Schering-Plough
Global Safety & Environmental Affairs

Schering-Plough Corporation
Global Supply Chain
1095 Morris Avenue
Union, New Jersey 07083-7143
Telephone (908) 298-4000

31 March 2005

Licensing Assistant Section
Nuclear Materials Safety Branch
US Nuclear Regulatory Commission, Region I
475 Allendale Road
King of Prussia, PA 19406-1415

03005230

Subject: NRC Broad Scope Byproduct Material License No.: 29-00244-02: Decommissioning Funding Plan and Financial Assurance Update

Dear Sir:

Attached is the Revised Decommissioning Funding Plan and Financial Assurance for Schering Corporations NRC Broad Scope Byproduct Material License No.: 29-00244-02. The attached plan and financial assurance supercedes the previous versions submitted in 1999 with our license renewal. If you have any questions or require any additional information please contact me at (908) 740-3577.

Very truly yours,

Frederick H. Jaeger
Radiation Safety Officer

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NMSS/RGNI MATERIALS-002

Schering-Plough

Schering-Plough Corporation
2000 Galloping Hill Road
Kenilworth, New Jersey 07033-0530
Telephone (908) 298-4000

March 30, 2005

United States Nuclear Regulatory (U.S.N.R.C.) Commission
Region I
475 Allendale Road
King of Prussia, PA 19406

Re: Schering Corporation, License No. 29-00244-02

Dear Sirs:

I am the chief financial officer of Schering-Plough Corporation. This letter is in support of this firm's use of the financial test to demonstrate financial assurance, as specified in 10 CFR Part 30.

This firm guarantees, through the parent company guarantee submitted to demonstrate compliance under 10 CFR Part 30, the liability coverage for decommissioning of the following facilities owned or operated by a subsidiary of this firm. The current cost estimates or certified amounts for decommissioning, so guaranteed, are shown for each facility:

| Name of Facility | Location of Facility | Current Cost Estimates |
|---|---|---|
| Schering Corporation<br>License No. 29-00244-02 | 2000 Galloping Hill Rd<br>Kenilworth, NJ 07033-0530 | $638,415 |
| Schering Corporation | 144 Route 94<br>P.O. Box 32<br>Lafayette, NJ 07848 | $ 35,915 |
| Schering Corporation | 556 Morris Avenue<br>Summit, NJ 07901 | $ 22,415 |
| Schering Corporation | 1011 Morris Avenue<br>Union, NJ 07083-7197 | $ 11,657 |
| Schering Corporation | 104 Orange Street<br>Bloomfield, NJ 07033 | $ 12,918 |

This firm is required to file a Form 10K with the U.S. Securities and Exchange Commission for the latest fiscal year.

The fiscal year of this firm ends on December 31. The figures for the following items marked with an asterisk are derived from this firm's independently audited, year-end financial statements and footnotes for the latest completed fiscal year, ended December 31, 2004.

## Financial Test: Alternative II

| | | |
|---|---|---|
| 1. | Decommissioning cost estimates for facility 29-00244-02 (total of all cost estimates shown in paragraphs above) | $ .721 |
| 2. | Current bond rating of most recent issuance and name of rating service: | |
| | Senior unsecured debt rating | A-/S&P |
| | Short-term corporate credit and commercial paper rating | A-2/S&P |
| | Senior unsecured credit rating | Baa1/Moody's |
| | Commercial paper rating | P-2/Moody's |
| 3. | Date of issuance of bond: | |
| | $1.25 billion aggregate principal amount of 5.3 percent senior unsecured notes | November 26, 2003 |
| | $1.15 billion aggregate principal amount of 6.5 percent senior unsecured notes | November 26, 2003 |
| 4. | Date of maturity of bond: | |
| | $1.25 billion aggregate principal amount of 5.55 (A) percent senior unsecured notes | 2013 |
| | $1.15 billion aggregate principal amount of 6.75 (A) percent senior unsecured notes | 2033 |
| 5.* | Tangible net worth | $ 6,976 MM |
| 6.* | Total assets in United States | $4,906 MM |
| 7. | Is line 5 at least $10 million? | Yes |
| 8. | Is line 5 at least 6 times line 1? | Yes |
| 9. | Is line 6 at least 6 times line 1? | Yes |

* Denotes figures derived from financial statements; MM denotes millions.

(A) On November 26, 2003, the Company issued $1.15 billion aggregate principal amount of 5.3% senior unsecured notes due 2013 and $1.15 billion aggregate principal amount of 6.5% senior unsecured notes due 2033. Upon issuance, the notes were rated A3 by Moody's Investors Service (Moody's) and A+ (on Credit Watch with negative implications) by Standard & Poor's (S&P). The interest rates payable on the notes are subject to adjustment. If the rating assigned to the notes by either Moody's or S&P is downgraded below A3 or A-, respectively, the interest rate payable on that series of notes would increase.
On July 14, 2004, Moody's lowered its rating on the notes to Baa1. Accordingly, the interest payable on each note increased 25 basis points effective December 1, 2004. Therefore, on December 1, 2004, the interest rate payable on the notes due 2013 increased from 5.3% to 5.55% and the interest rate payable on the notes due 2033 increased from 6.5% to 6.75%.

This guarantee will remain in force unless the guarantor sends a notice of cancellation by certified mail to Schering Corporation and the Commission. If Schering Corporation fails to provide alternate financial assurance as specified in the Commission's regulations within 90 days after receipt by Schering Corporation and Commission of a notice of cancellation of Schering-Plough Corporation's guarantee from the guarantor, the guarantor will provide such alternative financial assurance in the name of Schering Corporation. Schering-Plough Corporation's guarantee and financial test provisions will remain in effect until the Commission has terminated the above licenses.

I hereby certify that the content of this letter is true and correct to the best of my knowledge.

Robert J. Bertolini
Executive Vice President and
Chief Financial Officer
March 30, 2005

Sworn to and subscribed before me
this 30th day of March 2005

MYRA A. McGINLEY
A Notary Public of New Jersey
My Commission Expires June 30 2009

Deloitte.

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## INDEPENDENT ACCOUNTANTS' REPORT ON APPLYING AGREED-UPON PROCEDURES

Schering-Plough Corporation
2000 Galloping Hill Road
Kenilworth, New Jersey 07033

We have performed the procedures included in the Code of Federal Regulations ("CFR") Title 10, Chapter 1, Part 30, which were agreed to by the U.S. Nuclear Regulatory Commission (the "NRC") and Schering-Plough Corporation and subsidiaries (the "Company"), solely to assist the specified parties in evaluating the Company's compliance with the financial test option as of December 31, 2004, included in the accompanying letter dated March 30, 2005 from Mr. Robert J. Bertolini, Executive Vice President and Chief Financial Officer of the Company. Management is responsible for the Company's compliance with those requirements. This agreed-upon procedures engagement was conducted in accordance with attestation standards established by the American Institute of Certified Public Accountants. The sufficiency of these procedures is solely the responsibility of the parties specified in this report. Consequently, we make no representation regarding the sufficiency of the procedures described below either for the purpose for which this report has been requested or for any other purpose.

The procedures that we performed and related findings are as follows:

1. We compared the amount shown in the accompanying Schedule 1 under the column "Per Financial Statements" for Net Worth to the amount shown as "Total shareholders' equity" in the audited consolidated financial statements of the Company for the year ended December 31, 2004 and found such amount to be in agreement.

2. We compared the amount shown in the accompanying Schedule 1 under the column "Reconciling Items" for Intangible assets to the sum of the amounts shown as "Goodwill" and "Other intangible assets, net" in the audited consolidated financial statements of the Company for the year ended December 31, 2004 and found such amount to be in agreement.

3. We compared the amount shown in the accompanying Schedule 1 under the column "Reconciling Items" for Accrued decommissioning costs included in current liabilities to analyses prepared by management of the Company setting forth that there were no such items and found the amount to be in agreement.

4. We compared the amount shown in the accompanying Schedule 1 under the column "Per Chief Financial Officer's Letter" for Tangible net worth (plus accrued decommissioning costs) to the amount shown in Items included under the caption "Financial Test: Alternative II" in the letter referred to above and found such amount to be in agreement.

5. We proved the mathematical accuracy of the Tangible net worth (plus accrued decommissioning costs) identified in the accompanying Schedule 1.

We were not engaged to, and did not, perform an examination, the objective of which would be the expression of an opinion on the accompanying letter dated March 30, 2005. Accordingly, we do not express such an opinion. Had we performed additional procedures, other matters might have come to our attention that would have been reported to you.

This report is intended solely for the information and use of the board of directors and management of the Company and the specified parties listed in the first paragraph, and is not intended to be and should not be used by anyone other than these specified parties.

Deloitte & Touche LLP

March 30, 2005

Schedule 1

SCHERING-PLOUGH CORPORATION
YEAR ENDED DECEMBER 31, 2004
(Dollars in Millions)

| Line Number in Chief Financial Officer's Letter | | Per Financial Statements | Reconciling Items | Per Chief Financial Officer's Letter |
|---|---|---|---|---|
| 5 | Net Worth | $ 7,556 | | |
| | Less: Intangible assets | | $ 580 | |
| | Accrued decommissioning costs included in current liabilities | | $ 0 | |
| | Tangible net worth (plus accrued decommissioning costs) | | | $ 6,976 |

# Revised Decommissioning Funding Plan
# (Radiological Decommissioning Cost Estimate)

Schering Corporation
Kenilworth, NJ

NRC Material License No. 29-00244-02

March 1999
(Revised April 2001)
(Revised February 2005)

Table of Contents

# Revised Decommissioning Funding Plan
# (Radiological Decommissioning Cost Estimate)
# Schering Corporation
# Kenilworth, NJ

NRC Material License No. 29-00244-02
March 1999
(Revised April 2001)
(Revised February 2005)

**Introduction to February 2005 Revision**

This February 2005 revision updates the Decommissioning Funding Plan issued April 2001.

This revision incorporates consideration of the site at 556 Morris Avenue, Summit, NJ which was added to the NRC license in September 2003. The numbers of labs and other rooms using radioactive material were adjusted to current figures. Decommissioned rooms were not excluded from consideration since in some cases a final decommissioning survey might also be done in rooms previously decommissioned by the licensee.

The April 2001 unit costs were adjusted to current (February 2005) costs when actual costs were available. If actual current unit costs were not available, the April 2001 unit costs were adjusted to April 2005 using an inflation figure of 9.7% over the 4-year period 2000-2004. (Reference: US U.S. Department of Labor, Bureau of Labor Statistics, Consumer Price Indexes, http://data.bls.gov/cgi-bin/cpicalc.pl )

Although decommissioning funding planning applies only to radionuclides with half-lives greater than 120 days, decommissioning efforts for radionuclides with shorter half-lives were not rigorously excluded from this plan. Therefore, this plan will tend to overestimate the cost figure as required by 10 CFR 30.35.

**Introduction to April 2001 Revision**

In April 2001 the Decommissioning Funding Plan was again revised to take into account changes since the March 1999 revision. This document reflects changes in unit costs and quantity of rooms/areas to survey and decontaminate. Where no other data are available, unit costs are increased by an inflation rate of 4% per year, or 8% since the 1999 revision. It also includes the anticipated expansion of the Kenilworth radiochemistry department which is scheduled to be completed in 2001. Also updated are the numbers of rooms at each site which have permission to use radioactive materials. Decommissioning of a radioactive dose preparation hood was added to the Lafayette site.

**Introduction**

This revised Decommissioning Funding Plan (DFP) has been prepared in accordance with the Nuclear Regulatory Commission (NRC) regulation 10 CFR 30.35, Financial Assurance and Recordkeeping for Decommissioning, and NRC Regulatory Guide 3.66, "Standard Format and Content of Financial Assurance Mechanisms Required for Decommissioning Under 10 CFR Parts 30, 40, 70, and 72."

Decommissioning is defined by NRC Regulatory Guide 3.66 as removing (as a facility) safely from service and reducing residual radioactivity to a level that permits release of the property for unrestricted use and termination of license.

This plan provides an analysis and cost estimate for decontamination of all facilities to meet the radiation dose criteria from residual radioactivity of 10 CFR 20 Subpart E, ARadiological Criteria for License Termination as published in the Federal Register, 21 July 1997, page 39058-39092. These criteria allow for decommissioning to levels satisfactory for either unrestricted use (see 10 CFR 20.1402) or for restricted use see (see 10 CFR 20.1403). For planning purposes, this decommissioning funding plan assumes all facilities will be decontaminated to levels suitable for unrestricted use.

Schering Plough holds license number 29-00244-02 which authorizes possession and use of byproduct material at five sites located at:

556 Morris Avenue, Summit, NJ (this site added to NRC license in 2003)
2000 and 2015 Galloping Hill Road, Kenilworth, NJ
Route 94, Lafayette, NJ
1011 Morris Avenue, Union, NJ
104 Orange Street (Building 33), Bloomfield, NJ

This consolidated DFP contains analyses and cost estimates for each of the five sites separately.

This is a revision of the licensee=s Decommissioning Funding Plan dated March 1994. Since 1992, the licensee has moved all of the research operations located in Bloomfield to its facility in Kenilworth. The facility in Bloomfield has been decommissioned and removed from the license, except for a small area known as Building 33 which is now used only for storage and management of containers of radioactive waste.

**Technical Basis**

Schering's byproduct material license is a type A specific license of broad scope allowing a wide latitude for possession and use of many different radionuclides. However, Schering's actual possession and use of radionuclides have largely been limited to a small number of specific radionuclides, particularly H-3, C-14, P-32, P-33, S-35, Ca-45 and I-125. Therefore, this Decommissioning Funding Plan is based on known prior use and current experience with byproduct material.

Recent radiological survey data exist and were used to determine the need for decontamination to meet the NRC criteria in 10 CFR 20 Subpart E, Radiological Criteria for License Termination. In almost all cases, recent routine contamination surveys show that contemporary radioactive contamination levels are well below 500 dpm/100 $cm^2$. The only exception is the Radiochemistry Department in Building K-15 on the Kenilworth site where routine contamination levels inside chemical fume hoods and perhaps ductwork can be substantially higher.

Between 1992 and 1993, the Kenilworth site assumed all of the research operations formerly located in Bloomfield. Therefore, almost all of the radioisotope use in Kenilworth is very recent and is located in the new building known as K-15 Drug Discovery Building.

The Kenilworth facility contains a few specialized labs which handle larger amounts of radioactivity than the general purpose labs. These specialized places include the radiochemistry lab (using H-3 and C-14), the radioiodine lab (initially designed for I-125 but now used for H-3 radiochemistry), the radioactive waste processing room and the incinerator. Each of these specialized labs is addressed separately in the decontamination analysis.

The following table summarizes the number of rooms at each site as they exist in early 2005. It will be assumed for planning purposes that rooms previously decommissioned by the licensee during normal operations will be surveyed again during the final site decommissioning.

| Site | Number of Labs or Rooms | | |
|---|---|---|---|
| | Currently Authorized | Previously Decommissioned | Total |
| Kenilworth | 240 | 30 | 270 |
| Summit | 10 | 0 | 10 |
| Lafayette | 17 | 10 | 27 |
| Bloomfield | 1 | 5 | 6 |
| Union | 1 | 3 | 4 |

No credit has been taken for the salvage value of any materials or equipment which would be decontaminated.

**Derived Concentration Guideline Levels (DCGLs)**

In order to meet the criteria for decommissioning in 10 CFR 20 Subpart E, Radiological Criteria for License Termination, it is necessary to determine the Derived Concentration Guideline Level (DCGL) for each radionuclide. The DCGL is the activity concentration (e.g.,dpm/100 $cm^2$) within a survey unit corresponding to the release criterion and is derived from activity/dose relationships through exposure pathway scenarios.

For planning purposes, DCGL is calculated for the longer lived radionuclides H-3 and C-14 using the RESRAD-Build computer code.[1] The assumptions used by the code are that a person spends 1/4 of his time in a 36 $m^2$ room where a 36 $m^2$ uniform contamination exists on the floor. The outside air exchange rate is 0.8 $h^{-1}$ and half of the contamination is removed over a 365 day period. The fraction released to air is 0.1 and the ingestion rate of the person in the room is 1e-07 $h^{-1}$. Under these conditions, the surface contamination level to give a person 25 mrem during the year is as follows:

| **Radionuclide** | **Surface Concentration to Give 25 mrem in a year. dpm/100 $cm^2$** | **Surface Concentration to Give 2.5 mrem in a year. (ALARA target) dpm/100 $cm^2$** |
|---|---|---|
| H-3 | 440,000,000 | 44,000,000 |
| C-14 | 12,500,000 | 1,250,000 |

For planning purposes, it is assumed that the ALARA requirement found in 10 CFR 20.1402 will reduce the radiation dose from 25 mrem to 2.5 mrem, a factor of 10 ALARA dose reduction. The surface concentrations to give 2.5 mrem in a year are also given in the above table.

A decontamination target level of 1,000,000 dpm/100$cm^2$ is chosen for planning purposes. That is, any survey unit where the average surface concentration of C-14 plus H-3 is below 1,000,000 dpm/100$cm^2$

[1]RESRAD-Build: A Computer Model for Analyzing the Radiological Doses Resulting from the Remediation and Occupancy of Buildings Contaminated with Radioactive Material, Argonne National Laboratory, US Department of Energy, version 2.1.

will be assumed to meet both the 25 mrem/y criteria for unrestricted use and the ALARA requirement.

**Projected Scope of Decontamination**

Based on current operational surveys information and site histories, it is projected that little or no radiological decontamination will be needed at the licensee's existing sites to meet the decontamination target level of 1,000,000 dpm/100 $cm^2$. Limited ALARA-based decontamination may be applied in selected rooms such as the radiochemistry area in building K-15 in Kenilworth. Costs for the characterization/final radiological surveys are included.

**Unit Cost Estimates**

Estimates of decommissioning costs are based on unit costs in current (2005) dollars. Table 1 lists unit costs used for estimating specific decommissioning costs.

Table 1
Unit Costs for Estimating Decommissioning Costs

| Operation or Job Function | Unit Cost (2005 dollars) | Units |
|---|---|---|
| Waste disposal (licensed radioactive waste broker to pick up containers, pay all fees and surcharges, and ship drum to low level waste disposal site or waste processor.) | $6.30 | per pound |
| Waste disposal (licensed radioactive waste broker to pick up containers, pay all fees and surcharges, and ship drum to low level waste disposal site or waste processor.) Cost for large size items. | $7.25 | per pound |
| Waste disposal by Metal Melting. Metal melting fee includes all shipping, melting and disposal costs. | $7.25 | per pound |
| Laboratory analysis of swipe for contamination using liquid scintillation analysis for beta activity. Cost per radiological analysis performed on site, based on cost of liquid scintillation solution and vial. | $0.48 | per analysis |
| Certified Health Physicist | $1,800.00 | per day |
| Site Decommissioning Manager | $1,069.58 | per day |
| Health Physics Technician | $767.90 | per day |
| Clerical Worker | $356.53 | per day |
| Weight of a 6-foot metal fume hood | 500 | lbs/hood |

| Operation or Job Function | Unit Cost (2005 dollars) | Units |
|---|---|---|
| Weight of metal duct | 6.5 | lbs/foot |

**Means for Adjusting the Cost Estimate and Associated Funding Level over the Life of the Facility**

At least once in every three years the licensee will review this DFP to determine if the cost estimate requires adjustment. The review will include evaluation of unit costs used in determining decommissioning costs. These unit costs include but are not limited to:

- Labor rates ($/hr)
- Radioactive waste disposal rates ($/lb or $/container)

The review will also evaluate whether the extent of areas and items projected to require decontamination has increased or decreased.

Any changes in NRC regulations affecting residual radioactivity levels suitable for release for unrestricted use will be evaluated for an effect on the cost estimate.

**Summary of Decommissioning Cost Estimates**

A summary of the total cost per site, and for the five sites combined, is given in Table 2. Decommissioning costs are estimated separately for each site using cost estimating worksheets derived from guidance in NRC Regulatory Guide 3.66.

Table 2
Summary of Decommissioning Costs at Each Site, and for All Four Sites Combined

| Facility | Decommissioning Cost Estimate |
|---|---|
| Kenilworth | $638,415 |
| Summit | $22,415 |
| Lafayette | $35,915 |
| Union | $11,657 |
| Bloomfield | $12,918 |
| **Total for all sites:** | **$721,320** |

**Kenilworth Site**

The Kenilworth site has approximately 240 general purpose approved radioisotope use areas where NRC licensed radioactive materials are stored and/or used. In addition, there are several special purpose areas where larger amounts of radioactive materials are used. These are the radiochemistry labs (using H-3 and C-14), the radioiodine lab (designed for using I-125 but now used for H-3 radiochemistry), radioactive waste processing rooms, and the incinerator.

The characterization survey will precede the decontamination. Following decontamination, the areas which were decontaminated will be resurveyed, and if necessary decontaminated again. The final survey will consist of survey data generated during the characterization survey and the resurveys of decontaminated areas.

There are currently (2005) approximately 240 labs or rooms which are authorized to use radioactive material. In addition about 30 labs have been decommissioned by the licensee as part of routine operations. Therefore, the characterization survey will consist of radiological surveys of approximately 240 + 30 = 270 labs and radioisotope use areas where radioactivity had been used or authorized to be used, and spot checks of adjacent areas such as corridors and offices. It is estimated that a 3-person team can survey 8 labs per day. The 3-person survey team would survey the special purpose areas mentioned above, and 20% of the labs where radioactive materials were never used (unaffected areas), about 100 labs. Thus, the 3-person team would need about 46 days to survey the approximately 370 labs. The time to prepare the samples and load the liquid scintillation analyzer is included in the survey time. An additional 25 person-days are allocated for data management.

The Radiochemistry Lab is located at the Kenilworth site in Building K15, A Block, 4th floor, with approximately 2700 square feet (270 $m^2$) of lab space, with adjoining offices separated by walls and doors. The radiochemistry lab rooms are under negative pressure with respect to adjoining rooms and corridors. Floors are of an impermeable material without seams.

There will be 20 hoods in the radiochemistry area (including the iodination room which is now used for tritium work), sufficient for each radiochemist to be able to conduct work with millicurie quantities in a hood. Although future contamination levels will be determined by actual surveys, for planning purposes these radiochemistry hoods and ducts are assumed to be contaminated at levels requiring remediation. The total estimated amount of exhaust ducts considered for remediation is 350 linear feet, up from 250 liner feet as estimated in year 2001.

The radioactive waste processing rooms in K-15-LL contain equipment for compacting dry waste in 55 gallon drums, a crusher for crushing glass and plastic vials containing spent liquid scintillation solution, and a sink for disposing of liquid radioactive materials into the sewer. The vial crusher is not currently used but may be contaminated. The area of the radioactive waste processing room is approximately 80 $m^2$. A small exhaust duct is connected to the vial crusher and the solid waste compactor. The floor is epoxy painted concrete.

Of the 270 general radioisotope use labs and the special use areas, none are expected to have any contamination above the target level of 1,000,000 dpm/100 $cm^2$. This analysis is based on routine lab surveys conducted by the Radiation Safety Office.

The facility has a small incinerator which is used regularly (less than 1 batch per month) to incinerate radioactive waste. Routine radiological checks of the incinerator when it was not operating have not shown any contamination inside. However, a complete survey will be made at the time of decommissioning. For purposes of planning, it will be assumed that the inside of the incinerator will be below the target level of 1,000,000 dpm/100 $cm^2$.

The decommissioning analysis and cost estimate shown in Table 3 below cover all labs and areas where NRC licensed material is stored and/or used on the Kenilworth site. The format used is based on Appendix F, Cost Estimating Tables, A Standard Format and Content of Financial Assurance Mechanisms Required for Decommissioning Under 10 CFR Parts, 30, 40, 70, and 72. US NRC Regulatory Guide 3.66, June 1990.

Table 3
Decommissioning Cost Analysis -Kenilworth Site

| Schering Corporation, Kenilworth Site<br>2000 and 2015 Galloping Hill Road, Kenilworth, NJ | Units | Unit Rate ($/unit) | Cost Feb-05 ($) |
|---|---|---|---|
| 1 Planning and Preparation. | | | |
| 1.1 Preparation of documentation for regulatory agencies, including decommissioning plan when required by 10 CFR 30.36(c)(2), and development of work plans. This also includes time to categorize radioactive waste as to its chemical and radiological characteristics and determine proper methods of disposal. | | | |
| 1.1.1 Certified Health Physicist, 10 days | 10 | 1,800.00 | $18,000 |
| 1.1.2 Site Decommissioning Manager, 5 days | 5 | 1,069.58 | $5,348 |
| 1.1.3 Clerical, 5 days | 5 | 356.53 | $1,783 |
| 1.2 Radiological characterization survey. | | | |
| 1.2.1 Certified Health Physicist, 10 days | 10 | 1,800.00 | $18,000 |
| 1.2.2 Site Decommissioning Manager, 46 days | 46 | 1,069.58 | $49,200 |
| 1.2.3 Health Physics Technicians, 3 for 46 days | 138 | 767.90 | $105,970 |
| 1.2.4 Health Physics Technician, 25 days (data management) | 25 | 767.90 | $19,198 |
| 1.2.5 Sample Analysis Technician | 25 | 767.90 | $19,198 |
| 1.2.6 Analysis of 20,000 wipe samples | 20000 | 0.48 | $9,654 |
| 2 Decontamination and/or Dismantling of Facility Components. | | | |
| 2.1 Radiological cleaning of minor surface contamination from small areas of benches, hoods, floors, shelving, etc. from general purpose labs. | | | |
| 2.1.1 Site Decommissioning Manager, 10 days | 10 | 1,069.58 | $10,696 |
| 2.1.3 Health Physics Technician, 30 person-days | 30 | 767.90 | $23,037 |
| 2.2 Removal and preparation for disposal of approximately 350 linear feet of potentially contaminated exhaust ducts. Duct will be cut into pieces and will be flattened on site, but mechanical compaction or supercompaction is not anticipated. | | | |
| 2.2.1 Certified Health Physicist, 1 days | 2 | 1,800.00 | $3,600 |
| 2.1.1 Site Decommissioning Manager, 10 days | 15 | 1,069.58 | $16,044 |
| 2.2.3 Health Physics Technician, 20 person-days | 30 | 767.90 | $23,037 |
| 2.4 Dismantle and package 20 fume hoods for metal melting. | | | |
| 2.4.1 Certified Health Physicist, 1 days | 2 | 1,800.00 | $3,600 |
| 2.1.1 Site Decommissioning Manager, 5 days | 10 | 1,069.58 | $10,696 |
| 2.4.3 Health Physics Technician, 10 days | 20 | 767.90 | $15,358 |
| 2.5 Remove 80 m2 of floors of radiochemistry lab. | | | |
| 2.5.1 Certified Health Physicist, 1 days | 1 | 1,800.00 | $1,800 |
| 2.5.2 Site Decommissioning Manager, 5 days | 5 | 1,069.58 | $5,348 |
| 2.5.3 Health Physics Technician, 10 person-days | 10 | 767.90 | $7,679 |
| 3 Shipping and Disposal of Radioactive Wastes. | | | |
| 3.1 Radwaste contractor to provide containers for the radioactive waste, manifest it and ship it to a low level radioactive waste | | | |

| | | | |
|---|---|---|---|
| disposal site or waste management facility. Waste includes material decontaminated and contaminated cleaning supplies. | | | |
| 3.1.1 General purpose lab cleaning, 2000 lbs | 2000 | 7.25 | $14,500 |
| 3.1.3 Ductwork metal melting, 350 feet, 6.5 lbs/foot, 2275 lbs | 2275 | 7.25 | $16,494 |
| 3.1.4 Hood metal melt, 20 hoods, 500 lbs/hood | 10000 | 7.25 | $72,500 |
| 3.1.5 Disposal of flooring, 80 m2 x 0.0025 m x3 = 0.6 m3 = 2660 lbs | 2660 | 7.25 | $19,285 |
| 4 Restoration of Contaminated Areas on Facility Grounds. | | | |
| None anticipated. | | | $0 |
| 5 Final Radiation Survey. | | | |
| 5.1 Certified Health Physicist, 4 days | 4 | 1,800.00 | $7,200 |
| 5.2 Site Decommissioning Manager, 5 days | 5 | 1,069.58 | $5,348 |
| 5.3 Health Physics Technician, 10 days | 10 | 767.90 | $7,679 |
| 5.4 Analysis of 1000 wipe samples | 1000 | 0.48 | $483 |
| 6 Site Stabilization, Long-Term Surveillance (if applicable). | | | |
| None anticipated. | | | $0 |
| Sub Total | | | $510,732 |
| 7 Contingency, 25% | na | na | $127,683 |
| **Total Site Cost:** | | | **$638,415** |

**Summit Site**

In July 2000 Schering Plough announced that it has signed a definitive agreement with Novartis Pharmaceuticals Corporation to purchase Novartis' research and office facility located in Summit, N.J. The research and development, laboratory and office complex totals approximately 2 million square feet located on an 88-acre campus at the intersection of Morris Avenue and River Road in Summit. The site has been occupied for R&D, laboratory and pharmaceutical manufacturing uses since 1937, most recently by Novartis since the 1997 merger between Ciba-Geigy Corporation and Sandoz Corporation, and by Ciba-Geigy prior to that. Schering-Plough purchased the Summit site from Novartis Pharmaceuticals Corporation in November 2000, with Novartis vacating the site as of April 2003.

Schering added the summit site to its NRC license in September 2003. Although some Schering non-radioactive research activities have been moved to the Summit site, no radioactivity has been received, stored or used there by Schering as of February 2005.

In the future it is anticipated that about 10 labs will be authorized to use radioactivity at the Summit site, including one radioactive waste storage area. There is no radiochemistry activity planned for the site. The 10 labs are anticipated to use less than 10 mCi per year of radionuclides with half-lives greater than 120 days.

With such modest usage of radioactivity, and considering prior experience at Schering, no required decontamination is anticipated for the Summit site.

Table 4
Decommissioning Cost Analysis -Summit Site

| Schering Corporation, Summit Site<br>556 Morris Avenue, Summit, NJ | Units | Unit Rate ($/unit) | Cost Feb-05 ($) |
|---|---|---|---|
| 1 Planning and Preparation. | | | |
| 1.1 Preparation of documentation for regulatory agencies, including decommissioning plan when required by 10 CFR 30.36(c)(2), and development of work plans. This also includes time to categorize radioactive waste as to its chemical and radiological characteristics and determine proper methods of disposal. | | | |
| 1.1.1 Certified Health Physicist, days | 1 | $1,800.00 | $1,800 |
| 1.1.2 Site Decommissioning Manager, days | 1 | $1,069.58 | $1,070 |
| 1.1.3 Clerical, days | 1 | $356.53 | $357 |
| 1.2 Radiological characterization survey. | | | |
| 1.2.1 Certified Health Physicist, days | 1 | $1,800.00 | $1,800 |
| 1.2.2 Site Decommissioning Manager, days | 3 | $1,069.58 | $3,209 |
| 1.2.3 Health Physics Technicians, days | 6 | $767.90 | $4,607 |
| 1.2.4 Health Physics Technician, days (data management) | 3 | $767.90 | $2,304 |
| 1.2.5 Sample Analysis Technician | 3 | $767.90 | $2,304 |
| 1.2.6 Analysis of wipe samples | 1000 | $0.48 | $483 |
| 2 *Decontamination and/or Dismantling of Facility Components.*<br>None anticipated. | na | | $0 |
| 3 Shipping and Disposal of Radioactive Wastes.<br>None anticipated. | na | | $0 |
| 4 Restoration of Contaminated Areas on Facility Grounds.<br>None anticipated. | na | | $0 |
| 5 Final Radiation Survey.<br>Use Characterization Survey as Final Survey | na | | $0 |
| 6 Site Stabilization, Long-Term Surveillance (if applicable).<br>None anticipated. | na | | $0 |
| Sub Total | | | $17,932 |
| 7 Contingency, 25% | na | na | $4,483 |
| **Total Site Cost:** | | | **$22,415** |

**Lafayette Site**

The Lafayette, NJ site has 17 rooms where byproduct materials are currently (2005) stored and/or used. In addition, approximately 10 lab rooms were decommissioned by the licensee during normal operations. Recent contamination survey data indicate that routine contamination levels are maintained well below 500 dpm/100 $cm^2$. Therefore, it is anticipated that a site characterization survey would be done which will become the final decommissioning survey.

A single small hood in Building 6 is used for dose preparation with C-14 or H-3. Although future contamination levels will be determined by actual surveys, for planning purposes this hood is assumed to be contaminated at levels requiring remediation. Costs for decommissioning and disposal of this hood are included. No other decontamination is anticipated.

The following cost estimating evaluation covers all storage and use areas for NRC licensed materials at the Lafayette site.

Table 5
Decommissioning Cost Analysis - Lafayette Site

| Schering Corporation, Lafayette Site | Units | Unit | Cost |
|---|---|---|---|
| Route 94, Lafayette, NJ | | Rate | Feb-05 |
| | | ($/unit) | ($) |
| 1 Planning and Preparation. | | | |
| | | | |
| 1.1 Preparation of documentation for regulatory agencies, | | | |
| including decommissioning plan when required by 10 CFR | | | |
| 30.36(c)(2), and development of work plans. This also includes | | | |
| time to categorize radioactive waste as to its chemical and | | | |
| radiological characteristics and determine proper methods of | | | |
| disposal. | | | |
| 1.1.1 Certified Health Physicist, days | 1 | $1,800.00 | $1,800 |
| 1.1.2 Site Decommissioning Manager, days | 1 | $1,069.58 | $1,070 |
| 1.1.3 Clerical, days | 3 | $356.53 | $1,070 |
| 1.2 Radiological characterization survey. | | | |
| 1.2.1 Certified Health Physicist, days | 1 | $1,800.00 | $1,800 |
| 1.2.2 Site Decommissioning Manager, days | 3 | $1,069.58 | $3,209 |
| 1.2.3 Health Physics Technicians, days | 10 | $767.90 | $7,679 |
| 1.2.4 Health Physics Technician, days (data management) | 3 | $767.90 | $2,304 |
| 1.2.5 Analysis of wipe samples, # samples | 2000 | $0.48 | $965 |
| 2 Decontamination and/or Dismantling of Facility Components. | | | |
| 2.1 Dismantle one dose prep hood. | | | |
| 2.1.1 Site Decommissioning Manager, 2 days | 2 | $1,069.58 | $2,139 |
| 2.4.3 Health Physics Technician, 4 days | 4 | $767.90 | $3,072 |
| 3 Shipping and Disposal of Radioactive Wastes. | | | |
| 3.1 Hood metal melt, 1 hood, 500 lbs/hood | 500 | $7.25 | $3,625 |
| 4 Restoration of Contaminated Areas on Facility Grounds. | | | |
| None anticipated. | | | $0 |
| 5 Final Radiation Survey. | | | |
| None anticipated. | | | $0 |
| 6 Site Stabilization, Long-Term Surveillance (if applicable). | | | |
| None anticipated. | | | $0 |
| Sub Total | | | $28,732 |
| 7 Contingency, 25% | na | na | $7,183 |
| **Total Site Cost:** | | | **$35,915** |

**Bloomfield Site**

The Bloomfield site, consisting of only Building 33, is currently used only for storage and management of containers of radioactive waste in a single indoor dedicated location. In the past, about 5 labs had used radioactive material in Building 33, but the labs have been decommissioned by the licensee in its normal operations. All lab furniture and equipment and even walls have been removed. The remaining floor area where the labs used to be could be surveyed as part of the final decommissioning survey.

Routine contamination surveys show little or no radioactive contamination. No decontamination is anticipated.

Table 6
Decommissioning Cost Analysis - Bloomfield Site

| Schering Corporation, Bloomfield Site | Units | Unit | Cost |
|---|---|---|---|
| 104 Orange Street (Building 33), Bloomfield, NJ | | Rate | Feb-05 |
| 1 Planning and Preparation. | | ($/unit) | ($) |
| 1.1 Preparation of documentation for regulatory agencies, | | | |
| including decommissioning plan when required by 10 CFR | | | |
| 30.36(c)(2), and development of work plans. This also includes | | | |
| time to categorize radioactive waste as to its chemical and | | | |
| radiological characteristics and determine proper methods of | | | |
| disposal. | | | |
| 1.1.1 Certified Health Physicist, days | 1 | $1,800.00 | $1,800 |
| 1.1.2 Site Decommissioning Manager, days | 1 | $1,069.58 | $1,070 |
| 1.1.3 Clerical, days | 1 | $356.53 | $357 |
| 1.2 Radiological characterization survey. | | | |
| 1.2.1 Certified Health Physicist, days | 0 | $1,800.00 | $0 |
| 1.2.2 Site Decommissioning Manager, days | 2 | $1,069.58 | $2,139 |
| 1.2.3 Health Physics Technicians, days | 5 | $767.90 | $3,840 |
| 1.2.4 Health Physics Technician, days (data management) | 1 | $767.90 | $768 |
| 1.2.5 Analysis of wipe samples, # samples | 750 | $0.48 | $362 |
| | | | |
| 2 Decontamination and/or Dismantling of Facility Components. | | | |
| none anticipated. | | | $0 |
| 3 Shipping and Disposal of Radioactive Wastes. | | | |
| none anticipated. | | | $0 |
| 4 Restoration of Contaminated Areas on Facility Grounds. | | | |
| None anticipated. | | | $0 |
| 5 Final Radiation Survey. | | | |
| None anticipated. | | | $0 |
| 6 Site Stabilization, Long-Term Surveillance (if applicable). | | | |
| None anticipated. | | | $0 |
| Sub Total | | | $10,335 |
| 7 Contingency, 25% | na | na | $2,584 |
| **Total Site Cost:** | | | **$12,918** |

**Union Site**

The Union, NJ site has only 3 labs and one storage area where byproduct materials are or were used and/or stored. This total of four rooms includes rooms which were decommissioned by the licensee as part of normal operations. Recent contamination survey data reviewed above indicate that routine contamination levels are maintained below 500 dpm/100 $cm^2$. Therefore, only a limited site characterization survey which will become the final decommissioning survey is anticipated. No decontamination is anticipated.

The following cost estimating evaluation covers all storage and use areas for NRC licensed materials at the Union site.

Table 7
Decommissioning Cost Analysis - Union Site

| Schering Corporation, Union Site | Units | Unit | Cost |
|---|---|---|---|
| 1011 Morris Avenue, Union, NJ | | Rate | Feb-05 |
| 1 Planning and Preparation. | | ($/unit) | ($) |
| 1.1 Preparation of documentation for regulatory agencies, | | | |
| including decommissioning plan when required by 10 CFR | | | |
| 30.36(c)(2), and development of work plans. This also includes | | | |
| time to categorize radioactive waste as to its chemical and | | | |
| radiological characteristics and determine proper methods of | | | |
| disposal. | | | |
| 1.1.1 Certified Health Physicist, days | 1 | $1,800.00 | $1,800 |
| 1.1.2 Site Decommissioning Manager, days | 1 | $1,069.58 | $1,070 |
| 1.1.3 Clerical, days | 1 | $356.53 | $357 |
| 1.2 Radiological characterization survey. | | | |
| 1.2.1 Certified Health Physicist, days | 0 | $1,800.00 | $0 |
| 1.2.2 Site Decommissioning Manager, days | 2 | $1,069.58 | $2,139 |
| 1.2.3 Health Physics Technicians, days | 4 | $767.90 | $3,072 |
| 1.2.4 Health Physics Technician, days (data management) | 1 | $767.90 | $768 |
| 1.2.5 Analysis of wipe samples, # samples | 250 | $0.48 | $121 |
| 2 Decontamination and/or Dismantling of Facility Components. | | | |
| none anticipated. | | | $0 |
| 3 Shipping and Disposal of Radioactive Wastes. | | | |
| none anticipated. | | | $0 |
| 4 Restoration of Contaminated Areas on Facility Grounds. | | | |
| None anticipated. | | | $0 |
| 5 Final Radiation Survey. | | | |
| None anticipated. | | | $0 |
| 6 Site Stabilization, Long-Term Surveillance (if applicable). | | | |
| None anticipated. | | | $0 |
| Sub Total | | | $9,325 |
| 7 Contingency, 25% | na | na | $2,331 |
| **Total Site Cost:** | | | **$11,657** |

This is to acknowledge the receipt of your letter/application dated

3/31/2005, and to inform you that the initial processing which includes an administrative review has been performed.

Financial Assurance 29-00244-02

☒ There were no administrative omissions. Your application was assigned to a technical reviewer. Please note that the technical review may identify additional omissions or require additional information.

☐ Please provide to this office within 30 days of your receipt of this card

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A copy of your action has been forwarded to our License Fee & Accounts Receivable Branch, who will contact you separately if there is a fee issue involved.

Your action has been assigned **Mail Control Number** 136825.
When calling to inquire about this action, please refer to this control number.
You may call us on (610) 337-5398, or 337-5260.

NRC FORM 532 (RI)
(6-96)

Sincerely,
Licensing Assistance Team Leader

BETWEEN:

License Fee Management Branch, ARM
and
Regional Licensing Sections

(FOR LFMS USE)
INFORMATION FROM LTS

Program Code: 03610
Status Code: 0
Fee Category: 3L 3E
Exp. Date: 20090430
Fee Comments: _____
Decom Fin Assur Reqd: Y

LICENSE FEE TRANSMITTAL

A. REGION I

1. APPLICATION ATTACHED
   Applicant/Licensee: SCHERING CORPORATION
   Received Date: 20050405
   Docket No: 3005230
   Control No.: 136825
   License No.: 29-00244-02
   Action Type: Fin. Assurance

2. FEE ATTACHED
   Amount: /
   Check No.: _____

3. COMMENTS

Signed Rebecca Jurnd
Date 4/15/2005

B. LICENSE FEE MANAGEMENT BRANCH (Check when milestone 03 is entered /__/)

1. Fee Category and Amount: _____

2. Correct Fee Paid. Application may be processed for:
   Amendment _____
   Renewal _____
   License _____

3. OTHER _____
   _____

Signed _____
Date _____