	0.00	0.00	8,491.32	0.00	0.00
119	1.000000	0.000000	0.000000	0.040567	945,083.61	900,079.63	45,003.98	0.00	0.00	9,000.80	0.00	0.00
120	1.000000	0.000000	0.000000	0.038271	1,001,788.63	954,084.41	47,704.22	0.00	0.00	9,540.84	0.00	0.00
Sum											5,236.93	3,261.72

* Note: the only deductions in the scenario in this example are COI charges.

Current Critical Illness Mortality Assumption Sample Rates, Per 1,000

Player	Year	Issue Age										
		20	25	30	35	40	45	50	55	60	65	70
1	1	0.740	0.455	0.455	0.536	0.683	0.832	1.014	1.425	2.029	3.511	11.444
2	2	0.828	0.589	0.610	0.698	0.829	1.069	1.636	2.247	3.436	5.912	10.483
3	3	0.833	0.667	0.646	0.771	0.917	1.459	2.106	3.024	4.775	8.133	14.024
4	4	0.818	0.685	0.695	0.808	1.196	1.800	2.629	3.867	6.159	10.384	17.760
5	5	0.795	0.706	0.706	0.924	1.412	2.108	3.083	4.674	7.459	12.442	21.343
6	6	0.780	0.721	0.790	1.082	1.658	2.448	3.638	5.512	8.741	14.555	25.111
7	7	0.807	0.778	0.865	1.269	1.913	2.836	4.231	6.405	10.059	16.801	29.217
8	8	0.833	0.852	1.004	1.450	2.198	3.288	4.881	7.270	11.356	19.120	33.615
9	9	0.895	0.980	1.140	1.659	2.536	3.781	5.555	8.187	12.809	21.783	38.748
10	10	0.928	1.078	1.288	1.895	2.932	4.325	6.415	9.545	14.215	24.764	42.894
11	11	0.979	1.118	1.405	2.117	3.255	4.818	6.872	10.017	16.021	28.093	50.035
12	12	1.007	1.183	1.553	2.404	3.661	5.354	7.584	11.136	18.139	32.107	57.158
13	13	1.071	1.300	1.730	2.646	4.011	5.835	8.235	12.286	20.376	36.355	64.348
14	14	1.172	1.382	1.941	2.930	4.405	6.366	9.051	13.724	23.271	41.541	72.787
15	15	1.309	1.538	2.170	3.223	4.808	6.916	9.912	15.474	26.652	47.406	81.941
16	16	1.450	1.768	2.394	3.501	5.152	7.402	10.860	17.385	30.334	53.493	96.172
17	17	1.623	2.013	2.648	3.818	5.569	8.056	12.094	19.907	34.944	60.925	112.571
18	18	1.795	2.236	2.891	4.104	5.991	8.732	13.486	22.751	39.880	68.538	129.013
19	19	2.002	2.478	3.188	4.481	6.512	9.622	15.364	26.382	45.955	77.651	147.833
20	20	2.154	2.720	3.520	4.912	7.086	10.754	17.682	30.704	52.892	87.771	167.578
21	21	2.302	2.988	3.959	5.389	7.900	12.089	20.369	35.411	61.866	104.224	228.939
22	22	2.435	3.192	4.295	6.003	8.752	13.895	23.808	41.285	69.297	118.386	202.753
23	23	2.596	3.627	4.855	6.759	9.980	16.182	27.928	48.057	79.524	135.552	221.155
24	24	2.763	4.084	5.494	7.687	11.466	18.787	32.461	55.360	90.639	151.577	238.403
25	25	2.983	4.630	6.409	8.972	13.456	22.125	38.064	64.355	104.525	168.478	259.073
26	26	3.212	5.185	7.589	10.637	15.887	26.063	44.407	74.259	119.874	183.687	281.029
27	27	3.494	5.660	8.117	11.430	17.438	28.953	49.359	82.039	131.126	200.745	304.325
28	28	3.864	6.118	8.663	12.337	19.191	32.213	54.795	90.453	143.136	218.966	328.977
29	29	4.278	6.620	9.263	13.368	21.182	35.861	60.734	99.547	155.948	238.403	375.569
30	30	4.735	7.095	9.906	14.531	23.464	39.913	67.210	109.327	169.624	259.0	

Appendix B.2

Current Critical Illness Mortality Assumption Sample Rates, Per 1,000

Male Standard Non-smoker, all Simplified Issue products

Policy Year	Issue Age	20	25	30	35	40	45	50	55	60	65	70	75
1	1.777	1.287	0.695	0.740	0.911	1.116	1.640	2.825	4.761	7.882	13.839	25.095	
2	1.820	1.144	0.850	1.025	1.297	1.755	2.736	4.338	6.976	11.620	20.450	35.964	
3	1.823	1.094	0.958	1.167	1.531	2.250	3.521	5.459	8.783	14.994	26.508	46.080	
4	1.840	1.135	1.053	1.267	1.768	2.719	4.191	6.501	10.632	18.586	33.115	56.951	
5	1.789	1.152	1.083	1.292	1.987	3.120	4.730	7.374	12.334	21.985	39.420	67.157	
6	1.677	1.160	1.091	1.413	2.232	3.490	5.313	8.364	14.243	25.728	46.118	77.775	
7	1.576	1.172	1.153	1.556	2.517	3.901	5.939	9.446	16.376	29.794	53.268	89.140	
8	1.506	1.174	1.278	1.809	2.869	4.404	6.678	10.742	18.681	34.115	60.646	100.586	
9	1.498	1.244	1.432	2.139	3.326	5.032	7.653	12.291	21.454	39.120	68.990	113.127	
10	1.538	1.425	1.659	2.485	3.835	5.786	8.759	14.030	24.517	44.544	77.746	125.843	
11	1.543	1.590	1.931	2.855	4.343	6.534	9.881	15.834	27.622	49.951	86.163	145.402	
12	1.636	1.784	2.199	3.262	4.963	7.458	11.277	18.016	31.440	56.525	96.661	167.154	
13	1.694	1.941	2.444	3.624	5.547	8.358	12.694	20.234	35.345	63.131	106.707	187.523	
14	1.794	2.123	2.700	4.027	6.234	9.374	14.172	22.835	40.043	70.899	118.179	215.813	
15	1.886	2.270	2.938	4.467	6.948	10.436	15.820	25.747	45.281	79.336	130.102	249.594	
16	1.967	2.402	3.191	4.868	7.588	11.396	17.409	28.747	50.660	87.601	146.784	252.887	
17	2.094	2.566	3.472	5.394	8.322	12.503	19.359	32.447	57.156	97.699	165.926	283.761	
18	2.209	2.729	3.797	5.844	8.996	13.549	21.389	36.354	63.779	107.463	184.334	313.251	
19	2.353	2.926	4.174	6.401	9.768	14.851	23.958	41.240	71.712	118.840	211.663	347.078	
20	2.523	3.169	4.569	6.984	10.594	16.378	27.030	46.836	80.445	130.902	244.794	380.079	
21	2.703	3.440	4.996	7.538	11.424	18.075	30.420	52.666	89.131	146.918	247.977	405.203	
22	2.943	3.805	5.520	8.214	12.580	20.388	34.760	59.835	99.924	165.476	278.251	436.900	
23	3.201	4.214	6.116	9.049	14.109	23.269	39.812	67.824	111.794	185.219	310.180	467.993	
24	3.503	4.674	6.733	10.078	15.941	26.551	45.247	76.048	123.621	207.513	340.273	499.836	
25	3.873	5.263	7.604	11.530	18.494	30.795	51.878	85.949	138.159	239.994	372.626	540.965	
26	4.243	5.985	8.801	13.511	21.690	35.726	59.048	95.976	154.026	245.522	401.191	581.777	
27	4.524	6.434	9.558	14.813	23.917	39.522	65.214	105.800	169.633	275.496	432.575	620.491	
28	4.841	6.935	10.403	16.266	26.436	43.723	71.970	116.311	186.683	307.109	463.360	655.840	
29	5.184	7.507	11.336	17.877	29.210	48.338	79.308	127.607	207.513	340.273	499.836	685.938	
30	5.554	8.097	12.348	19.691	32.300	53.455	87.307	139.627	239.994	372.626	540.965	710.855	
31	5.985	8.801	13.511	21.690	35.726	59.048	95.976	154.026	245.522	401.191	581.777	732.794	
32	6.434	9.558	14.813	23.917	39.522	65.214	105.800	169.633	275.496	432.575	620.491	752.265	
33	6.935	10.403	16.266	26.436	43.723	71.970	116.311	186.683	307.109	463.360	655.840	770.345	
34	7.507	11.336	17.877	29.210	48.338	79.308	127.607	207.513	340.273	499.836	685.938	779.984	
35	8.097	12.348	19.691	32.300	53.455	87.307	139.627	239.994	372.626	540.965	710.855	787.544	
36	8.801	13.511	21.690	35.726	59.048	95.976	154.026	245.522	401.191	581.777	732.794	792.971	
37	9.558	14.813	23.917	39.522	65.214	105.800	169.633	275.496	432.575	620.491	752.265	792.971	
38	10.403	16.266	26.436	43.723	71.970	116.311	186.683	307.109	463.360	655.840	770.345	792.971	
39	11.336	17.877	29.210	48.338	79.308	127.607	207.513	340.273	499.836	685.938	779.984	792.971	
40	12.348	19.691	32.300	53.455	87.307	139.627	239.994	372.626	540.965	710.855	787.544	792.971	
41	13.511	21.690	35.726	59.048	95.976	154.026	245.522	401.191	581.777	732.794	792.971	792.971	
42	14.813	23.917	39.522	65.214	105.800	169.633	275.496	432.575	620.491	752.265	792.971	986.809	
43	16.266	26.436	43.723	71.970	116.311	186.683	307.109	463.360	655.840	770.345	792.971	1000.000	
44	17.877	29.210	48.338	79.308	127.607	207.513	340.273	499.836	685.938	779.984	792.971	1000.000	
45	19.691	32.300	53.455	87.307	139.627	239.994	372.626	540.965	710.855	787.544	792.971	1000.000	
46	21.690	35.726	59.048	95.976	154.026	245.522	401.191	581.777	732.794	792.971	792.971	1000.000	
47	23.917	39.522	65.214	105.800	169.633	275.496	432.575	620.491	752.265	792.971	986.809	1000.000	
48	26.436	43.723	71.970	116.311	186.683	307.109	463.360	655.840	770.345	792.971	1000.000	1000.000	
49	29.210	48.338	79.308	127.607	207.513	340.273	499.836	685.938	779.984	792.971	1000.000	1000.000	
50	32.300	53.455	87.307	139.627	239.994	372.626	540.965	710.855	787.544	792.971	1000.000	1000.000	
51	35.726	59.048	95.976	154.026	245.522	401.191	581.777	732.794	792.971	792.971	1000.000	1000.000	
52	39.522	65.214	105.800	169.633	275.496	432.575	620.491	752.265	792.971	986.809	1000.000	1000.000	
53	43.723	71.970	116.311	186.683	307.109	463.360	655.840	770.345	792.971	1000.000	1000.000	1000.000	
54	48.338	79.308	127.607	207.513	340.273	499.836	685.938	779.984	792.971	1000.000	1000.000	1000.000	
55	53.455	87.307	139.627	239.994	372.626	540.965	710.855	787.544	792.971	1000.000	1000.000	1000.000	
56	59.048	95.976	154.026	245.522	401.191	581.777	732.794	792.971	792.971	1000.000	1000.000	1000.000	
57	65.214	105.800	169.633	275.496	432.575	620.491	752.265	792.971	986.809	1000.000	1000.000	1000.000	
58	71.970	116.311	186.683	307.109	463.360	655.840	770.345	792.971	1000.000	1000.000	1000.000	1000.000	
59	79.308	127.607	207.513	340.273	499.836	685.938	779.984	792.971	1000.000	1000.000	1000.000	1000.000	
60	87.307	139.627	239.994	372.626	540.965	710.855	787.544	792.971	1000.000	1000.000	1000.000	1000.000	
61	95.976	154.026	245.522	401.191	581.777	732.794	792.971	792.971	1000.000	1000.000	1000.000	1000.000	
62	105.800	169.633	275.496	432.575	620.491	752.265	792.971	986.809	1000.000	1000.000	1000.000	1000.000	
63	116.311	186.683	307.109	463.360	655.840	770.345	792.971	1000.000	1000.000	1000.000	1000.000	1000.000	
64	127.607	207.513	340.273	499.836	685.938	779.984	792.971	1000.000	1000.000	1000.000	1000.000	1000.000	
65	139.627	239.994	372.626	540.965	710.855	787.544	792.971	1000.000	1000.000	1000.000	1000.000	1000.000	
66	154.026	245.522	401.191	581.777	732.794	792.971	792.971	1000.000	1000.000	1000.000	1000.000	1000.000	
67	169.633	275.496	432.575	620.491	752.265	792.971	986.809	1000.000	1000.000	1000.000	1000.000	1000.000	
68	186.683	307.109	463.360	655.840	770.345	792.971	1000.000	1000.000	1000.000	1000.000	1000.000	1000.000	
69	207.513	340.273	499.836	685.938	779.984	792.971	1000.000	1000.000	1000.000	1000.000	1000.000	1000.000	
70	239.994	372.626	540.965	710.855	787.544	792.971	1000.000	1000.000	1000.000	1000.000	1000.000	1000.000	
71	245.522	401.191	581.777	732.794	792.971	792.971	1000.000	1000.000	1000.000	1000.000	1000.000	1000.000	
72	275.496	432.575	620.491	752.265	792.971	986.809	1000.000	1000.000	1000.000	1000.000	1000.000	1000.000	
73	307.109	463.360	655.840	770.345	792.971	1000.000	1000.000	1000.000	1000.000	1000.000	1000.000	1000.000	
74	340.273	499.836	685.938	779.984	792.971	1000.000	1000.000	1000.000	1000.000	1000.000	1000.000	1000.000	
75	372.626	540.965	710.855	787.544	792.971	1000.000	1000.000	1000.000	1000.000	1000.000	1000.000	1000.000	
76	401.191	581.777	732.794	792.971	792.971	1000.000	1000.000	1000.000	1000.000	1000.000	1000.000	1000.000	
77	432.575	620.491	752.265	792.971	986.809	1000.000	1000.000	1000.000	1000.000	1000.000	1000.000	1000.000	
78	463.360	655.840	770.345	792.971	1000.000	1000.000	1000.000	1000.000	1000.000	1000.000	1000.000	1000.000	
79	499.836	685.938	779.984	792.971	1000.000	1000.000	1000.000	1000.000	1000.000	1000.000	1000.000	1000.000	
80	540.965	710.855	787.544	792.971	1000.000	1000.000	1000.000	1000.000	1000.000	1000.000	1000.000	1000.000	
81	581.777	732.794	792.971</										