NEOSE TECHNOLOGIES INC
Form S-3/A
May 23, 2003
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As filed with the Securities and Exchange Commission on May 23, 2003

Registration No.333-103883

SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

AMENDMENT NO. 2 TO

FORM S-3

Registration Statement Under

The Securities Act of 1933

Neose Technologies, Inc.

(Exact name of Registrant as specified in its charter)

Delaware	**13-3549286**
(State or other jurisdiction of incorporation or organization)	**(I.R.S. Employer Identification No.)**

102 Witmer Road

Horsham, Pennsylvania 19044 (215) 315-9000

(Address, including zip code, and telephone number, including area code, of Registrant s principal executive offices)

Debra J. Poul, Esquire

Senior Vice President and

General Counsel

Neose Technologies, Inc.

102 Witmer Road

Horsham, Pennsylvania 19044

(215) 315-9000

(Name, address, including zip code, and telephone

number, including area code, of agent for service)

COPY TO:

Barry M. Abelson, Esquire

Pepper Hamilton LLP

3000 Two Logan Square

Eighteenth and Arch Streets

Philadelphia, PA 19103-2779

(215) 981-4000

Approximate date of commencement of proposed sale to the public: As soon as practicable after this Registration Statement becomes effective.

If any of the securities being registered on this Form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933, check the following box. x

If this Form is filed to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act of 1933, please check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering ¨.

If this Form is a post-effective amendment filed pursuant to Rule 462(d) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. ¨

If delivery of the prospectus is expected to be made pursuant to Rule 434, please check the following box. ¨

The Registrant hereby amends this Registration Statement on such date or dates as may be necessary to delay its effective date until the Registrant shall file a further amendment which specifically states that this Registration Statement shall thereafter become effective in accordance with Section 8(a) of the Securities Act of 1933 or until the Registration Statement shall become effective on such date as the SEC, acting pursuant to said Section 8(a), may determine.

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The information in this prospectus is not complete and may be changed. We may not sell these securities until the registration statement filed with the Securities and Exchange Commission is effective. This prospectus is not an offer to sell these securities and it is not soliciting an offer to buy these securities in any state where the offer or sale is not permitted.

Subject to Completion, dated May 23, 2003

PROSPECTUS

2,866,763 SHARES

COMMON STOCK

[NEOSE TECHNOLOGIES, INC. LOGO]

This prospectus relates to the resale of 2,866,763 shares of common stock issued to the selling stockholders listed on page 9 under the terms of a stock purchase agreement. We will not receive any proceeds from the sale of the shares by the selling stockholders.

The selling stockholders, or their pledgees, donees, transferees or other successors-in-interest, may offer the common stock from time to time through public or private transactions, at prevailing market prices, at prices related to prevailing market prices, at privately negotiated prices or any other lawful methods.

Our common stock is listed on The Nasdaq National Market under the symbol NTEC. On May 22, 2003, the reported last sale price of our common stock on The Nasdaq National Market was $10.05 per share.

Our principal offices are located at 102 Witmer Road, Horsham, Pennsylvania 19044, and our telephone number is (215) 315-9000.

INVESTING IN OUR COMMON STOCK INVOLVES RISKS. YOU SHOULD CAREFULLY CONSIDER THE RISK FACTORS BEGINNING ON PAGE 1 OF THIS PROSPECTUS BEFORE YOU DECIDE TO INVEST.

Neither the Securities and Exchange Commission nor any other regulatory body has approved or disapproved of these securities or passed upon the adequacy or accuracy of this prospectus. Any representation to the contrary is a criminal offense.

The date of this Prospectus is _____, 2003.

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You should rely only on the information contained in this prospectus. We have not authorized anyone to provide you with information different from that contained or incorporated by reference in this prospectus. The selling stockholders are offering to sell, and seeking offers to buy, shares of our common stock only in jurisdictions where offers and sales are permitted. The information contained in this prospectus is accurate only as of the date of this prospectus, regardless of the time of delivery of this prospectus or of any sale of common stock.

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WHO WE ARE

We are a biopharmaceutical company focused on improving glycoprotein therapeutics using our proprietary technologies. Most therapeutic proteins in development or on the market today are glycoproteins proteins with carbohydrate structures attached. These carbohydrates are important to the proper functioning of the proteins. The process by which carbohydrates are attached to proteins is called glycosylation. Manufacturing protein drugs using traditional biotech cell systems often results in the problem of incomplete glycosylation. We are using our GlycoAdvance, GlycoPEGylation and GlycoConjugation technologies to develop improved versions of currently marketed drugs with proven efficacy, to complete the natural glycosylation of proteins, and to improve therapeutic profiles of glycoproteins in development for our partners. We expect these next generation proteins to offer significant advantages over drugs that are now on the market, including less frequent dosing and improved safety and efficacy. In addition to developing our own products or co-developing products with others, we expect to enter into strategic partnerships for including our technologies into the product design and manufacturing processes of other biotechnology and pharmaceutical companies. While our primary goal is protein drug development, our technologies offer multiple opportunities to participate in the evolving therapeutic protein market by addressing other challenges, such as manufacturing efficiency, manufacturing consistency, and the use of non-mammalian cell expression systems.

We were incorporated in Delaware in May 1991. Our executive offices and research facility are located at 102 Witmer Road, Horsham, PA 19044, our telephone number is 215-315-9000 and our website is at *http://www.neose.com*. Information contained on our website is not incorporated into this registration statement.

RISK FACTORS

You should carefully consider the risks described below before making an investment decision. These are the material risks currently known to us. Additional risks not presently known to us or that we currently deem immaterial may also impair our business operations.

Our business, financial condition or results of operations could be materially adversely affected by any of these risks. The trading price of our common stock could decline due to any of these risks, and you may lose all or part of your investment.

This prospectus also contains forward-looking statements that involve risks and uncertainties. Our actual results could differ materially from those anticipated in these forward-looking statements as a result of certain factors, including the risks faced by us described below and elsewhere in this prospectus.

Risks Related to Development Stage Company

If we fail to obtain necessary funds for our operations, we will be unable to maintain and improve our technology position and we will be unable to develop and commercialize our therapeutic proteins.

To date, we have funded our operations primarily through proceeds from the public and private placements of equity securities. We have also funded our operations to a lesser extent from interest earned on investments, proceeds from property and equipment financing, revenues from corporate collaborations and gains from the sale of investments. We believe that our existing cash and short-term investments, expected revenue from collaborations and license arrangements, anticipated financing of capital expenditures, and interest income should be sufficient to meet our operating and capital requirements at least through the middle of 2004. Our present and future capital requirements depend on many factors, including:

the level of research and development investment required to develop our therapeutic proteins and improve our technology position;

the progress of preclinical and clinical testing;

the time and cost involved in obtaining regulatory approvals;

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our ability to enter into new agreements with collaborators and to extend our existing collaborations, and the terms of these agreements;

our success rate or that of our collaborators in discovery efforts associated with milestones and royalties;

the timing, willingness, and ability of our collaborators to commercialize products incorporating our technologies;

costs of recruiting and retaining qualified personnel;

costs of filing, prosecuting, defending, and enforcing patent claims and other intellectual property rights;

our need or decision to acquire or license complementary technologies or new drug targets; and

changes in product candidate development plans needed to address any difficulties in clinical studies or in commercialization.

We will require significant amounts of additional capital in the future, and we do not have any assurance that funding will be available when we need it on terms that we find favorable, if at all. We may seek to raise these funds through public or private equity offerings, debt financings, credit facilities, or through corporate collaborations and licensing arrangements.

If we raise additional capital by issuing equity securities, our existing stockholders percentage ownership would be reduced and they may experience substantial dilution. We may also issue equity securities that provide for rights, preferences, or privileges senior to those of our common stock. If we raise additional funds by issuing debt securities, these debt securities would have rights, preferences, and privileges senior to those of our common stock, and the terms of the debt securities issued could impose significant restrictions on our operations. If we enter into a credit facility, the agreement may require us to maintain compliance with financial covenants and restrict our ability to incur additional debt, pay dividends, make redemptions or repurchases of capital stock, make loans, investments or capital expenditures, or engage in other activities. If we raise additional funds through collaborations and licensing arrangements, we may be required to relinquish some rights to our technologies or drug candidates, or to grant licenses on terms that are not favorable to us. If adequate funds are not available or are not available on acceptable terms, our ability to fund our operations, take advantage of opportunities, develop products or technologies, or otherwise respond to competitive pressures could be significantly delayed or limited, and we may need to downsize or halt our operations.

We have a history of losses, and we may incur continued losses for some time.

We have incurred losses each year, including net losses of approximately $8.5 million for the year ended December 31, 2000, approximately $13.3 million for the year ended December 31, 2001, and approximately $26.4 million for the year ended December 31, 2002. Given our planned level of operating expenses, we expect to continue incurring losses for some time. As of December 31, 2002, we had an accumulated deficit of approximately $108 million. To date, we have derived substantially all of our revenue from corporate collaborations, license agreements, and investments. We expect that substantially all of our revenue for the foreseeable future will result from these sources and from the licensing of our technologies. We also expect to spend significant amounts to expand our research and development on our proprietary drug candidates and technologies, maintain and expand our intellectual property position, expand our manufacturing scale-up activities, and expand our business development and commercialization efforts. We may continue to incur substantial losses even if our revenues increase.

In 2003, we expect our investment in capital expenditures to be approximately $3.0 million to $5.0 million which we may finance through the issuance of new debt or equity. Our level of operating expenditures will vary depending upon the stage of development of our proprietary proteins and the number and nature of collaboration agreements we enter into.

We have a joint venture with McNeil Nutritionals, a subsidiary of Johnson & Johnson. The joint venture has incurred losses since its inception, and we expect that the joint venture will incur additional losses for some time while it explores opportunities to continue the development of this technology.

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We have not yet commercialized any products or technologies, and we may never become profitable.

We have not yet developed any products or commercialized any products or technologies, and we may never be able to do so. Since we began operations in 1990, we have not generated any revenues, except for interest income and revenues from collaborative agreements and investments. We do not know when or if we will complete any of our product development efforts, receive regulatory approval of any of our product candidates, or successfully commercialize any approved products. Even if we should be successful in developing products that are approved for marketing, we will not be successful unless our products, and products incorporating our technologies, gain market acceptance. The degree of market acceptance of these products will depend on a number of factors, including:

- the receipt of regulatory approvals for the uses we seek;
- the establishment and demonstration in the medical community of the safety and clinical efficacy of our products and their potential advantages over existing therapeutic products; and
- pricing and reimbursement policies of government and third-party payors, such as insurance companies, health maintenance organizations and other plan administrators.

Physicians, patients, payors or the medical community in general may be unwilling to accept, utilize or recommend any of our products or products incorporating our technologies. As a result, we are unable to predict the extent of future losses or the time required to achieve profitability, if at all. Even if we or our collaborators successfully develop one or more products that incorporate our technologies, we may not become profitable.

Risks Related to Development of Products and Technologies

We have limited product development and commercial manufacturing capability and experience, and we may be unable to develop therapeutic proteins and commercialize our technologies.

Until recently, we have not focused on the development of our own proprietary products. We are now seeking to use our GlycoAdvance, GlycoPEGylation and GlycoConjugation technologies to develop proprietary next generation proteins, generally in collaboration with a partner. Our technologies may not result in the successful remodeling, optimization or development of proteins that are safe or efficacious. Because the development of new pharmaceutical products is highly uncertain, our technologies may not produce any commercially successful proteins. If we fail to validate our technologies through the successful remodeling of the proteins we select for development, we will not be able to license our next generation drug candidates, and our customers will not be able to develop drug candidates incorporating our technologies.

To date, we have manufactured only smaller, noncommercial quantities of our enzymes, sugar nucleotides, and complex carbohydrates. We intend to manufacture enzymes and sugar nucleotides for use in our proprietary product development programs and for use by our customers. Our success depends on our ability to manufacture these compounds on a commercial scale and in accordance with current Good Manufacturing Practices, or cGMP, prescribed by the U.S. Food and Drug Administration, or FDA. We may not be able to manufacture sufficient quantities of the products we develop, even to meet our needs for pre-clinical or clinical development, and we may have problems complying, or maintaining

compliance, with cGMP.

In addition to the normal scale-up risks associated with any manufacturing process, we may face unanticipated problems unique to the manufacture of enzymes, sugar nucleotides, or complex carbohydrates. If we are unable to develop commercial-scale manufacturing capacity, we would seek collaborators, licensees, or contract manufacturers to manufacture the compounds necessary to commercialize our technologies. We may not be able to find parties willing to manufacture these compounds at acceptable prices.

Any manufacturing facility must adhere to the FDA s evolving regulations on cGMP, which are enforced by the FDA through its facilities inspection program. The manufacture of products at these facilities will be subject to strict quality control, testing, and record keeping requirements, and continuing obligations regarding the submission of safety reports and other post-market information. Ultimately, we or our contract manufacturers may not meet these requirements.

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If we encounter delays or difficulties in connection with manufacturing, commercialization of our products and technologies could be delayed, or we could breach our obligations under our collaborative agreements.

Our success depends on collaborative relationships, and our failure to enter into new collaborations or to expand our existing relationships could prevent us from commercializing any product candidates.

We cannot fully develop any proprietary product without the help of a partner. We plan to rely on new collaborative partners to co-develop products and to commercialize products made using our technologies. We are now conducting early stage research programs for our two existing collaborative partners. We anticipate that substantially all of our revenues during the next several years will continue to be generated from collaboration or license agreements. This strategy entails many risks, including:

- we may be unsuccessful in entering into collaborative agreements for the co-development of products, or into new or expanded collaborative agreements for the commercialization of products incorporating our technologies;
- our existing collaborators may not continue or expand the work we are now conducting;
- we may not be successful in adapting our technologies to the needs of our collaborative partners;
- our collaborators may not be successful in, or may not remain committed to, co-developing products incorporating our technologies;
- our collaborators may not commit sufficient resources to incorporating our technologies into their products;
- our collaborators may seek to develop proprietary alternatives to our products or technologies;
- none of our existing collaborators is contractually obligated to continue developing products with us or to market or commercialize products incorporating our technologies, nor is any of them contractually required to achieve any specific production schedule;
- our collaborative agreements are generally terminable by our partners on short notice; and
- continued consolidation in our target markets may also limit our ability to enter into collaboration agreements, or may result in terminations of existing collaborations.

Any of our present or future collaborators may breach or terminate their agreements with us or otherwise fail to conduct their collaborative activities successfully and in a timely manner. In addition, we may dispute the application of payment provisions under any of our collaborative agreements. If any of these events occur or if we fail to enter into or maintain collaborative agreements, we may not be able to commercialize our products and technologies.

We may be exposed to product liability and related risks.

The use in humans of compounds developed by us or incorporating our technologies may result in product liability claims. Product liability claims can be expensive to defend, and may result in large settlements of claims or judgments against us. Even if a product liability claim is not successful, the adverse publicity, time, and expense involved in defending such a claim may interfere with our business. We may not be able to obtain insurance coverage at a reasonable cost or in sufficient amounts to protect us against losses.

Risks Related to Intellectual Property

The failure to obtain or maintain adequate patents, and other intellectual property protection, could impact our ability to compete effectively.

Our commercial success depends in part on avoiding infringing patents and proprietary rights of third parties and developing and maintaining a proprietary position with regard to our own technologies, products and business. As we seek to develop next generation proprietary products, we will investigate the patent protection for our target proteins. Patent protection often comprises multiple claims in multiple patents, requiring complex analysis of which claims may be applicable. In addition, there have been significant litigation and interference proceedings regarding patent rights, and the patent situation regarding particular products is often complex and uncertain. For example, with respect to EPO, the target of our first development program, there are numerous

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patents containing numerous claims. The status of issued patents is currently being litigated. It is possible that applicable claims may be invalidated, opening up the field for us as well as others. It is also possible that applicable claims contained in numerous patents will be upheld. If some or all of these claims are upheld, our ability to market EPO in the U.S. could be delayed until 2015. Even if our product candidate would not infringe issued patent claims, litigation could result, the outcome of which would be uncertain. As we choose other targets, we may face uncertainty and litigation could result, which could lead to liability for damages, prevent our development and commercialization efforts, and divert resources from our business strategy.

Legal standards relating to the validity and scope of claims in our technology field are still evolving. Therefore, the degree of future protection for our proprietary rights in our core technologies and products made using these technologies is also uncertain. The risks and uncertainties that we face with respect to our patents and other proprietary rights include the following:

- the pending patent applications we have filed or to which we have exclusive rights may not result in issued patents or may take longer than we expect to result in issued patents;
- we may be subject to interference proceedings;
- the claims of any patents that are issued may not provide meaningful protection;
- we may not be able to develop additional proprietary technologies that are patentable;
- the patents licensed or issued to us or our customers may not provide a competitive advantage;
- other companies may challenge patents licensed or issued to us or our customers;
- other companies may independently develop similar or alternative technologies, or duplicate our technologies; and
- other companies may design around technologies we have licensed or developed.

We cannot be certain that patents will be issued as a result of any of our pending applications. Nor can we be certain that any of our issued patents would give us adequate protection from competing products. For example, issued patents may be circumvented or challenged and declared invalid, narrow in scope, or unenforceable. In addition, since publication of discoveries in the scientific or patent literature often lags behind actual discoveries, we cannot be certain that we were the first to make our inventions or to file patent applications covering those inventions. In the event that another party has also filed a patent application relating to an invention claimed by us, we may be required to participate in an interference proceeding declared by the U.S. Patent and Trademark Office to determine priority of invention, which could result in substantial uncertainties and cost for us, even if the eventual outcome were favorable to us. It is also possible that others may obtain issued patents that could prevent us from commercializing our products or require us to obtain licenses requiring the payment of significant fees or royalties in order to enable us to conduct our business. As to those patents that we have licensed, our rights depend on maintaining our obligations to the licensor under the applicable license agreement, and we may be unable to do so.

The cost to us of any patent litigation or other proceeding relating to our patents or applications, even if resolved in our favor, could be substantial. Others seeking to develop next generation versions of proteins, or the holders of patents on our target proteins, may have greater financial resources, making them better able to bear the cost of litigation. Uncertainties resulting from the initiation and continuation of patent litigation or other proceedings could have a material adverse effect on our ability to develop, manufacture, and market products, form strategic alliances, and compete in the marketplace.

In addition to patents and patent applications, we depend upon trade secrets and proprietary know-how to protect our proprietary technology. We require our employees, consultants, advisors, and collaborators to enter into confidentiality agreements that prohibit the disclosure of confidential information to any other parties. We require our employees and consultants to disclose and assign to us their ideas, developments, discoveries, and inventions. These agreements may not, however, provide adequate protection for our trade secrets, know-how, or other proprietary information in the event of any unauthorized use or disclosure.

International patent protection is uncertain.

Patent law outside the U.S. is uncertain, and is currently undergoing review and revision in many countries. In addition, the laws of some foreign countries may not protect our intellectual property rights to the same extent as

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U.S. laws. We may participate in opposition proceedings to determine the validity of foreign patents belonging to us or our competitors, which proceedings could result in substantial costs and diversion of our efforts. Finally, some of our patent protection in the U.S. is not available to us in foreign countries due to the differences in the patent laws of those countries.

We may have to develop or license alternative technologies if we are unable to maintain or obtain key technology from third parties.

We have licensed patents and patent applications from a number of institutions. Some of our proprietary rights have been licensed to us under agreements that have performance requirements or other contingencies. The failure to comply with these provisions could lead to termination or modifications of our rights to these licenses. Additionally, we may need to obtain additional licenses to patents or other proprietary rights from other parties to facilitate development of our proprietary technology base. If our existing licenses are terminated or if we are unable to obtain such additional licenses on acceptable terms, our ability to perform our own research and development and to comply with our obligations under our collaborative agreements may be delayed while we seek to develop or license alternative technologies.

Risks Related to Competition

If our competitors succeed in developing more effective or less costly products, we will may not be able to commercialize any next generation protein therapeutics.

Our business is characterized by extensive research efforts and rapid technological progress. New developments in molecular biology, medicinal chemistry, and other fields of biology and chemistry are expected to continue at a rapid pace in both industry and academia. Our potential competitors include both public and private pharmaceutical and biotechnology companies, as well as academic institutions, governmental agencies and other public and private research organizations which are also conducting research activities and seeking patent protection.

A number of these competitors are working on the development of next generation protein therapeutics. Some of these competitors include Maxygen, Applied Molecular Evolution, Nektar, Enzon, Human Genome Sciences, BioRexis and Alkermes. There are a number of companies that have active programs focused on developing next generation or improved versions of EPO. These companies include Roche, Amgen, Johnson & Johnson, Gryphon, Transkaryotic Therapeutics, Human Genome Sciences, and ARIAD. Other companies are active in this area, and we expect that competition will increase. There are several companies that are engaged in glycobiology research. These companies include Crucell, Glycart, and GlycoFi.

Compared to us, many of these companies have more:

- financial, scientific, and technical resources;
- product development, manufacturing and marketing capabilities;

experience conducting preclinical studies and clinical trials of new products; and

experience in obtaining regulatory approvals for products.

Competitors may succeed in developing products and technologies that are more effective and less costly than ours, which would render our products or technologies, or both, obsolete or noncompetitive. We know that other companies with substantial resources are working on the development of next generation proteins, and they may achieve better results in remodeling our target proteins or the target proteins of our potential collaborators.

Competitors also may prove to be more successful in designing, manufacturing and marketing of products. If we are successful in developing our own drug candidates or versions of drugs that are no longer patented, we will compete with other drug manufacturers for market share. If we are unable to compete successfully, our commercial opportunities will be diminished.

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We may be unable to retain key employees or recruit additional qualified personnel.

Because of the specialized scientific nature of our business, we are highly dependent upon qualified scientific, technical and managerial personnel, including our research and development team and our president and CEO, C. Boyd Clarke. The development of our business is dependent upon our management team s ability to evaluate collaboration opportunities and on our CEO s ability to focus the Company s efforts. Our anticipated research and development efforts will require additional expertise and the addition of new qualified personnel. There is intense competition for qualified management and research and development personnel in the pharmaceutical field. Therefore, we may not be able to attract and retain the qualified personnel necessary for the development of our business. The loss of the services of existing personnel, as well as the failure to recruit additional key scientific, technical and managerial personnel in a timely manner would harm our research and development programs, our ability to manage day-to-day operations, attract collaboration partners, attract and retain other employees, and generate revenues. We do not maintain key man life insurance on any of our employees.

Risks Related to Government Approvals

We are subject to extensive government regulation, and we or our collaborators may not obtain necessary regulatory approvals.

The research, development, manufacture, marketing, and sale of our reagents and product candidates manufactured using our technologies are subject to significant, but varying, degrees of regulation by a number of government authorities in the U.S. and other countries.

Pharmaceutical product candidates manufactured using our technologies must undergo an extensive regulatory approval process before commercialization. This process is regulated by the FDA and by comparable agencies in the European Union and other countries. The U.S. and foreign regulatory agencies have substantial discretion to terminate clinical trials, require additional testing, delay or withhold registration and marketing approval, and mandate product withdrawals. Even if regulatory approvals were obtained, our manufacturing processes would be subject to continued review by the FDA and other regulatory authorities. Any later discovery of unknown problems with our products, products incorporating our technologies, or manufacturing processes could result in restrictions on such products or manufacturing processes, including potential withdrawal of the products from the market. In addition, if regulatory authorities determine that we have not complied with regulations in the research and development of a product candidate or the manufacture of our reagents, then we may not obtain necessary approvals to market and sell the product candidate or reagents.

Neither we nor our collaborators have submitted any product candidates for marketing approval to the FDA or any other regulatory authority. If any product candidate manufactured using our technology is submitted for regulatory approval, it may not receive the approvals necessary for commercialization, the desired labeling claims, or adequate levels of reimbursement. Any delay in receiving, or failure to receive, these approvals would adversely affect our ability to generate product revenues or royalties. In addition, new governmental regulations may delay or alter regulatory approval of any product candidate manufactured using our technology. We cannot predict the impact of adverse governmental action that might arise from future legislative and administrative action.

The use of hazardous materials in our operations may subject us to environmental claims or liability.

Our research and development processes involve the controlled use of hazardous materials, chemicals, and radioactive compounds. We conduct experiments that are quite common in the biotechnology industry, in which we use small quantities of chemical hazards, including those that are corrosive, toxic and flammable, and trace amounts of radioactive materials. The risk of accidental injury or contamination from these materials cannot be entirely eliminated. We do not maintain a separate insurance policy for these types of risks. In the event of an accident or environmental discharge, we may be held liable for any resulting damages, and any liability could exceed our resources. We are subject to federal, state, and local laws and regulations governing the use, storage, handling, and disposal of these materials and specified waste products. The cost of compliance with these laws and regulations could be significant.

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Third party reimbursement for our collaborators or our future product candidates may not be adequate.

Even if regulatory approval is obtained to sell any product candidates incorporating our technologies, our future revenues, profitability, and access to capital will be determined in part by the price at which we or our collaborators can sell such products. There are continuing efforts by governmental and private third-party payors to contain or reduce the costs of health care through various means. We expect a number of federal, state, and foreign proposals to control the cost of drugs through governmental regulation. We are unsure of the form that any health care reform legislation may take or what actions federal, state, foreign, and private payors may take in response to the proposed reforms. Therefore, we cannot predict the effect of any implemented reform on our business.

Our ability to commercialize our products successfully will depend, in part, on the extent to which reimbursement for the cost of such products and related treatments will be available from government health administration authorities, such as Medicare and Medicaid in the U.S., private health insurers, and other organizations. Significant uncertainty exists as to the reimbursement status of newly approved healthcare products, particularly for indications for which there is no current effective treatment or for which medical care typically is not sought. Adequate third-party coverage may not be available to enable us to maintain price levels sufficient to realize an appropriate return on investment in product research and development. Inadequate coverage and reimbursement levels provided by government and third-party payors for use of our or our collaborators products may cause these products to fail to achieve market acceptance and would cause us to lose anticipated revenues and delay achievement of profitability.

Risks Related to Stock Market

Our stock price may continue to experience fluctuations.

The market prices of securities of thinly traded companies, such as ours, have historically been highly volatile. For example, in the past 24 months, the price of our common stock reached a low of $5.90 per share in October 2002 and a high of $47.40 per share in July 2001. During the past 12 months the price of our common stock has traded as low as $5.90 per share and as high as $32.58 per share. Sales of a substantial number of shares of our common stock in the public market or the perception that such sales might occur could adversely affect the market price of our common stock. We have a number of investors who hold relatively large positions in our securities and several of these stockholders hold shares that are being registered for resale by this registration statement. A decision by any of these investors to sell all or a block of their holdings of our common stock could cause our stock price to drop significantly.

The market also continues to experience significant price and volume fluctuations, many of which are unrelated to the operating performance of particular companies. In recent years, the price of our common stock has fluctuated significantly and may continue to do so in the future. If we raise additional capital by issuing equity securities in a fluctuating market, many or all of our existing stockholders may experience substantial dilution. If any of the risks described in these RISK FACTORS occurred, or if any unforeseen risk affected our performance, it could have a dramatic and adverse impact on the market price of our common stock.

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

Some of the statements in the sections entitled Who We Are , Risk Factors , and elsewhere in this prospectus constitute forward-looking statements. These statements involve known and unknown risks, uncertainties, and other factors that may cause our or our industry s results, levels of activity, performance, or achievements to be materially different from any future results, levels of activity, performance, or achievements expressed or implied by such forward-looking statements. Such factors include, among others, those listed under Risk Factors and elsewhere in this prospectus. In some cases, you can identify forward-looking statements by terminology such as may , will , should , intend , expect , plan , anticipate , believe , estimate , predict , potential , or continue or the negative of such terms or other comparable termino

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Although we believe that the expectations reflected in the forward-looking statements are reasonable, we cannot guarantee future results, events, levels of activity, performance, or achievements. We do not assume responsibility for the accuracy and completeness of the forward-looking statements. We do not intend to update any of the forward-looking statements after the date of this prospectus to conform them to actual results, except as required by the federal securities laws.

USE OF PROCEEDS

We will not receive any proceeds from the sale by the selling stockholders of our common stock. The selling stockholders will receive all of the net proceeds from the sale of the shares.

SELLING STOCKHOLDERS

We issued 2,866,763 shares of our common stock to the selling stockholders under the terms of the common stock purchase agreement dated February 13, 2003. Mr Brian Dovey, a director of the Company, is a Managing Member of One Palmer Square Associates V, L.L.C., which is the general partner of Domain Partners V, L.P. and DP V Associates, L.P..

We do not know when or in what amounts the selling stockholders may offer shares for sale. The selling stockholders may choose not to sell some or all of the shares offered by this prospectus. We may amend or supplement this prospectus from time to time to update the disclosure set forth herein. Because the selling stockholders may from time to time offer all or some of the shares pursuant to this offering, and because there are currently no agreements, arrangements or understandings with respect to the sale of any of the shares that will be held by the selling stockholders after completion of the offering, we cannot estimate the number of the shares that will be held by the selling stockholders after completion of the offering. However, for purposes of the table below, we have assumed that, after completion of the offering, none of the shares offered by this prospectus will be held by the selling stockholders.

The following table sets forth, to our knowledge, certain information regarding the beneficial ownership of the shares of common stock by the selling stockholders as of March 14, 2003. We prepared this table based on the number of shares acquired by each selling stockholder named in the table pursuant to the terms of the common stock purchase agreement and other publicly available information. Beneficial ownership is calculated based upon SEC requirements and is not necessarily indicative of beneficial ownership for any other purpose. Under these requirements, more than one person may be deemed to be a beneficial owner of the same shares. Unless otherwise indicated below, the selling stockholders named in this table have sole voting and investment power with respect to all shares beneficially owned. Pursuant to Rule 416 under the Securities Act of 1933, the registration statement of which this prospectus is a part also covers any additional shares of our common stock which become issuable in connection with such shares because of any stock dividend, stock split, recapitalization or other similar transaction effected without the receipt of consideration which results in an increase in the number of outstanding shares of our common stock. The table is based on 17,207,766 shares of our common stock outstanding as of March 14, 2003.

Name of Selling stockholders	Shares Beneficially Owned Prior to Offering		Number of Shares Being Offered	Shares Beneficially Owned After Offering	
	Number	Percentage		Number	Percent

Black Bear Fund I, L.P.	889,228(1)	5.2%	98,928	790,300	4.6%
Black Bear Fund II, L.L.C.	107,930(1)	*	16,430	91,500	0.5%
Black Bear Offshore Master Fund Limited	1,936,008(1)	11.3%	301,308	1,634,700	9.5%
Caduceus Capital Trust	122,417	*	122,417	0	0
Caduceus Capital II, L.P.	59,583	*	59,583	0	0

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Name of Selling stockholders	Shares Beneficially Owned Prior to Offering		Number of Shares Being Offered	Shares Beneficially Owned After Offering	
	Number	Percentage		Number	Percent
PW Eucalyptus Fund, L.L.C.	134,333	*	134,333	0	0
PW Eucalyptus Fund, Ltd.	17,333	*	17,333	0	0
George W. Haywood	1,588,866(2)	9.2%	166,666	1,422,200	8.3%
Domain Partners V, L.P.	927,848(3)	5.4%	927,848	0	0
DP V Associates, L.P.	21,918(3)	*	21,918	0	0
Royal Bank of Canada	416,666(4)	2.4%	416,666	0	0
BayStar Capital II, LP	225,000	1.3%	225,000	0	0
BayStar International II Ltd	25,000	*	25,000	0	0
Kopp Emerging Growth Fund	333,333(5)	1.9%	333,333	0	0
TOTAL	6,805,463	39.5%	2,866,763	3,938,700	22.9%

* Less than 1 percent.

(1) The number of shares is based upon a Schedule 13G filed February 13, 2003 by Eastbourne Capital Management, LLC, supplemental information provided to the Company by Eastbourne Capital Management, LLC, and the number of shares acquired pursuant to the common stock purchase agreement. The number of shares does not include any shares beneficially owned by Eastbourne Capital Management, LLC as each of Black Bear Offshore Master Fund Ltd., Black Bear Fund I, L.P., and Black Bear Fund II, L.L.C. disclaim beneficial ownership of any shares not held directly by such entity.

(2) The number of shares is based upon a Schedule 13G filed January 8, 2003 and the number of shares acquired pursuant to the common stock purchase agreement. Such 13G indicates that the number of shares includes (i) 3,545 shares owned by Mr. Haywood s minor children, which children would have the right to the receipt of dividends from, and the proceeds from the sale of, such shares; (ii) 8,200 shares owned by Mr. Haywood s spouse, which spouse would have the right to the receipt of dividends from and proceeds for the sale of such shares; and (iii) 16,000 shares owned jointly by Mr. Haywood and his mother.

(3) Number of shares is based upon a Schedule 13D filed February 24, 2003.

(4) Royal Bank of Canada has represented to us that it purchased the securities registered in this registration statement in the ordinary course of business and, at the time of purchase of those securities, had no agreements or understandings, directly or indirectly, with any person to distribute the securities.

(5) Does not include any shares which may be deemed to be beneficially owned by Kopp Investment Advisors, Inc. Kopp Emerging Growth Fund has represented to us that it purchased the securities registered in this registration statement in the ordinary course of business and, at the time of purchase of those securities, had no agreements or understandings, directly or indirectly, with any person to distribute the securities.

PLAN OF DISTRIBUTION

The shares covered by this prospectus may be offered and sold from time to time by the selling stockholders. The term selling stockholders includes pledgees, donees, transferees or other successors in interest selling shares received after the date of this prospectus from the selling stockholders as a pledge, gift, partnership distribution or other non-sale related transfer. To the extent required, we may amend and supplement this prospectus from time to time to describe a specific plan of distribution.

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The selling stockholders will act independently of us in making decisions with respect to the timing, manner and size of each sale. The selling stockholders may make these sales at prices and under terms then prevailing or at prices related to the then current market price. The selling stockholders may also make sales in negotiated transactions. The selling stockholders may offer their shares from time to time pursuant to one or more of the following methods:

- purchases by a broker-dealer as principal and resale by such broker-dealer for its own account pursuant to this prospectus;
- ordinary brokerage transactions and transactions in which the broker solicits purchasers;
- one or more block trades in which the broker-dealer will attempt to sell the shares as agent but may position and resell a portion of the block as principal to facilitate the transaction;
- on the Nasdaq National Market (or through the facilities of any national securities exchange or U.S. inter-dealer quotation system of a registered national securities association, on which the shares are then listed, admitted to unlisted trading privileges or included for quotation);
- through underwriters, brokers or dealers (who may act as agents or principals) or directly to one or more purchasers;
- through agents; and
- in public or privately negotiated transactions.

In connection with distributions of the shares or otherwise, the selling stockholders may:

- enter into hedging transactions with broker-dealers or other financial institutions, which may in turn engage in short sales of the shares in the course of hedging the positions they assume;
- sell the shares short and redeliver the shares to close out such short positions;
- enter into option or other transactions with broker-dealers or other financial institutions which require the delivery to them of shares offered by this prospectus, which they may in turn resell; and
- pledge shares to a broker-dealer or other financial institution, which, upon a default, they may in turn resell.

In addition to the foregoing methods, the selling stockholders may offer their shares from time to time in transactions involving principals or brokers not otherwise contemplated above, in a combination of such methods described above or any other lawful methods.

In addition, the selling stockholders may sell all or a portion of the shares that qualify for sale pursuant to Rule 144 of the Securities Act of 1933 under Rule 144 rather than pursuant to this prospectus.

Sales through brokers may be made by any method of trading authorized by any stock exchange or market on which the shares may be listed or quoted, including block trading in negotiated transactions. Without limiting the foregoing, such brokers may act as dealers by purchasing any or all of the shares covered by this prospectus, either as agents for others or as principals for their own accounts, and reselling such shares pursuant to this prospectus. The selling stockholders may effect such transactions directly, or indirectly through underwriters, broker-dealers or agents acting on their behalf. In effecting sales, broker-dealers or agents engaged by the selling stockholders may arrange for other broker-dealers to participate. Broker-dealers or agents may receive commissions, discounts or concessions from the selling stockholders, in amounts to be negotiated immediately prior to the sale (which compensation as to a particular broker-dealer might be in excess of customary commissions for routine market transactions).

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In offering the shares covered by this prospectus, the selling stockholders, and any broker-dealers and any other participating broker-dealers who execute sales for the selling stockholders, may be deemed to be underwriters within the meaning of the Securities Act of 1933 in connection with these sales. Any profits realized by the selling stockholders and the compensation of such broker-dealers may be deemed to be underwriting discounts and commissions.

In order to comply with the securities laws of certain states, the shares must be sold in those states only through registered or licensed brokers or dealers. In addition, in certain states the shares may not be sold unless they have been registered or qualified for sale in the applicable state or an exemption from the registration or qualification requirement is available and is complied with.

We have advised the selling stockholders that the anti-manipulation rules of Regulation M under the Securities Exchange Act of 1934, as amended, may apply to sales of shares in the market and to the activities of the selling stockholders and its affiliates. In addition, we will make copies of this prospectus available to the selling stockholders for the purpose of satisfying the prospectus delivery requirements of the Securities Act. The selling stockholders may indemnify any broker-dealer that participates in transactions involving the sale of the shares against certain liabilities, including liabilities arising under the Securities Act.

At the time a particular offer of shares is made, if required, we will distribute a prospectus supplement that will set forth:

- the number of shares being offered;
- the terms of the offering, including the name of any selling stockholders, underwriter, broker, dealer or agent;
- the purchase price paid by any underwriter;
- any discount, commission and other underwriter compensation;
- any discount, commission or concession allowed or reallowed or paid to any dealer;
- the proposed selling price to the public; and
- other facts material to the transaction.

In addition, if we are notified by the selling stockholders that a donee, pledgee, transferee or other successor-in-interest intends to sell more than 500 shares, a supplement to this prospectus will be filed.

We have agreed to indemnify the selling stockholders against certain liabilities, including certain liabilities under the Securities Act.

We have agreed with the selling stockholders to keep the registration statement of which this prospectus constitutes a part effective until the earlier of (i) such time as all of common shares registered hereby have been disposed of in accordance with the intended methods of disposition by the selling stockholders, (ii) such date on which each of the selling stockholders may dispose of all of the common shares registered hereby in one transaction in the open market pursuant to Rule 144(k) under the Securities Act, or (iii) two years from the effective date of this registration statement.

All costs, expenses and fees in connection with the registration of the shares offered hereby will be borne by us. Brokerage commissions and similar selling expenses, if any, attributable to the sale of shares will be borne by the selling stockholders.

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LEGAL MATTERS

The validity of the shares of our common stock offered by this prospectus will be passed upon for us by Pepper Hamilton LLP, Philadelphia, Pennsylvania.

EXPERTS

The financial statements of Neose Technologies, Inc. as of December 31, 2002 and for the year then ended, have been incorporated by reference herein and elsewhere in the registration statement on Form S-3 of which this prospectus forms a part, in reliance upon the report of KPMG LLP, independent accountants, incorporated by reference herein, and upon the authority of said firm as experts in accounting and auditing.

The financial statements incorporated by reference in this registration statement on Form S-3 of which this prospectus forms a part as of December 31, 2001 and for the years ended December 31, 2001 and 2000 and for the period from January 17, 1989 (inception) through December 31, 2001 have been incorporated by reference in reliance on the report of Arthur Andersen LLP, independent public accountants, given on the authority of said firm as experts in auditing and accounting.

Effective April 29, 2002, the Company s Board of Directors approved the dismissal of Andersen as the Company s independent auditors and the appointment of KPMG LLP to serve as the Company s independent auditors. After reasonable efforts, the Registrant has not been able to obtain the written consent of Arthur Andersen LLP to the incorporation by reference of its report into this Registration Statement. The Registrant has dispensed with the requirement to file the written consent of Arthur Andersen LLP in reliance on Rule 437a promulgated under the Securities Act of 1933, as amended (the Securities Act). Since the Registrant has not been able to obtain the written consent of Arthur Andersen LLP, you will not be able to recover against Arthur Andersen LLP under Section 11 of the Securities Act for any untrue statements of material fact contained in the financial statements audited by Arthur Andersen LLP incorporated by reference herein or any omissions to state a material fact required to be stated therein.

ADDITIONAL INFORMATION

This prospectus is part of a registration statement we have filed with the Securities and Exchange Commission. This prospectus does not contain all of the information contained in the registration statement or the exhibits to the registration statement. For further information about us, please see the complete registration statement. Summaries of agreements or other documents in this prospectus are not necessarily complete. Please refer to the exhibits to the registration statement for complete copies of these documents.

We are subject to the information requirements of the Securities Exchange Act of 1934, as amended and file reports, proxy statements and other information with the SEC. You may read and copy such reports, proxy statements and other information, including the registration statements and all of their exhibits, at the SEC public reference room at:

450 Fifth Street, N.W.

Judiciary Plaza

Room 1024

Washington, D.C. 20549

You may obtain information on the operation of the SEC public reference room in Washington, D.C. by calling the SEC at 1-800-SEC-0330. Our SEC filings, including the registration statement of which this prospectus forms a part and the documents incorporated by reference that are listed below, are also available from the SEC s Web site at *http://www.sec.gov*, which contains reports, proxy and information statements and other information regarding issuers that file electronically.

The SEC allows us to incorporate by reference into this prospectus certain information that we file with it. This means that we can disclose important information to you by referring you to another document that we filed

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separately with the SEC. The information incorporated by reference is deemed to be part of this prospectus, except for any information superseded by information in this prospectus. You should read the information incorporated by reference because it is an important part of this prospectus.

We incorporate by reference the following documents that we previously filed with the SEC pursuant to the Exchange Act after the date of the initial registration statement and prior to such of (i) the date of effectiveness of this registration statement and (ii) the termination of this offering (other than those portions of such documents described in paragraphs (i), (k), and (l) of Item 402 of Regulation S-K promulgated by the SEC):

1. Our Annual Report on Form 10-K for the year ended December 31, 2002;

2. Our Quarterly Report on Form 10-Q for the quarter ended March 31, 2003;

3. Our Current Reports on Form 8-K filed on January 7, 2003, January 8, 2003, February 14, 2003 and two filed on April 29, 2003;

4. The description of our common stock contained in the Registration Statement on Form 8-A filed with the Securities and Exchange Commission on February 7, 1996; and

5. The description of rights to purchase preferred shares contained in the Registration Statement on Form 8-A filed with the Securities and Exchange Commission on October 1, 1997.

If you request, either orally or in writing, we will provide you with a copy of any or all documents which are incorporated by reference. We will provide such documents to you free of charge, but will not include any exhibits, unless those exhibits are incorporated by reference into the document. You should address written requests for documents to Debra J. Poul, Senior Vice President and General Counsel, Neose Technologies, Inc., 102 Witmer Road, Horsham, Pennsylvania 19044, (215) 315-9000.

We undertake no obligation to publicly update any forward-looking statements, whether as a result of new information, future events or otherwise. You are advised, however, to consult any further disclosures we make on related subjects in our 10-Q, 8-K and 10-K reports to the SEC. Also note that we provide a cautionary discussion of risks and uncertainties relevant to our business in the Risk Factors section of this prospectus. These are factors that we think could cause our actual results to differ materially from expected results. Other factors besides those listed here could also adversely affect us. This discussion is provided as permitted by the Private Securities Litigation Reform Act of 1995.

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Part II

Information Not Required In Prospectus

Item 14. Other Expenses of Issuance and Distribution

The following table sets forth the various expenses in connection with the sale and distribution of the securities being registered. All of the amounts shown are estimates except the Securities and Exchange Commission registration fee.

SEC registration fee	$ 1,559
Legal fees and expenses	$ 10,000
Accounting fees and expenses	$ 3,500
Miscellaneous fees and expenses	$ 5,000
TOTAL	$ 20,059

Item 15. Indemnification of Directors and Officers

Section 145 of the Delaware General Corporation Law (Section 145) permits a corporation to indemnify any person who was or is a party or is threatened to be made a party to any threatened, pending or completed action, suit or proceeding, whether civil, criminal, administrative or investigative, by reason of the fact that he is or was a director, officer or agent of the corporation or another enterprise if serving at the request of the corporation. Depending on the character of the proceeding, a corporation may indemnify against expenses (including attorneys fees), judgments, fines and amounts paid in settlement actually and reasonably incurred in connection with such action, suit or proceeding if the person indemnified acted in good faith and, in respect to any criminal action or proceeding, had no reasonable cause to believe his conduct was unlawful. In the case of an action by or in the right of the corporation, no indemnification may be made with respect to any claim, issue or matter as to which such person shall have been adjudged to be liable to the corporation unless and only to the extent that the Court of Chancery or the court in which such action or suit was brought shall determine that, despite the adjudication of liability, such person is fairly and reasonably entitled to indemnity for such expenses which the court shall deem proper. Section 145 further provides that to the extent a director, officer, employee or agent of a corporation has been successful in the defense of any action, suit or proceeding referred to above, or in the defense of any claim, issue or matter therein, he shall be indemnified against expenses (including attorneys fees) actually and reasonably incurred by him in connection therewith.

The Certificate of Incorporation of Neose limits the personal liability of directors to Neose or any of its stockholders for monetary damages for breach of fiduciary duty as a director, provided, however, that this limitation does not apply to any liability of a director (i) for any breach of the director s duty of loyalty to Neose or its stockholders, (ii) for acts or omissions not in good faith or which involve intentional misconduct or a knowing violation of law, (iii) under Section 174 of Title 8 of the General Corporation Law of Delaware, or (iv) for any transaction from which the director derived an improper personal benefit.

Section 6 of Article 7 of Neose s second amended and restated by-laws provides to the fullest extent permitted by Section 145 for the indemnification of each person who was or is a party or is threatened to be made a party to any threatened, pending, or completed action, suit, or

proceeding, whether civil, criminal, administrative, or investigative, by reason of the fact that he or she is or was, or has agreed to become, a director or officer of the corporation, or is or was serving, or has agreed to serve, at the request of the corporation, as a director, officer, or trustee of, or in a similar capacity with, another corporation, partnership, joint venture, trust, or other enterprise (including any employee benefit plan), or by reason of any action alleged to have been taken or omitted in such capacity, against all expenses (including attorneys fees), judgments, fines, and amounts paid in settlement actually and reasonably incurred by such person or on such person s behalf in connection with such action, suit, or proceeding and any appeal therefrom.

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Item 16. List of Exhibits

The exhibits filed as part of this registration statement are as follows:

Exhibit	Description
5.1*	Opinion of Pepper Hamilton LLP regarding legality of securities being registered.
10.1(1)	Common Stock Purchase Agreement
23.1**	Consent of KPMG LLP.
23.2	Consent of Pepper Hamilton LLP (included in its Opinion filed as Exhibit 5.1 hereto).
24.1*	Powers of Attorney (included on signature page).

* Filed with the initial registration statement on March 18, 2003.
** Filed herein.

(1) Incorporated by reference to Exhibit 10.36 to the Annual Report on Form 10-K filed on March 17, 2003.

Item 17. Undertakings

The undersigned registrant hereby undertakes:

(1) To file, during any period in which offers or sales are being made, a post-effective amendment to this Registration Statement:

(i) To include any prospectus required by Section 10(a)(3) of the Securities Act of 1933;

(ii) To reflect in the prospectus any facts or events arising after the effective date of the registration statement (or the most recent post-effective amendment thereof) which, individually or in the aggregate, represent a fundamental change in the information set forth in the registration statement. Notwithstanding the foregoing, any increase or decrease in the volume of the securities offered (if the total dollar value of securities offered would not exceed that which was registered) and any deviation form the low or high end of the estimated maximum offering range may be reflected in the form of prospectus filed with the Commission pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than 20 percent change in the maximum aggregate offering price set forth in the Calculation of Registration Fee table in the effective registration statement; and

(iii) To include any material information with respect to the plan of distribution not previously disclosed in the registration statement or any material change to such information in the registration statement;

provided, however, that paragraphs (i) and (ii) above do not apply if the registration statement is on Form S-3 or Form S-8 and the information required to be included in a post-effective amendment by those paragraphs is contained in periodic reports filed by the registrant pursuant to Section 13 or Section 15(d) of the Securities Exchange Act of 1934 that are incorporated by reference in the registration statement

(2) That, for the purpose of determining any liability under the Securities Act, each such post-effective amendment shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial *bona fide* offering thereof.

(3) To remove from registration by means of a post-effective amendment any of the securities being registered which remain unsold at the termination of the offering.

The undersigned Registrant hereby undertakes that, for purposes of determining any liability under the Securities Act of 1933, each filing of the Registrant s annual report pursuant to Section 13(a) or Section 15(d) of the

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Securities Exchange Act of 1934 that is incorporated by reference in the registration statement shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial *bona fide* offering thereof.

Insofar as indemnification for liabilities arising under the Securities Act of 1933 may be permitted to directors, officers and controlling persons of the registrant pursuant to the foregoing provisions or otherwise, the Registrant has been advised that in the opinion of the Securities and Exchange Commission such indemnification is against public policy as expressed in the Act and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the registrant of expenses incurred or paid by a director, officer or controlling person of the registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the Registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question of whether such indemnification by it is against public policy as expressed in the Act and will be governed by the final adjudication of such issue.

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SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, Neose Technologies, Inc. certifies that it has reasonable grounds to believe that it meets all of the requirements for filing on Form S-3 and has duly caused this registration statement to be signed on its behalf by the undersigned, thereunto duly authorized in Horsham, Pennsylvania on May 23, 2003.

Neose Technologies, Inc.

By: /s/ C. Boyd Clarke

C. Boyd Clarke

Chief Executive Officer

Signature	Title	Date
*	President, Chief Executive Officer (Principal Executive Officer) and Director	May 23, 2003
C. Boyd Clarke		
*	Senior Vice President and Chief Financial Officer (Principal Financial Officer)	May 23, 2003
Robert I. Kriebel		
*	Director	May 23, 2003
L. Patrick Gage		
*	Director	May 23, 2003
William F. Hamilton		
*	Director	May 23, 2003
Douglas J. McMaster, Jr.		
*	Director	May 23, 2003
Mark H. Rachesky		
*	Chairman of the Board of Directors	May 23, 2003
Stephen A. Roth		

*	Director	May 23, 2003
Lowell E. Sears		
*	Director	May 23, 2003
Elizabeth H. S. Wyatt		

By: /s/ Debra J. Poul

Debra J. Poul

Attorney in Fact

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Exhibit Index

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