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SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549

FORM 11-K

[x] ANNUAL REPORT PURSUANT TO SECTION 15 (D)
OF THE SECURITIES EXCHANGE ACT OF 1934

For the fiscal year ended December 31, 2003

OR

[ ] TRANSACTION REPORT PURSUANT TO SECTION 15(d)
OF THE SECURITIES EXCHANGE ACT OF 1934

Commission file number 1-7283

A. Full title of the plan and the address of the plan, if different from that of the Issuer named below:

LEESON ELECTRIC 401(K) PLAN
100 EAST RANDOLPH STREET
WAUSAU, WISCONSIN 54401

B. Name of the issuer of the securities held pursuant to the plan and the address of its principal executive office:

REGAL-BELOIT CORPORATION
200 STATE STREET
BELOIT, WI 53511

REQUIRED INFORMATION

Leeson Electric 401(K) Plan ("Plan") is subject to the Employee Retirement Income Security Act of 1974 ("ERISA"). Therefore, in lieu of the requirements of Items 1-3 of Form 11-K, the financial statements and schedules of the Plan for the two fiscal years ended December 31, 2002 and 2003, which have been prepared in accordance with the financial reporting requirements of ERISA, are attached hereto and incorporated herein by this reference.

SIGNATURES

The Plan. Pursuant to the requirements of the Securities and Exchange Act of 1934, the trustees (or other persons who administer the employee benefit plan) have duly caused this annual report to be signed on its behalf by the undersigned hereunto duly authorized.

LEESON ELECTRIC 401(K) PLAN

By: Leeson Electric 401(K) Plan Administrative Committee and Plan Administrator

Kenneth F. Kaplan

Kenneth F. Kaplan

June 25, 2004

Fritz Hollenbach

Fritz Hollenbach

June 25, 2004

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We consent to the incorporation by reference in Registration Statement No. 333-108092 of Regal-Beloit Corporation on Form S-8 of our report dated May 21, 2004, appearing in this Annual Report on Form 11-K of Leeson Electric 401(k) Plan for the year ended December 31, 2003.

Deloitte & Touche LLP

Milwaukee, Wisconsin
June 23, 2004

LEESON ELECTRIC 401(K) PLAN

Financial Statements - Modified Cash Basis for the Years Ended December 31, 2003 and 2002, Supplemental Schedule as of December 31, 2003, and Report of Independent Registered Public Accounting Firm

LEESON ELECTRIC 401(K) PLAN

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All other schedules required by Section 2520.103-10 of the Department of Labor's Rules and Regulations for reporting and disclosure under the Employee Retirement Income Security Act of 1974 have been omitted because they are not applicable.

Deloitte.

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REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Administrative Committee of the
LEESON Electric 401(k) Plan:

We have audited the accompanying statements of net assets available for benefits - modified cash basis of the LEESON Electric 401(k) Plan (the "Plan") as of December 31, 2003 and 2002, and the related statements of changes in net assets available for benefits - modified cash basis for the years then ended. These financial statements are the responsibility of the Plan's management. Our responsibility is to express an opinion on these financial statements based on our audits.

We conducted our audits in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

As described in Note 2 to the financial statements, these financial statements were prepared on the modified cash basis of accounting, which is a comprehensive basis of accounting other than accounting principles generally accepted in the United States of America.

In our opinion, such financial statements present fairly, in all material respects, the net assets available for benefits of the Plan at December 31, 2003 and 2002, and the changes in net assets available for benefits for the years then ended, on the basis of accounting described in Note 2.

Our audits were conducted for the purpose of forming an opinion on the basic financial statements taken as a whole. The schedule of assets (held at end of year) - modified cash basis as of December 31, 2003 is presented for the purpose of additional analysis and is not a required part of the basic financial statements, but is supplementary information required by the Department of Labor's Rules and Regulations for Reporting and Disclosure under the Employee Retirement Income Security Act of 1974. This schedule is the responsibility of the Plan's management. Such schedule has been subjected to the auditing procedures applied in our audit of the basic 2003 financial statements and, in our opinion, is fairly stated in all material respects when considered in relation to the basic financial statements taken as a whole, on the basis of accounting described in Note 2.

Deloitte & Touche LLP

May 21, 2004

LEESON ELECTRIC 401(K) PLAN

STATEMENTS OF NET ASSETS AVAILABLE FOR BENEFITS - MODIFIED CASH BASIS DECEMBER 31, 2003 AND 2002

	2003	2002
ASSETS:		
Investments, at fair value:		
Mutual funds	$14,757,204	$14,518,553
Common collective trust	2,621,630	3,365,720
Investment in Master Trust	47,616	4
Participant loans	42,355	-
NET ASSETS AVAILABLE FOR BENEFITS	$17,468,805	$17,884,277

See notes to financial statements - modified cash basis.

LEESON ELECTRIC 401(K) PLAN

STATEMENTS OF CHANGES IN NET ASSETS AVAILABLE FOR BENEFITS - MODIFIED CASH BASIS
YEARS ENDED DECEMBER 31, 2003 AND 2002

	2003	2002
CONTRIBUTIONS:		
Employer	$ 311,777	$ 358,390
Employee	1,039,532	1,225,742
Rollover	19,569	85,857
Total contributions	1,370,878	1,669,989
INVESTMENT INCOME (LOSS):		
Interest and dividends	336,202	63,724
Net appreciation (depreciation) in fair value of investments	2,981,682	(2,853,908)
Master Trust income (loss)	5,310	(4,077)
Total investment income (loss)	3,323,194	(2,794,261)
DEDUCTIONS:		
Distributions to participants	4,968,830	1,208,132
Administrative expenses	28,410	14,782
Transfers to other Company plans	112,304	-
Total deductions	5,109,544	1,222,914
NET DECREASE	(415,472)	(2,347,186)
NET ASSETS AVAILABLE FOR BENEFITS, BEGINNING OF YEAR	17,884,277	20,231,463
NET ASSETS AVAILABLE FOR BENEFITS, END OF YEAR	$ 17,468,805	$ 17,884,277

See notes to financial statements - modified cash basis.

LEESON ELECTRIC 401(K) PLAN

NOTES TO FINANCIAL STATEMENTS - MODIFIED CASH BASIS
YEARS ENDED DECEMBER 31, 2003 AND 2002

1. PLAN DESCRIPTION

The following description of the LEESON Electric 401(k) Plan (the "Plan") provides only general information. Participants should refer to the Plan document for a more complete description of the Plan's provisions. The Plan is subject to the provisions of the Employee Retirement Income Security Act of 1974, as amended ("ERISA").

General—The Plan was established by LEESON Electric Corporation (the "Company"), effective August 31, 1974, to provide uniform benefits to all employees of the Company. The Company is a wholly-owned subsidiary of Regal-Beloit Corporation. The Plan is a defined contribution plan covering all eligible employees of the Company and provides for Internal Revenue Code Section 401(k) employee salary deferral benefits and additional employer contributions for the Company's employees.

Prior to December 31, 2002 an employee of the Company became eligible to participate in the Plan on the applicable entry date following the completion of one year of service. The entry dates under the Plan are January 1, April 1, July 1, and October 1. Effective December 1, 2002, the qualifying period was amended to be six months of service.

Plan Administration—ING, Inc. (the "former Trustee") served as trustee and recordkeeper of the Plan through November 30, 2002. Effective December 1, 2002, Marshall & Ilsley Trust Company (the "Trustee") was named trustee and recordkeeper, and all assets were transferred on that date.

Contributions—Prior to December 1, 2002, participants in the Plan could elect to defer up to a maximum of 15% of pre-tax compensation subject to certain Internal Revenue Code ("IRC") limitations. Effective December 1, 2002, the Plan was amended to allow participants to make voluntary contributions up to 100% of total compensation subject to certain IRC limitations. Additionally, all employees who are eligible to make elective deferrals under this Plan and who have attained age 50 before the close of the Plan Year are eligible to make catch-up contributions in accordance with, and subject to the limitations of the IRC. The Company matches employee contributions equal to 50% of the first 4% of compensation contributed. The Company may also make discretionary match and/or profit sharing contributions. The Company made no discretionary contributions during 2003 or 2002.

Participant Accounts—Individual accounts are maintained for each Plan participant. Each participant's account is credited with the participant's contribution, the Company's matching contribution, and allocations of Company discretionary contribution, and Plan earnings, and charged with withdrawals and an allocation of Plan losses and administrative expenses. Allocations are based on participant earnings or account balances, as defined. The benefit to which a participant is entitled is the benefit that can be provided from the participant's vested account.

Vesting—Prior to December 1, 2002, all participants were 100% vested in their salary deferral, discretionary employer contributions, and employer match accounts. Effective December 1, 2002, the Plan was amended to include a vesting provision for the employer contributions based on three years of service for employees hired after the effective date of the amendment.

Forfeited Accounts—Forfeited nonvested accounts totaled $0 at both December 31, 2003 and 2002. In the event of a forfeited account, the forfeitures are first used to pay Plan expenses for the Plan Year following the Plan Year in which the forfeitures occur. Any remaining forfeitures are used to reduce employer contributions in the Plan Year following the Plan Year in which the forfeitures occur.

Investment Options—Participants are able to direct all contributions. During the period from January 1, 2001 through November 30, 2002, participants were able to change their investment elections, in 1% increments, one time per month, among AETNA Group Pooled Separate Accounts. Effective December 1, 2002, participants are able to change their investment options in 10% increments, 12 times per quarter.

The AETNA Group Pooled Separate Accounts were removed from the investment options, and the following investment options became available to participants: Pimco Total Return Fund, Dodge & Cox Balanced Fund, Vanguard Index 500 Fund, AIM Basic Value Fund Class A, Baron Asset Fund - Growth & Income Fund, Templeton Foreign Fund, ABN AMRO/Chicago Cap Growth Fund Class N, Strong Opportunity Fund, Regal-Beloit Corporation Master Trust and M&I Stable Principal Fund. Investments in these funds are effected in the open market or through collective investment funds of the Trustee.

Participant Loans—Effective March 1, 2003, the plan was amended to include a loan provision, limited to 50% of a participant's vested account balance, up to a maximum of $50,000. Interest at prevailing market rates (ranging from 4.25% to 4.86% as of December 31, 2003) is charged on the loan. Only one loan is allowed at any one time. The maximum loan term is five years, unless the loan is used for the acquisition of the participant's primary residence, for which the term of the loan may be extended beyond the five year period. Loans are subject to a loan fee of $50.

Distributions—Vested benefits may be withdrawn upon termination of employment, termination of employment after becoming disabled, or after attaining normal retirement age but continuing to work, or upon Plan termination. Normal retirement age under this Plan is age 65. In addition, the employee deferral may be withdrawn while employed if the participant attains age 59 ½ or incurs a financial hardship. Former employees are subject to a $25 distribution fee.

Plan Termination—Although it has not expressed any intent to do so, the Company reserves the right to modify, suspend, amend or terminate the Plan in whole or in part at any time subject to the provisions of Employee Retirement Income Security Act, ERISA. If the Plan is terminated, the participants fully vest in their account balances.

2. SIGNIFICANT ACCOUNTING POLICIES

Basis of Accounting—The accompanying financial statements are prepared on the modified cash basis of accounting, which is a comprehensive basis of accounting other than accounting principles generally accepted in the United States of America. Under this basis, contributions are recognized at the time such amounts are received rather than when earned. Consequently, contributions receivable due from the Company at December 31, 2003 are not included in the financial statements.

Investment Valuation—Investment purchases and sales are recorded on the trade date. Dividends are recorded on the ex-dividend date. Interest income is recorded on the accrual basis.

Plan investments, except the M&I Stable Principal Fund, are reported at fair value as determined through reference to published market values. The M&I Stable Principal Fund is a common collective trust that invests in fully benefits responsive investment contracts. The investment is valued at contract value which approximates fair value. Participant loans are stated at cost which approximates fair value.

Accounting Estimates—The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America requires the Plan's management to make estimates and assumptions that affect the reported amounts of net assets available for benefits and changes therein. Actual results may differ from these estimates.

The Plan invests in various securities. Investment securities are exposed to various risks including, but not limited to, interest rate, market, and credit risks. Due to the level of risk associated with certain investment securities, it is at least reasonably possible that changes in the values of investment securities will occur in the near term, and that such changes could materially affect the amounts reported in the financial statements.

Benefit Payments—Benefit payments to participants are recorded when paid.

Administrative Expenses—All expenses related to plan administration are paid from Plan assets.

Tranfers—Along with the Plan, the Company also sponsors several other 401(k) plans. If an employee's status changes during the year, their account balance is transferred into the corresponding plan.

Reclassifications—Certain 2002 amounts have been reclassified to conform with the 2003 financial statement presentation.

3. INVESTMENTS

The fair value of individual assets that represent 5% or more of the Plan's net assets as of December 31 are as follows:

	2003	2002
Vanguard Index 500 Fund	$3,454,993	$3,362,223
Dodge & Cox Balanced Fund	3,306,120	3,387,059
AIM Basic Value Fund Class A	2,943,718	2,760,189
M&I Stable Principal Fund*	2,621,630	3,365,720
Pimco Total Return Fund	1,730,527	2,251,708
ABN AMRO/Chicago Capital Growth Fund Class N	1,484,097	1,377,838
Baron Asset Fund - Growth & Income Fund	936,513	

* Represents party-in-interest

During 2003 and 2002, the Plan's investments (including investments bought, sold and held during the year) appreciated (depreciated) in value as follows:

	2003	2002
Pooled Separate Accounts	$ -	$(2,218,268)
Mutual Funds	2,981,682	(635,640)
Total net appreciation (depreciation) in fair value of investments	$2,981,682	$(2,853,908)

4. PLAN PARTICIPATION IN THE REGAL-BELOIT CORPORATION MASTER TRUST

Beginning December 1, 2002, the Plan enables participants to purchase Regal-Beloit Corporation common stock through an "Employee Stock Fund." The Plan's investment in Regal-Beloit Corporation common stock is commingled with four other Company plans in the Regal-Beloit Corporation Master Trust ("Master Trust"). Investments of the Master Trust are carried at fair value as determined by the Trustee through reference to published data. Fees and expenses relating to investment transactions are allocated by the Trustee to participating plans based on each plan's share of Master Trust assets. Earnings and market adjustments relating to investment transactions are allocated by the Trustee to the participating plans based on each plan's specific share of Master Trust assets.

The fair value of the assets held in the Master Trust as of December 31, 2003 and 2002 is as follows:

	2003	2002
Regal-Beloit Corporation Common Stock	$12,306,888	$11,484,443
Marshall Money Market Fund	123,023	214,748
Accrued income	88,992	-
Total assets of the Master Trust	$12,518,903	$11,699,191

At December 31, 2003 and 2002, the Master Trust held 559,404 and 554,804 shares of Regal-Beloit Corporation Common Stock, respectively.

Allocations of assets of the Master Trust to participating plans as of December 31, 2003 and 2002 are as follows:

	2003		2002	
	Amount	%	Amount	%
Regal-Beloit Corporation Personal Savings Plan	$ 10,632,911	84.93 %	$ 5,469,309	46.75 %
Regal-Beloit Corporation Profit Sharing Plan	-	0.00	4,573,491	39.09
Marathon Electric Salaried Employees' 401(k) Savings Plan	937,251	7.49	798,430	6.82
Regal-Beloit Corporation Savings and Protection Plan	624,402	4.99	663,052	5.67
Marathon Electric Hourly 401(k) Savings Plan	276,723	2.21	194,905	1.66
Leeson Electric 401(k) Plan	47,616	0.38	4	0.01
Total assets of the Master Trust	$ 12,518,903	100.00 %	$ 11,699,191	100.00 %

Master Trust income (loss) for the years ended December 31, 2003 and 2002 is as follows:

	2003	2002
Investment income (loss):		
Interest and dividend income	$ 330,491	$ 210,443
Net appreciation (depreciation) in fair value of Regal-Beloit Corporation Common Stock	958,218	(468,464)
Total Master Trust income (loss)	$ 1,288,709	$ (258,021)

A pro rata portion of this income (loss) has been allocated to the Leeson Electric 401(k) Plan.

5. GUARANTEED INVESTMENT CONTRACTS

The Plan invests in the M&I Stable Principal Fund. The M&I Stable Principal Fund primarily invests in guaranteed investment contracts and synthetic guaranteed investment contracts, which are fully benefit-responsive. Fully benefit-responsive investment contracts are valued at contract value, which represents the principal balance of the investment contracts, plus accrued interest at the stated contract rate, less payments received and contract charges by the insurance company, which approximates fair value.

6. TAX STATUS

The Plan uses a prototype plan document sponsored by M&I Trust Company ("M&I"). M&I received an opinion letter from the Internal Revenue Service ("IRS"), dated November 27, 2001, which states that the prototype document satisfies the applicable provisions of the Internal Revenue Code ("IRC"). The Plan itself has not received a determination letter form the IRS. However, the Plan's management believes that the Plan is currently designed and being operated in compliance with the applicable requirements of the IRC. Therefore, no provision for income tax has been included in the Plan's financial statements.

7. RELATED PARTY TRANSACTIONS

Prior to December 1, 2002, the Plan invested in several pooled separate funds managed by the former Trustee. Subsequent to November 30, 2002, the Plan invests in a common collective fund managed by the Trustee. In addition, effective November 29, 2002, participants are allowed to invest in company stock of Regal-Beloit Corporation. These are not considered prohibited transactions by statutory exemption under ERISA. Fees paid by the Plan for investment management services are included as a reduction of Plan assets.

* * * * * *

SUPPLEMENTAL SCHEDULE FURNISHED

PURSUANT TO

DEPARTMENT OF LABOR'S RULES AND REGULATIONS

LEESON ELECTRIC 401(K) PLAN

FORM 5500, SCHEDULE H, PART IV, LINE 4i - SCHEDULE OF ASSETS (HELD AT END OF YEAR) - MODIFIED CASH BASIS DECEMBER 31, 2003

Identity of Issue, Borrower, Lessor, or Similar Party	Description	Fair Value
Vanguard Group	Vangard Index 500 Fund	$ 3,454,993
Dodge & Cox	Dodge & Cox Balanced Fund	3,306,120
AIM	AIM Basic Value Fund Class A	2,943,718
Marshall & Ilsley*	M&I Stable Principal Fund	2,621,630
Pimco	Pimco Total Return Fund	1,730,527
ABN AMRO	Chicago Capital Growth Fund Class N	1,484,097
Baron	Baron Asset Fund - Growth & Income Fund	936,513
Strong	Strong Opportunity Fund	462,848
Templeton	Templeton Foreign Fund	438,388
Regal-Beloit Stock Fund*	Regal-Beloit Corporation Master Trust	47,616
Loans to participants*	Loans to Participants (interest rates ranging from 4.25% to 4.86%)	42,355
TOTAL ASSETS (HELD AT END OF YEAR)		$ 17,468,805

* Represents party-in-interest