

**STATE OF CALIFORNIA  
DEPARTMENT OF INSURANCE  
Ronald Reagan Building  
300 South Spring Street, 14th Floor  
Los Angeles, California 90013**

**Bulletin No. 2001-04**

**August 30, 2001**

**TO:** All Admitted Life and Disability Insurers and Other Interested Persons

**SUBJECT:** Rates of Interest for Minimum Reserves and Nonforfeiture Values - 2002 Life Insurance; 2001 Annuities

**This replaces Bulletin No. 2000-4.**

Attached is [Table 1](#) showing the rates of interest to be used for determining minimum reserves and nonforfeiture values according to [Sections 10163.2\(i\) and 10489.4 of the California Insurance Code](#) applicable to life insurance policies issued in 2002 and annuity contracts issued or undergoing a change in fund in 2001. Also shown in [Table 1](#) are the interest rates applicable to life insurance policies issued in 1982 through 2002 and to annuity contracts issued or funded in 1981 through 2001.

The Monthly Average of the Corporate Yield on seasoned Corporate bonds, published by Moody's Investors Services, Inc. used in these calculations are those for the period ending June 30 for each calendar year shown. These were:

<u>Calendar Year</u>	<u>Average over period ending June 30</u>	
	<u>Of a 12-Month Period</u>	<u>Of a 36-Month Period</u>
1979	9.49%	8.92%
1980	11.51	9.89
1981	13.71	11.57
1982	15.70	13.64
1983	13.39	14.26
1984	13.22	14.10
1985	13.01	13.21
1986	10.75	12.33
1987	9.40	11.05
1988	10.32	10.15
1989	10.09	9.93
1990	9.52	9.97
1991	9.63	9.74
1992	8.88	9.34
1993	8.13	8.88
1994	7.52	8.18
1995	8.42	8.03
1996	7.55	7.83
1997	7.74	7.90
1998	7.11	7.47
1999	6.96	7.27
2000	7.93	7.33
2001	7.72	7.54

[Appendix A](#) is a brief outline of the basis for the calculation of the interest rates shown in [Table 1](#).

**HARRY W. LOW  
INSURANCE COMMISSIONER**

**TABLE 1**

**STATUTORY CALENDAR YEAR INTEREST RATES  
BASED ON NAIC STANDARD VALUATION AND NONFORFEITURE LAWS**

**A. Life Insurance**

Guarantee Duration (Years)	Calendar Year	Valuation Interest Rate (100%)	Nonforfeiture Interest Rate (125%)
10 or less	82	6.75	8.50
	83-86	7.25	9.00
	87	6.50	8.25
	88-93	6.00	7.50
	94	5.50	7.00
	95-98	5.50	7.00
	99-2002	5.00	6.25
More than 10, not more than 20	82	6.25	7.75
	83-86	6.75	8.50
	87-93	6.00	7.50
	94	5.25	6.50
	95-98	5.25	6.50
	99-2002	4.75	6.00
More than 20	82	5.50	7.00
	83-86	6.00	7.50
	87-92	5.50	7.00
	93-94	5.00	6.25
	95-2002	4.50	5.75

**B Single premium immediate annuities, and annuity benefits involving life contingencies arising From other annuities with cash settlement options and from guaranteed interest contracts with Cash settlement options.**

Calendar Year	Valuation Interest Rate	Calendar Year	Valuation Interest Rate
81	11.50	92	7.75
82	13.25	93	7.00
83-84	11.25	94	6.50
85	11.00	95	7.25
86	9.25	96-97	6.75
87	8.00	98-99	6.25
88-89	8.75	2000	7.00
90-91	8.25	2001	6.75

**TABLE 1 (continued)**

**C. Other Annuities and Guaranteed Interest Contracts**

**Contracts Valued on an Issue Year Basis**

**With Cash Settlement Options**

**With Future Interest Guarantee**

Guarantee Duration (Years)	Calendar Year	Valuation Interest Rate for Plan Type			Calendar Year	Valuation Interest Rate for Plan Type		
		A	B	C		A	B	C
5 or less	<b>81</b>	11.50	9.50	8.25	<b>90-91</b>	8.25	7.00	6.25
	<b>82</b>	13.25	10.50	9.25	<b>92</b>	7.75	6.50	6.00
	<b>83</b>	11.25	9.25	8.25	<b>93</b>	7.00	6.00	5.50
	<b>84</b>	11.25	9.25	8.00	<b>94</b>	6.50	5.75	5.25
	<b>85</b>	11.00	9.00	8.00	<b>95</b>	7.25	6.25	5.75
	<b>86</b>	9.25	7.75	6.75	<b>96-97</b>	6.75	5.75	5.25
	<b>87</b>	8.00	6.75	6.25	<b>98-99</b>	6.25	5.50	5.00
	<b>88</b>	8.75	7.50	6.75	<b>2000</b>	7.00	6.00	5.50
	<b>89</b>	8.75	7.25	6.50	<b>2001</b>	6.75	5.75	5.25
more than 5 but not more than 10	<b>81</b>	11.00	9.50	8.25	<b>90-91</b>	8.00	7.00	6.25
	<b>82</b>	12.50	10.50	9.25	<b>92</b>	7.50	6.50	6.00
	<b>83</b>	10.75	9.25	8.25	<b>93</b>	6.75	6.00	5.50
	<b>84</b>	10.75	9.25	8.00	<b>94</b>	6.50	5.75	5.25
	<b>85</b>	10.50	9.00	8.00	<b>95</b>	7.00	6.25	5.75
	<b>86</b>	8.75	7.75	6.75	<b>96-97</b>	6.50	5.75	5.25
	<b>87</b>	7.75	6.75	6.25	<b>98-99</b>	6.00	5.50	5.00
	<b>88</b>	8.50	7.50	6.75	<b>2000</b>	6.75	6.00	5.50
	<b>89</b>	8.25	7.25	6.50	<b>2001</b>	6.50	5.75	5.25
more than 10 but not more than 20	<b>81</b>	7.75	6.75	6.25	<b>93</b>	6.25	5.50	5.25
	<b>82</b>	8.50	7.25	6.75	<b>94</b>	6.00	5.25	5.00
	<b>83-84</b>	8.25	7.00	6.75	<b>95</b>	6.25	5.50	5.25
	<b>85</b>	8.25	7.00	6.50	<b>96</b>	6.00	5.25	5.00
	<b>86</b>	7.50	6.50	6.00	<b>97</b>	6.00	5.25	5.25
	<b>87</b>	7.00	6.00	5.75	<b>98</b>	5.75	5.00	4.75
	<b>88-89</b>	7.25	6.25	6.00	<b>99</b>	5.50	5.00	4.75
	<b>90-91</b>	7.00	6.25	5.75	<b>2000</b>	5.75	5.25	5.00
	<b>92</b>	6.75	6.00	5.75	<b>2001</b>	6.00	5.25	5.00
more than 20	<b>81</b>	6.25	5.50	5.50	<b>93</b>	5.25	4.75	4.75
	<b>82</b>	6.75	6.00	6.00	<b>94</b>	5.00	4.50	4.50
	<b>83-84</b>	6.75	5.75	5.75	<b>95</b>	5.25	4.75	4.75
	<b>85</b>	6.50	5.75	5.75	<b>96</b>	5.00	4.50	4.50
	<b>86</b>	6.00	5.50	5.50	<b>97</b>	5.25	4.75	4.75
	<b>87</b>	5.75	5.25	5.25	<b>98-99</b>	4.75	4.50	4.50
	<b>88-89</b>	6.00	5.25	5.25	<b>2000</b>	5.00	4.50	4.50
	<b>90-91</b>	5.75	5.25	5.25	<b>2001</b>	5.00	4.50	4.50
	<b>92</b>	5.75	5.00	5.00				

**TABLE 1 (continued)**

**C. Other Annuities and Guaranteed Interest Contracts**

**Contracts Valued on an Issue Year Basis**

Guarantee Duration (Years)	With Cash Settlement Options				Without Future Interest Guarantee			
	Calendar Year	Valuation Interest Rate for Plan Type			Calendar Year	Valuation Interest Rate for Plan Type		
		A	B	C		A	B	C
5 or less	<b>81</b>	12.00	10.00	9.00	<b>92</b>	8.00	6.75	6.25
	<b>82</b>	13.75	11.25	10.00	<b>93</b>	7.25	6.25	5.75
	<b>83</b>	11.75	9.75	8.75	<b>94</b>	6.75	6.00	5.50
	<b>84</b>	11.75	9.75	8.50	<b>95</b>	7.50	6.50	6.00
	<b>85</b>	11.50	9.50	8.50	<b>96</b>	6.75	6.00	5.50
	<b>86</b>	9.50	8.00	7.25	<b>97</b>	7.00	6.00	5.50
	<b>87</b>	8.50	7.25	6.50	<b>98</b>	6.50	5.75	5.25
	<b>88</b>	9.25	7.75	7.00	<b>99</b>	6.25	5.50	5.25
	<b>89</b>	9.00	7.50	7.00	<b>2000</b>	7.25	6.25	5.75
	<b>90</b>	8.50	7.25	6.50	<b>2001</b>	7.00	6.00	5.50
	<b>91</b>	8.75	7.25	6.75				
more than 5 but not more than 10	<b>81</b>	11.50	10.00	9.00	<b>91</b>	8.25	7.25	6.75
	<b>82</b>	13.25	11.25	10.00	<b>92</b>	7.75	6.75	6.25
	<b>83</b>	11.25	9.75	8.75	<b>93</b>	7.00	6.25	5.75
	<b>84</b>	11.25	9.75	8.50	<b>94</b>	6.50	6.00	5.50
	<b>85</b>	11.00	9.50	8.50	<b>95</b>	7.25	6.50	6.00
	<b>86</b>	9.25	8.00	7.25	<b>96-97</b>	6.75	6.00	5.50
	<b>87</b>	8.00	7.25	6.50	<b>98</b>	6.25	5.75	5.25
	<b>88</b>	8.75	7.75	7.00	<b>99</b>	6.25	5.50	5.25
	<b>89</b>	8.75	7.50	7.00	<b>2000</b>	7.00	6.25	5.75
	<b>90</b>	8.25	7.25	6.50	<b>2001</b>	6.75	6.00	5.50
more than 10 but not more than 20	<b>81</b>	8.00	7.00	6.75	<b>93</b>	6.50	5.75	5.50
	<b>82</b>	8.75	7.50	7.25	<b>94</b>	6.25	5.50	5.25
	<b>83-84</b>	8.75	7.50	7.00	<b>95</b>	6.50	5.75	5.50
	<b>85</b>	8.50	7.50	7.00	<b>96-97</b>	6.25	5.50	5.25
	<b>86</b>	7.75	6.75	6.50	<b>98</b>	6.00	5.25	5.00
	<b>87</b>	7.25	6.50	6.00	<b>99</b>	5.75	5.25	5.00
	<b>88-91</b>	7.50	6.50	6.25	<b>2000</b>	6.00	5.50	5.25
	<b>92</b>	7.00	6.25	6.00	<b>2001</b>	6.25	5.50	5.25
more than 20	<b>81</b>	6.75	6.00	6.00	<b>93</b>	5.50	5.00	5.00
	<b>82</b>	7.25	6.25	6.25	<b>94</b>	5.25	4.75	4.75
	<b>83-84</b>	7.00	6.25	6.25	<b>95</b>	5.50	5.00	5.00
	<b>85</b>	7.00	6.25	6.25	<b>96</b>	5.25	4.75	4.75
	<b>86</b>	6.50	5.75	5.75	<b>97</b>	5.25	5.00	5.00
	<b>87</b>	6.00	5.50	5.50	<b>98</b>	5.00	4.75	4.75
	<b>88</b>	6.25	5.75	5.75	<b>99</b>	5.00	4.50	4.50
	<b>89-91</b>	6.25	5.50	5.50	<b>2000</b>	5.25	4.75	4.75
	<b>92</b>	6.00	5.25	5.25	<b>2001</b>	5.25	4.75	4.75

**TABLE 1 (continued)**

**C. Other Annuities and Guaranteed Interest Contracts**

**Contracts Valued on an Issue Year Basis**

**Without Cash Settlement Options**

**With or Without Future Interest Guarantee**

Guarantee Duration (Years)	Calendar Year	Valuation Interest Rate for Plan Type			Calendar Year	Valuation Interest Rate for Plan Type			
		A	B	C		A	B	C	
5 or less	<b>81</b>	11.50	NOT APPLICABLE		<b>92</b>	7.75	NOT APPLICABLE		
	<b>82</b>	13.25	FOR ANY		<b>93</b>	7.00	FOR ANY		
	<b>83-84</b>	11.25	GUARANTEE		<b>94</b>	6.50	GUARANTEE		
	<b>85</b>	11.00	DURATION		<b>95</b>	7.25	DURATION		
	<b>86</b>	9.25	FOR PLAN		<b>96-97</b>	6.75	FOR PLAN		
	<b>87</b>	8.00	TYPES		<b>98-99</b>	6.25	TYPES		
	<b>88-89</b>	8.75	B AND C		<b>2000</b>	7.00	B AND C		
	<b>90-91</b>	8.25			<b>2001</b>	6.75			
	more than 5 but not more than 10	<b>81</b>	11.00			<b>92</b>	7.50		
		<b>82</b>	12.50			<b>93</b>	6.75		
<b>83-84</b>		10.75			<b>94</b>	6.50			
<b>85</b>		10.50			<b>95</b>	7.00			
<b>86</b>		8.75			<b>96-97</b>	6.50			
<b>87</b>		7.75			<b>98-99</b>	6.00			
<b>88</b>		8.50			<b>2000</b>	6.75			
<b>89</b>		8.25			<b>2001</b>	6.50			
<b>90-91</b>		8.00							
more than 10 but not more than 20		<b>81</b>	10.00			<b>92</b>	6.75		
	<b>82</b>	11.25			<b>93</b>	6.25			
	<b>83-84</b>	9.75			<b>94</b>	6.00			
	<b>85</b>	9.50			<b>95</b>	6.50			
	<b>86</b>	8.00			<b>96-97</b>	6.00			
	<b>87</b>	7.25			<b>98</b>	5.75			
	<b>88</b>	7.75			<b>99</b>	5.50			
	<b>89</b>	7.50			<b>2000</b>	6.25			
	<b>90-91</b>	7.25			<b>2001</b>	6.00			
	more than 20	<b>81</b>	7.75			<b>93</b>	5.25		
<b>82</b>		8.75			<b>94</b>	5.00			
<b>83</b>		7.75			<b>95</b>	5.50			
<b>84-85</b>		7.50			<b>96</b>	5.00			
<b>86</b>		6.50			<b>97</b>	5.25			
<b>87</b>		6.00			<b>98-99</b>	4.75			
<b>88-89</b>		6.25			<b>2000</b>	5.25			
<b>90-91</b>		6.00			<b>2001</b>	5.00			
<b>92</b>		5.75							

**TABLE 1 (continued)**

**C. Other Annuities and Guaranteed Interest Contracts**

**Contracts Valued on a Change in Fund Basis**

**With Cash Settlement Options**

**With Future Interest Guarantee**

Guarantee Duration (Years)	Calendar Year	Valuation Interest Rate for Plan Type			Calendar Year	Valuation Interest Rate for Plan Type		
		A	B	C		A	B	C
5 or less	<b>81</b>	13.25	12.00	9.00	<b>92</b>	8.50	8.00	6.25
	<b>82</b>	15.00	13.75	10.00	<b>93</b>	7.75	7.25	5.75
	<b>83</b>	12.75	11.75	8.75	<b>94</b>	7.25	6.75	5.50
	<b>84</b>	12.75	11.75	8.50	<b>95</b>	8.25	7.50	6.00
	<b>85</b>	12.50	11.50	8.50	<b>96</b>	7.25	6.75	5.50
	<b>86</b>	10.25	9.50	7.25	<b>97</b>	7.50	7.00	5.50
	<b>87</b>	9.00	8.50	6.50	<b>98</b>	7.00	6.50	5.25
	<b>88</b>	10.00	9.25	7.00	<b>99</b>	6.75	6.25	5.25
	<b>89</b>	9.75	9.00	7.00	<b>2000</b>	7.75	7.25	5.75
	<b>90</b>	9.25	8.50	6.50	<b>2001</b>	7.50	7.00	5.50
	<b>91</b>	9.25	8.75	6.75				
more than 5 but not more than 10	<b>81</b>	12.75	12.00	9.00	<b>92</b>	8.25	8.00	6.25
	<b>82</b>	14.50	13.75	10.00	<b>93</b>	7.50	7.25	5.75
	<b>83</b>	12.25	11.75	8.75	<b>94</b>	7.00	6.75	5.50
	<b>84</b>	12.25	11.75	8.50	<b>95</b>	8.00	7.50	6.00
	<b>85</b>	12.00	11.50	8.50	<b>96</b>	7.00	6.75	5.50
	<b>86</b>	10.00	9.50	7.25	<b>97</b>	7.25	7.00	5.50
	<b>87</b>	8.75	8.50	6.50	<b>98</b>	6.75	6.50	5.25
	<b>88</b>	9.50	9.25	7.00	<b>99</b>	6.50	6.25	5.25
	<b>89</b>	9.50	9.00	7.00	<b>2000</b>	7.50	7.25	5.75
	<b>90</b>	8.75	8.50	6.50	<b>2001</b>	7.25	7.00	5.50
	<b>91</b>	9.00	8.75	6.75				
more than 10 but not more than 20	<b>81</b>	11.50	11.00	8.25	<b>92</b>	7.75	7.50	6.00
	<b>82</b>	13.25	12.50	9.25	<b>93</b>	7.00	6.75	5.50
	<b>83</b>	11.25	10.75	8.25	<b>94</b>	6.50	6.50	5.25
	<b>84</b>	11.25	10.75	8.00	<b>95</b>	7.25	7.00	5.75
	<b>85</b>	11.00	10.50	8.00	<b>96-97</b>	6.75	6.50	5.25
	<b>86</b>	9.25	8.75	6.75	<b>98</b>	6.25	6.00	5.00
	<b>87</b>	8.00	7.75	6.25	<b>99</b>	6.25	6.00	5.00
	<b>88</b>	8.75	8.50	6.75	<b>2000</b>	7.00	6.75	5.50
	<b>89</b>	8.75	8.25	6.50	<b>2001</b>	6.75	6.50	5.25
	<b>90-91</b>	8.25	8.00	6.25				
	<b>91</b>	8.25	8.00	6.25				
more than 20	<b>81</b>	9.50	9.50	7.25	<b>92</b>	6.50	6.50	5.25
	<b>82</b>	10.50	10.50	8.00	<b>93</b>	6.00	6.00	5.00
	<b>83</b>	9.25	9.25	7.25	<b>94</b>	5.75	5.75	4.75
	<b>84</b>	9.25	9.25	7.00	<b>95</b>	6.25	6.25	5.25
	<b>85</b>	9.00	9.00	7.00	<b>96</b>	5.75	5.75	4.75
	<b>86</b>	7.75	7.75	6.00	<b>97</b>	5.75	5.75	5.00
	<b>87</b>	6.75	6.75	5.50	<b>98</b>	5.50	5.50	4.75
	<b>88</b>	7.50	7.50	6.00	<b>99</b>	5.50	5.50	4.50
	<b>89</b>	7.25	7.25	5.75	<b>2000</b>	6.00	6.00	5.00
	<b>90</b>	7.00	7.00	5.50	<b>2001</b>	5.75	5.75	5.00
	<b>91</b>	7.00	7.00	5.75				

**TABLE 1 (concluded)**

**C. Other Annuities and Guaranteed Interest Contracts**

**Contracts Valued on a Change in Fund Basis**

Guarantee Duration (Years)	With Cash Settlement Options				Without Future Interest Guarantee			
	Calendar Year	Valuation Interest Rate for Plan Type			Calendar Year	Valuation Interest Rate for Plan Type		
		A	B	C		A	B	C
5 or less	<b>81</b>	13.75	12.75	9.50	<b>92</b>	9.00	8.25	6.50
	<b>82</b>	15.75	14.50	10.50	<b>93</b>	8.25	7.50	6.00
	<b>83</b>	13.50	12.25	9.25	<b>94</b>	7.50	7.00	5.75
	<b>84</b>	13.25	12.25	9.25	<b>95</b>	8.50	8.00	6.25
	<b>85</b>	13.00	12.00	9.00	<b>96</b>	7.50	7.00	5.75
	<b>86</b>	10.75	10.00	7.75	<b>97</b>	7.75	7.25	5.75
	<b>87</b>	9.50	8.75	6.75	<b>98</b>	7.00	6.75	5.50
	<b>88</b>	10.25	9.50	7.50	<b>99</b>	7.00	6.50	5.50
	<b>89</b>	10.00	9.50	7.25	<b>2000</b>	8.00	7.50	6.00
	<b>90</b>	9.50	8.75	7.00	<b>2001</b>	7.75	7.25	5.75
	<b>91</b>	9.75	9.00	7.00				
more than 5 but not more than 10	<b>81</b>	13.25	12.75	9.50	<b>92</b>	8.50	8.25	6.50
	<b>82</b>	15.00	14.50	10.50	<b>93</b>	7.75	7.50	6.00
	<b>83</b>	12.75	12.25	9.25	<b>94</b>	7.25	7.00	5.75
	<b>84</b>	12.75	12.25	9.25	<b>95</b>	8.25	8.00	6.25
	<b>85</b>	12.50	12.00	9.00	<b>96</b>	7.25	7.00	5.75
	<b>86</b>	10.25	10.00	7.75	<b>97</b>	7.50	7.25	5.75
	<b>87</b>	9.00	8.75	6.75	<b>98</b>	7.00	6.75	5.50
	<b>88</b>	10.00	9.50	7.50	<b>99</b>	6.75	6.50	5.50
	<b>89</b>	9.75	9.50	7.25	<b>2000</b>	7.75	7.50	6.00
	<b>90</b>	9.25	8.75	7.00	<b>2001</b>	7.50	7.25	5.75
	<b>91</b>	9.25	9.00	7.00				
more than 10 but not more than 20	<b>81</b>	12.00	11.50	9.00	<b>92</b>	8.00	7.75	6.25
	<b>82</b>	13.75	13.25	10.00	<b>93</b>	7.25	7.00	5.75
	<b>83</b>	11.75	11.25	8.75	<b>94</b>	6.75	6.50	5.50
	<b>84</b>	11.75	11.25	8.50	<b>95</b>	7.50	7.25	6.00
	<b>85</b>	11.50	11.00	8.50	<b>96</b>	6.75	6.75	5.50
	<b>86</b>	9.50	9.25	7.25	<b>97</b>	7.00	6.75	5.50
	<b>87</b>	8.50	8.00	6.50	<b>98</b>	6.50	6.25	5.25
	<b>88</b>	9.25	8.75	7.00	<b>99</b>	6.25	6.25	5.25
	<b>89</b>	9.00	8.75	7.00	<b>2000</b>	7.25	7.00	5.75
	<b>90</b>	8.50	8.25	6.50	<b>2001</b>	7.00	6.75	5.50
	<b>91</b>	8.75	8.25	6.75				
more than 20	<b>81</b>	10.00	10.00	7.75	<b>93</b>	6.25	6.25	5.25
	<b>82</b>	11.25	11.25	8.75	<b>94</b>	6.00	6.00	5.00
	<b>83</b>	9.75	9.75	7.75	<b>95</b>	6.50	6.50	5.50
	<b>84</b>	9.75	9.75	7.50	<b>96</b>	6.00	6.00	5.00
	<b>85</b>	9.50	9.50	7.50	<b>97</b>	6.00	6.00	5.25
	<b>86</b>	8.00	8.00	6.50	<b>98</b>	5.75	5.75	4.75
	<b>87</b>	7.25	7.25	6.00	<b>99</b>	5.50	5.50	4.75
	<b>88</b>	7.75	7.75	6.25	<b>2000</b>	6.25	6.25	5.25
	<b>89</b>	7.50	7.50	6.25	<b>2001</b>	6.00	6.00	5.00
	<b>90-91</b>	7.25	7.25	6.00				
	<b>92</b>	6.75	6.75	5.75				

Basis For Interest Rate Calculations

Reference Interest Rate R

Features in the determination of the value of R include:

1. **The source:** Monthly Average of the Corporate Yield on Seasoned Corporate Bonds as published by Moody's Investors Services, Inc.
2. **The averaging period:**
  - a. Averaging over a period of twelve months (12). Used in formula B
  - b. The lesser of the average over a period of thirty-six months and the average over a period of twelve months (12/36). Used in formula A.
3. **The end of the averaging period is June 30 of the calendar year:**
  - a. of issue or purchase. (YI)
  - b. next preceding the year of issue. (YI-1)
  - c. of the change in fund. (YF)

Formula For Determining The Maximum Valuation Interest Rate,I

There are two formulae used to calculate I:

**(A)  $I = .03+W(R_1 -.03)+(W/2)(R_2 -.09)$**

**(B)  $I = .03+W(R-.03)$**

Where: **R<sub>1</sub>** is the lesser of R and .09

**R<sub>2</sub>** is the greater of R and .09

**R** is the reference interest rate

**W** is the weighting factor

<u>Life Insurance (Formula A)</u>				<u>Annuities</u>				
<u>Calendar</u>	<u>R</u>	<u>R<sub>1</sub></u>	<u>R<sub>2</sub></u>	<u>Calendar</u>	<u>R</u>	<u>Formula A</u>		<u>Formula B</u>
<u>Year</u>				<u>Year</u>		<u>R<sub>1</sub></u>	<u>R<sub>2</sub></u>	<u>R</u>
81	9.89	9.00	9.89	81	11.57	9.00	11.57	13.71
82	11.57	9.00	11.57	82	13.64	9.00	13.64	15.70
83	13.64	9.00	13.64	83	13.39	9.00	13.39	13.39
84	13.39	9.00	13.39	84	13.22	9.00	13.22	13.22
85	13.22	9.00	13.22	85	13.01	9.00	13.01	13.01
86	13.01	9.00	13.01	86	10.75	9.00	10.75	10.75
87	10.75	9.00	10.75	87	9.40	9.00	9.40	9.40
88	9.40	9.00	9.40	88	10.15	9.00	10.15	10.32
89	10.15	9.00	10.15	89	9.93	9.00	9.93	10.09
90	9.93	9.00	9.93	90	9.52	9.00	9.52	9.52
91	9.52	9.00	9.52	91	9.63	9.00	9.63	9.63
92	9.63	9.00	9.63	92	8.88	8.88	9.00	8.88
93	8.88	8.88	9.00	93	8.13	8.13	9.00	8.13
94	8.13	8.13	9.00	94	7.52	7.52	9.00	7.52
95	7.52	7.52	9.00	95	8.03	8.03	9.00	8.42
96	8.03	8.03	9.00	96	7.55	7.55	9.00	7.55
97	7.55	7.55	9.00	97	7.74	7.74	9.00	7.74
98	7.74	7.74	9.00	98	7.11	7.11	9.00	7.11
99	7.11	7.11	9.00	99	6.96	6.96	9.00	6.96
2000	6.96	6.96	9.00	2000	7.33	7.33	9.00	7.93
2001	7.33	7.33	9.00	2001	7.54	7.54	9.00	7.72
2002	7.54	7.54	9.00					

## Guarantee Duration (Years)

This is defined in three ways:

**1. For Life Insurance:**

The guarantee duration is the maximum number of years the life insurance can remain in force on a basis guaranteed in the policy or under options to convert to plans of life insurance with premium rates or nonforfeiture values or both which are guaranteed in the original policy. (L)

**2. For annuities with cash settlement options and guaranteed interest contracts with cash settlement options other than single premium immediate annuities and annuity benefits involving life contingencies arising from other annuities with cash settlement options and guaranteed interest contracts with cash settlement options:**

The guarantee duration is the number of years for which the contract guarantees interest rates in excess of the calendar year statutory valuation interest rate for life insurance policies with guarantee duration in excess of twenty years. (C)

**3. For other annuities with no cash settlement options and for guaranteed interest contracts with no cash settlement options:**

The guarantee duration is the number of years from the date of issue or date of purchase to the date annuity benefits are scheduled to commence. (N)

## Plan Type According To Withdrawal Privileges For Other Annuities And Guaranteed Interest Contracts

The weighting factors used in the formulas vary by plan type as determined by withdrawal privileges.

**Type A:** At any time the policyholder may withdraw funds only:

1. With an adjustment to reflect change in interest rates or asset values since receipt of the funds by the insurance company, or
2. Without such adjustment, but in installments over five years or more, or
3. As an immediate life annuity, or
4. No withdrawal permitted.

**Type B:** Before expiration of the interest rate guarantee, the policyholder may withdraw funds only:

1. With an adjustment to reflect changes in interest rates or asset values since receipt of the funds by the insurance company,
2. Without such adjustment, but in installments over five years or more, or
3. No withdrawal permitted.

At the end of the interest rate guarantee, funds may be withdrawn without such adjustment in a single sum or installment over less than five years.

**Type C:** The policyholder may withdraw funds before expiration of interest rate guarantee in a single sum or installments over less than five years either:

1. Without adjustment to reflect changes in interest rates or asset values since receipt of funds by the insurance company, or
2. Subject only to a fixed surrender charge stipulated in the contract as a percentage of the fund.

#### Determination Of The Maximum Valuation Rate Of Interest

Using all of the factors as defined above, a schematic diagram of the process for determining the maximum valuation rate interest is shown in [Exhibit 1](#) which contains cross references in parentheses to letters or numbers in parentheses in the preceding text of this appendix.

#### The Maximum Rate Of Interest For Nonforfeiture Values

The maximum rate of interest specified for nonforfeiture values is 125 percent of the corresponding rate calculated for valuation purposes. For the maximum statutory rate of interest for nonforfeiture value purposes, the results are rounded to the nearest one-quarter of one percent, with results exactly midway rounded to the higher one quarter of one percent.

#### Issue Year or Change-In-Fund Basis

A company may elect to value guaranteed interest contracts with cash settlement options and annuities with cash settlement options on either an issue year basis or on a change-in-fund basis. Guaranteed interest contracts with no cash settlement options and other annuities with no cash settlement options must be valued on an issue year basis. As used in this section, an issue year basis of valuation refers to a valuation basis under which the interest rate used to determine the minimum valuation standard for the entire duration of the annuity or guaranteed interest contract is the calendar year valuation interest rate for the year of issue or year of purchase of the annuity or guaranteed interest contract, and the change-in-fund basis of valuation refers to a valuation basis under which the interest rate used to determine the minimum valuation standard applicable to each change in the fund held under the annuity or guaranteed interest contract is the calendar year valuation interest rate for the year of the change in the fund.

**EXHIBIT 1**

**STATUTORY VALUATION INTEREST RATE DETERMINATION**

Results are rounded to the nearer one-quarter of one percent with results exactly midway rounded to the lower one-quarter of one percent. For life insurance the statutory interest rate is changed only if the change is a half % or more from that of the previous year.

<u>Determination of</u>		<u>Guarantee Duration (Years)</u>		<u>Weighting Factor (W)</u>			
<u>R by</u>	<u>I by</u>	<u>More than</u>	<u>Not More Than</u>	<u>Definition</u>			
<u>All Life Insurance</u>		(For changes in I of at least .5%)					
(YI-1), (12/36)	(A)	0	10	(L)	.50		
		10	20	(L)	.45		
		20		(L)	.35		
<u>Single premium immediate annuities, etc.</u>							
(YI), (12)	(B)	--	--	--	.80		
<u>Annuities and guaranteed interest contracts valued on an issue year basis</u>							
					<u>By</u>	<u>Plan</u>	<u>Type</u>
					<u>A</u>	<u>B</u>	<u>C</u>
(YI), (12)	(B)	0	5	(C)	.80	.60	.50
				(N)	.80	--	--
(YI), (12)	(B)	5	10	(C)	.75	.60	.50
				(N)	.75	--	--
(YI), (12/36)	(A)	10	20	(C)	.65	.50	.45
(YI), (12)	(B)	10	20	(N)	.65	--	--
(YI), (12/36)	(A)	20	--	(C)	.45	.35	.35
(YI), (12)	(B)	20	--	(N)	.45	--	--
<u>Annuities and guaranteed interest valuation on a change-in-fund basis</u>							
(YF), (12)	(B)	0	5	(C)	.95	.85	.55
(YF), (12)	(B)	5	10	(C)	.90	.85	.55
(YF), (12)	(B)	10	20	(C)	.80	.75	.50
(YF), (12)	(B)	20	--	(C)	.60	.60	.40

**NOTE:** The change-in-fund basis values the original amount deposited at the interest rate in effect when it was deposited; all changes to the fund thereafter, including interest on the original deposit, are valued at the rates in effect when they occurred.

Annuities and guaranteed interest contracts with cash settlement options which do not guarantee interest on considerations received more than one year after issue or purchase on an issue year valuation basis, or received more than 12 months beyond the valuation date on a change in fund basis, use the weighting factors indicated above increased by .05.

Any questions regarding this bulletin should be addressed to:

Robert A. Conover, FSA, MAAA  
Senior Life Actuary  
California Department of Insurance  
Ronald Reagan State Building  
300 South Spring Street, South Tower  
Los Angeles, CA 90013  
Telephone: (213) 346-6229  
Fax: (213) 897-9761  
E-mail address: [conoverr@insurance.ca.gov](mailto:conoverr@insurance.ca.gov).