

SECURITIES AND EXCHANGE COMMISSION  
Washington, D.C. 20549

Form 11-K

Annual Report pursuant to Section 15(d) of the Securities Exchange Act  
of 1934 - for the fiscal year ended December 31, 2004

Commission file number 1-640

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

NL INDUSTRIES, INC.  
RETIREMENT SAVINGS PLAN

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

NL INDUSTRIES, INC.  
5430 LBJ Freeway, Suite 1700  
Dallas, TX 75240

SIGNATURE

Pursuant to the requirements of the Securities Exchange Act of 1934, the  
Administrator has duly caused this Annual Report to be signed by the undersigned  
thereunto duly authorized.

NL INDUSTRIES, INC.  
RETIREMENT SAVINGS PLAN

By: NL INDUSTRIES, INC.  
PENSION AND EMPLOYEE  
BENEFITS COMMITTEE,  
Administrator of  
NL Industries, Inc.  
Retirement Savings Plan

By: /s/ Gregory M. Swalwell  
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Gregory M. Swalwell,  
Chairman, Pension and  
Employee Benefits Committee

June 28, 2005

NL INDUSTRIES, INC.  
RETIREMENT SAVINGS PLAN

FINANCIAL STATEMENTS AND SUPPLEMENTAL SCHEDULE  
WITH REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

December 31, 2004

NL INDUSTRIES, INC. RETIREMENT SAVINGS PLAN

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\* Other schedules required by Section 2520.103-10 of the Department of Labor's Rules and Regulations for the Reporting and Disclosure under the Employer Retirement Income Security Act of 1974 ("ERISA") have been omitted because they are not applicable.

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Participants and Administrator of NL Industries, Inc. Retirement Savings Plan:

In our opinion, the accompanying statements of net assets available for benefits and the related statement of changes in net assets available for benefits present fairly, in all material respects, the net assets available for benefits of NL Industries, Inc. Retirement Savings Plan (the "Plan") at December 31, 2003 and 2004, and the changes in net assets available for benefits for the year ended December 31, 2004 in conformity with accounting principles generally accepted in the United States of America. 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 of these statements in accordance with 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, assessing the accounting principles used and significant estimates made by management, and evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

Our audits were conducted for the purpose of forming an opinion on the basic financial statements taken as a whole. The supplemental Schedule of Assets

(Held at End of Year) 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 supplemental schedule is the responsibility of the Plan's management. The supplemental schedule has been subjected to the auditing procedures applied in the audits of the basic financial statements and, in our opinion, is fairly stated in all material respects in relation to the basic financial statements taken as a whole.

PricewaterhouseCoopers LLP

Dallas, Texas  
June 28, 2005

NL INDUSTRIES, INC. RETIREMENT SAVINGS PLAN  
STATEMENTS OF NET ASSETS AVAILABLE FOR BENEFITS  
December 31, 2003 and 2004

	2003 ----	2004 ----
<b>Assets:</b>		
Investments at fair value	\$24,065,119	\$24,880,674
Loans to participants	78,308	51,789
Cash	656	656
	-----	-----
	24,144,083	24,933,119
Employer contributions receivable	638,032	413,461
Interest receivable	-	12,043
	-----	-----
Net assets available for benefits	\$24,782,115 =====	\$25,358,623 =====

See accompanying notes to financial statements.

NL INDUSTRIES, INC. RETIREMENT SAVINGS PLAN  
STATEMENT OF CHANGES IN NET ASSETS AVAILABLE FOR BENEFITS  
Year ended December 31, 2004

<b>Additions:</b>	
Investment income:	
Net appreciation in the fair value of investments	\$ 2,299,593
Dividend income	227,814
Interest income	388,713
	-----
Total investment income	2,916,120

Contributions:	
Participants	506,681
Employer	413,461
	-----
Total contributions	920,142
	-----
Total additions	3,836,262
Deductions - benefits to participants	3,259,754
	-----
Net increase in net assets available for benefits	576,508
Net assets available for benefits:	
Beginning of year	24,782,115
	-----
End of year	\$25,358,623
	=====

See accompanying notes to financial statements.

#### NL INDUSTRIES, INC. RETIREMENT SAVINGS PLAN

#### NOTES TO FINANCIAL STATEMENTS

##### Note 1 - Description of Plan and summary of significant accounting policies:

General. The financial statements of the NL Industries, Inc. Retirement Savings Plan (the "Plan") have been prepared in accordance with accounting principles generally accepted in the United States of America ("GAAP"). The following description of the Plan provides only general information. Participants should refer to the Plan agreement for a more complete description of the Plan's provisions.

The Plan is a defined contribution plan, which covers eligible salaried and hourly U.S. employees of NL Industries, Inc. and certain of its U.S. subsidiaries and affiliates (collectively, the "Employer"). Employees are eligible to participate in the Plan as of the first entry date, as defined, concurrent with or next following the completion of six months of eligible service. The Plan is subject to the provisions of the Employee Retirement Income Security Act of 1974, as amended ("ERISA").

NL Industries, Inc. (NYSE: NL) is a subsidiary of Valhi, Inc. (NYSE: VHI). At December 31, 2004, (i) Valhi and a wholly-owned subsidiary of Valhi held approximately 83% of NL's outstanding common stock and (ii) Contran Corporation and its subsidiaries held approximately 91% of Valhi's outstanding common stock. Substantially all of Contran's outstanding voting stock is held by trusts established for the benefit of certain children and grandchildren of Harold C. Simmons, of which Mr. Simmons is sole trustee, or is held by Mr. Simmons or persons or other entities related to Mr. Simmons. Consequently, Mr. Simmons may be deemed to control each of such companies.

At December 31, 2004, NL held approximately 37% of the outstanding common stock of Kronos Worldwide, Inc. (NYSE:KRO) ("Kronos"), and Valhi and a wholly-owned subsidiary of Valhi held an additional 57% of Kronos' outstanding common stock. Prior to July 2004, Kronos was a majority-owned subsidiary of NL, and U.S. employees of Kronos are eligible to participate in the Plan.

Basis of Accounting. The financial statements of the Plan are prepared under the accrual method of accounting.

Contributions. The majority of the Employer's U.S. employees are eligible to voluntarily participate in the Plan after six months of employment. Active participants may make "basic contributions" (as defined by the Plan) of between 1% and 8% of their eligible compensation. Basic contributions may consist of a combination of pre-tax and after-tax contributions. Generally, pre-tax

contributions are excluded from the employee's taxable income until they are distributed. Eligible employees that have elected to make the maximum basic contribution of 8% may also make supplemental pre-tax or after-tax contributions of between 1% and up to 92% of their eligible compensation. Pursuant to the Internal Revenue Code (the "Code"), pre-tax contributions are limited to \$13,000 in 2004 and total participant contributions (pre-tax and after-tax) and employer contributions are limited to \$41,000 in 2004. Eligible employees age 50 or over, by the end of the Plan year, may make an additional \$3,000 pre-tax catch-up contribution.

Highly compensated participants may be required to adjust the amount of their contributions in order to permit the Plan to satisfy certain nondiscrimination requirements of the Code.

Participants may direct the investment of their balances in various funds. Participants may reallocate investments among the available funds on a daily basis. With respect to investments in NL common stock, participants may make only one purchase or sale per month. With respect to investments in Kronos, Valhi and Halliburton Company common stocks, participants may make only sales, but not purchases, of these common stocks. Prior to the investment in one of the available funds, contributions may be held as cash and temporarily invested in securities with maturities of less than one year, issued or guaranteed by the U.S. government or any agency or instrumentality thereof, or deposited in a bank savings account.

Contributions from eligible employees are recorded in the period the employer makes payroll deductions from Plan participants. Employer contributions, if any, are accrued by the end of each year and are received in the subsequent year.

Employer contributions include (i) a match equal to a portion of participants' contributions, (ii) an annual contribution of 4% of employees' eligible earnings and (iii) with respect to certain participants, a contribution related to NL's decision to freeze its defined benefit plan in 1996. The Company's level of matching contributions is determined annually and is based upon the attainment of certain operating income target levels approved by the Management Development and Compensation Committee of the Board of Directors of NL (the "MD&C Committee"). The Company match applies only to eligible participants' basic contributions. The level of match approved by the MD&C Committee for 2004 was 50%. Employees who are eligible to participate in the Plan receive an annual contribution to their investment accounts of 4% of their eligible compensation, subject to Internal Revenue Service ("IRS") limitations on eligible compensation, which for 2004 was \$205,000. The Company makes this annual contribution for each eligible employee regardless of whether the employee elects to otherwise participate in the Plan.

Effective April 1, 2004, EWI Re, Inc. ("EWI"), a wholly-owned subsidiary of NL, was admitted to the Plan. EWI employees are eligible to participate in the Plan with the same eligibility requirements and vesting as described herein. However, EWI participants are not eligible to make additional after-tax contributions or to receive an employer match or other employer contributions.

Vesting and benefits. The vesting schedule for participants allows for 20% vesting of employer contributions following two years of service, 50% vesting following three years of service, 75% vesting following four years of service, and 100% vesting following five years of service. A participant with less than two years of service is 0% vested in employer contributions. Employer contributions are fully vested upon death, retirement or disability, as provided in the Plan.

Distributions to participants may occur upon termination or during active service under prescribed circumstances. Only lump sum distributions are allowed under the Plan.

Benefits are recorded when paid.

Investments. Investments are recorded at fair value based upon the quoted market price reported on the last trading day of the period for those securities listed on a national securities exchange. Listed securities for which no sale was reported on that date are valued at the mean between the last reported bid and ask prices. Short-term investments are stated at fair value.

Purchases and sales of investments are reflected on a trade-date basis. Gains or losses on sales of securities are based on average cost. The Plan presents in the statements of changes in net assets available for benefits the

net appreciation (depreciation) in the fair value of its investments, which consists of realized gains or losses, and unrealized appreciation (depreciation) on investments.

Investment income. Income (loss) from investments is recorded on an accrual basis. Dividend income is recorded on the ex-dividend date.

Participants' accounts. Participants may direct the Plan administrator to invest, in 1% increments, their account balance in publicly traded registered investment companies or pooled funds administered by Merrill Lynch Trust Company ("Merrill Lynch") or NL's common stock. The Plan's assets are invested principally in investment funds managed by (i) Merrill Lynch, (ii) Massachusetts Financial Services, (iii) Oppenheimer Funds Distributor, Inc., (iv) Harris Associates Securities L.P., (v) Calvert Asset Management Company and (vi) State Street Research Funds. At December 31, 2004, Merrill Lynch managed 49% of the Plan's investments. The Plan's assets also include investments in the common stocks of Kronos, Valhi and Halliburton Company. See Note 2.

In addition to the investment funds described above, a "Loan Fund" is maintained to account for loans to participants, as permitted by the Plan. A participant is able to borrow from his/her fund account an amount ranging from a minimum of \$1,000 up to a maximum that is generally equal to the lesser of \$50,000 or 50% of his/her vested account balance. A loan is collateralized by the balance in the participant's account and bears interest at rates commensurate with local prevailing rates. For outstanding loans at December 31, 2004 the rates ranged from 5.00% to 10.50%, maturing through 2009. Principal and interest are repaid ratably over a four- to five-year period through semimonthly payroll deductions.

Each participant's account is credited with the eligible employee's contribution and an allocation of the Employer's contribution and Plan earnings. Allocations are based on participant earnings, matching or account balances, as defined in the Plan.

Forfeitures. Forfeitures of employer contributions may occur if a participant terminates employment prior to the full vesting period or if a participant or beneficiary, to whom a distribution is payable, cannot be located within five years of the date on which such distribution became payable. Amounts forfeited are used in the following order in accordance with Plan provisions: (i) to restore the accounts of reemployed participants, (ii) to restore the accounts of participants or beneficiaries who apply for forfeited benefits and (iii) to reduce employer contributions. In 2004, forfeitures were \$8,494, and forfeiture reinstatements were \$10,564. The balance in the forfeiture account was \$10,128 at December 31, 2003 and \$8,690 at December 31, 2004. In 2004, none of the forfeiture account was used to reduce employer contributions.

Plan termination. The Employer has the right under the Plan to discontinue its contributions at any time and to terminate the Plan in compliance with the provisions of ERISA. In the event the Plan is terminated, the accounts of all participants will become fully vested.

Management estimates. The preparation of financial statements in accordance with GAAP requires management to make estimates and assumptions that affect the reported amounts of assets, liabilities, and changes therein, and disclosure of contingent assets and liabilities. Actual results may, in some instances, differ from previously estimated amounts.

Risks and uncertainties. The Plan provides for various investment options in a variety of stocks, bonds, fixed income securities, mutual funds and other investment securities. Investment securities are exposed to various risks, such as 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 participants' account balances and the amounts reported in the Plan's statement of net assets available for benefits.

Expenses of administering the Plan. The Plan provides that the Employer will generally reimburse the Plan for administrative expenses paid by the Plan. The Employer paid all of the Plan's 2004 administrative expenses.

Tax status. The Plan has been notified by the IRS, by letter dated December 12, 2002, that it is a qualified plan under Section 401(a) and Section 401(k) of the Code, and is therefore exempt from federal income taxes under provisions of Section 501(a) of the Code.

The Plan has been amended since it was notified of its exempt status by the IRS. Management believes the Plan currently is designed and operates in accordance with the applicable requirements of the Code and therefore remains exempt from federal income taxes under provisions of Section 501(a) of the Code.

Note 2 - Related-party transactions:

Certain Plan investments are shares of mutual funds or common collective trusts managed by Merrill Lynch. Merrill Lynch serves as trustee for the Plan. Therefore, transactions involving these investments qualify as party-in-interest transactions.

Three of the available fund options invest in the common stock of NL, Kronos and Valhi. The activity in these securities for the year ended December 31, 2004 was as follows:

	Purchases	Sales and distributions, at cost	Realized gain	Fair value
	-----	-----	-----	-----
NL common stock	\$8,017	\$100,528	\$136,504	\$689,530
Kronos common stock	-	65,581	215,981	624,662
Valhi common stock	-	2,902	11,158	57,645

Dividend income received from related parties for the year ended December 31, 2004 consisted of \$17,511 from NL, \$19,131 from Kronos and \$978 from Valhi. In 2004, NL paid four regular quarterly dividends in the form of shares of Kronos common stock (in lieu of cash). As a result, 987 shares of Kronos common stock were added to the Plan, and the \$17,511 market value of which is included in dividend income for the year ended December 31, 2004.

Note 3 - Investments:

The Plan's investments are stated at fair value based on quoted market prices and net appreciation for the year is reflected in the Plan's statement of changes in net assets available for benefits. The net appreciation consists of realized gains and losses and unrealized appreciation and depreciation on investments. The following presents investments that represent 5% or more of the Plan's net assets.

	December 31,	
	2003	2004
	----	----
Merrill Lynch Retirement Preservation Trust	\$10,391,091	\$8,857,247
Massachusetts Financial Services Value Fund	5,292,095	5,916,528
Merrill Lynch Equity Index Trust	2,411,220	2,615,066
Oakmark International Fund	1,695,135	1,966,013
Oppenheimer Capital Appreciation Fund	1,537,518	1,725,733

During 2004, the Plan's investments (including gains and losses on investments bought and sold, as well as held during the year) appreciated by \$2,299,593 as follows:

Mutual funds	\$1,146,296
Common stocks	903,006
Common collective trusts	250,291
	-----
	\$2,299,593
	=====

NL INDUSTRIES, INC. RETIREMENT SAVINGS PLAN

SCHEDULE H, line 4i - SCHEDULE OF ASSETS (HELD AT END OF YEAR)

December 31, 2004

Employer Identification No. 13-5267260

Plan No. 003

	Fair value
* Merrill Lynch Retirement Preservation Trust	\$ 8,857,247
MFS Value Fund - Class A shares	5,916,528
* Merrill Lynch Equity Index Trust	2,615,066
Oakmark International Fund - Class II shares	1,966,013
Oppenheimer Capital Appreciation Fund	1,725,733
* Merrill Lynch U.S. Government Mortgage Fund - Class A shares	690,370
Calvert Income Fund	649,963
State Street Aurora Fund	545,516
MFS Mid-cap Growth Fund	149,342
Oakmark Select Fund - Class II shares	136,396
MFS New Discovery Fund - Class A shares	58,952
* NL Industries, Inc. common stock	689,530
* Kronos Worldwide, Inc. common stock	624,662
Halliburton Company common stock	197,711
* Valhi, Inc. common stock	57,645
* Loans to participants (with interest rates from 5.0% - 10.50%), maturing through 2009	51,789
* Cash, Merrill Lynch Trust Company, FSB	656
	-----
	\$24,933,119
	=====

\* Investment in a "Party-in-interest" entity, as defined by ERISA.

EXHIBIT A

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We hereby consent to the incorporation by reference in the Registration Statement on Form S-8 (No. 33-25913) of NL Industries, Inc. of our report dated June 28, 2005 relating to the financial statements of the NL Industries, Inc. Retirement Savings Plan, which appears in this Form 11-K.

PricewaterhouseCoopers LLP  
Dallas, Texas  
June 28, 2005