



Boehringer Ingelheim  
Pharmaceuticals Inc.

P-7

January 9, 2008

Mr. Thomas Thompson  
U.S. Nuclear Regulatory Commission, Region I  
475 Allendale Road  
King of Prussia, PA 19406-1415

03017101

U.S. NRC Materials License No. 06-19183-01

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Re: Decommissioning Funding Plan

900 Ridgebury Rd/P.O. Box 368  
Ridgefield, CT 06877-0368  
Telephone (203) 798-9988

Dear Mr. Thompson:

In response to your email of October 25, 2007 and with reference to 10 CFR 30.35 a Decommissioning Funding Plan (DFP) was developed for Boehringer Ingelheim Pharmaceuticals, Inc. Based on the analysis a total of \$461,727.14 (which includes 25% contingency) would be required for decommissioning our facility. In view of the fact that our current Certification of Financial Assurance and Letter of Credit for \$1,125,000 far exceeds the amount necessary to decommission our facility and, per NUREG 1757, Vol. 3, Appendix A.3.2 "In general, cost estimates should be updated with the current prices of goods and services at least every 5 years or when the amounts or types of material at the facility change", we will plan to update our DFP again in five (5) years unless required earlier by the regulations.

A copy of the analysis is attached. Please don't hesitate to contact me if you have any questions.

Yours sincerely,

Karl D. Hargrave, Ph.D.  
Chairman, Radiation Safety Committee

cc: William Galdenzi, Radiation Safety Officer

Attachment: Decommissioning Funding Plan

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### A.3.18 Total Decommissioning Costs

Enter the total costs reported in Tables A.3.13, A.3.13(a)-(c), A.3.15, A.3.16, and A.3.17 into the appropriate cells below, then add them to obtain a subtotal. Add to the subtotal a contingency allowance in the amount of 25 percent of the subtotal to obtain the total decommissioning cost estimate. Also, calculate for each task/component the percentage it represents of the subtotal.

Task/Component	Cost	Percentage
Planning and Preparation (From Table A.3.13)	\$ 130,556.21	35%
Decontamination and/or Dismantling of Radioactive Facility Components (From Table A.3.13)	\$ 43,403.02	12%
Restoration of Contaminated Areas on Facility Grounds (From Table A.3.13)	\$ -	0%
Final Radiation Survey (From Table A.3.13)	\$ 6,432.89	2%
Site Stabilization and Long-Term Surveillance (From Table A.3.13)	\$ -	0%
Packing Material Costs (TOTAL from Table A.3.14(a))	\$ 7,000.00	2%
Shipping Costs (TOTAL from Table A.3.14(b))	\$ -	0%
Waste Disposal Costs (TOTAL from Table A.3.14(c))	\$ 102,133.80	28%
Equipment/Supply Costs (TOTAL from Table A.3.15)	\$ 17,900.00	5%
Laboratory Costs (TOTAL from Table A.3.16)	\$ 9,495.00	3%
Miscellaneous Costs (TOTAL from Table A.3.17)	\$ 52,460.80	14%
Subtotal	\$ 369,381.71	100%
25% Contingency	\$ 92,345.43	
<b>TOTAL DECOMMISSIONING COST ESTIMATE</b>	<b>\$ 461,727.14</b>	

**Table A.3.5 Number and Dimensions of Facility Components**

Use this table to summarize relevant features of the facility. Copy and complete the table as necessary for each room, laboratory, or area. Rooms, laboratories, or areas with similar levels of contamination may be consolidated in one table.

Room/Location

**Summary of all Laboratories**

Component	Number of Components	Dimensions of Each Component (ft <sup>2</sup> ) <sup>a</sup>	Total Dimensions (ft <sup>2</sup> ) for scanning purposes <sup>b</sup>	Total Dimensions (ft <sup>3</sup> ) for waste management purposes
Glove Boxes	1	15.00	264.00	90.00
Fume Hoods*	36	417.25	11,049.00	4,220.00
Lab Benches**	159	3,756.25	11,268.75	11,268.75
Sinks***	53	154.25	214.25	642.75
Drains	0	0.00	0.00	0.00
Floors****	38	19,895.50	15,048.75	0.00
Walls†	38	24,234.00	24,234.00	0.00
Ceilings††	1	897.00	897.00	0.00
Ventilation/Ductwork ‡	21	1,216.00	672.00	672.00
Hot Cells	0	0.00	0.00	0.00
Incubators <sup>1</sup>	21		1,619.00	378.38
Refrigerators <sup>1</sup>	55		7,143.00	1,882.00
Freezers <sup>1</sup>	30		5,205.00	1,806.25
Storage Units/Cabinets <sup>1</sup>	48		7,439.00	1,884.25
Radwaste Areas	4		89.00	0.00
Biosafety Cabinets <sup>1,†</sup>	8		1,858.00	618.00
Desks <sup>1</sup>	148		13,814.00	3,027.50
Other Equipment <sup>1</sup> (specify)	13		2,873.72	2,309.72
<b>Totals</b>			<b>103,688.47</b>	<b>28,799.60</b>
<b>Contaminated Area/Volume, Estimate<sup>2</sup></b>			<b>10,368.85</b>	<b>2,879.96</b>

### A.3.6 Planning and Preparation (work days)

Estimate the number of work days, by specific labor category, that will be required to complete planning and preparation activities. Include all appropriate labor categories, including Supervisor, Foreman, Craftsman, Technician, Health Physicist, Laborer, Clerical, and others as needed.

Activity	Supervisor	Health Physicist	Health Physics Technician (2)	Clerical
Preparation of Documentation for Regulatory Agencies	5	2	0	1
Submittal of Decommissioning Plan to NRC when required by 10 CFR 30.36(g)(1)	15	5	0	1
Development of Work Plans	20	0	0	1
Procurement of Special Equipment	0	3	2	2
Staff Training	5	3	10	1
Characterization of Radiological Condition of the Fixed Components of the Facility	8	8	16	2
Characterization of Radiological Condition of the Equipment and other Large Components of the Facility	10	20	40	3
<b>Totals</b>	<b>63</b>	<b>41</b>	<b>68</b>	<b>11</b>

**Table A.3.7 Decontamination or Dismantling of Radioactive Facility Components (Work Days)**

Estimate the number of workdays, by specific labor category, that will be required to complete decontamination and/or dismantling activities for each facility component. Copy and complete this table as necessary for each room, laboratory, or area. Rooms, laboratories, or areas with similar levels of contamination may be consolidated into one table. Assumes 10% of units require decontamination, supervisor spends approximately 0.1 day per contaminated unit in supervisory capacity, one health physicist and two health physics technicians are involved in decontamination, demolition, and packaging of contaminated units.

Name of room, laboratory, or area

All labs

Level of Contamination

Low levels expected, 25% disassembly and packaging, 75% decontaminate

Component	Number of units	Decon Method	Days/Unit	Supervisor	Health Physicist	Health Physics Technician (2)	Clerical
Glove Boxes	1	Dis+Pack/Wash clean	0.33	0.00	0.03	0.07	0.00
Fume Hoods	36	Dis+Pack/Wash clean	0.75	0.27	2.70	5.40	0.00
Lab Benches	154	Dis+Pack/Wash clean	0.33	0.51	5.08	10.16	0.00
Sinks	53	Dis+Pack/Wash clean	0.33	0.17	1.75	3.50	0.00
Drains	0	Dis+Pack/Wash clean	0.50	0.00	0.00	0.00	0.00
Floors	37	Dis+Pack/Wash clean	1.00	0.37	3.70	7.40	0.00
Walls	37	Dis+Pack/Wash clean	1.00	0.37	3.70	7.40	0.00
Ceilings	1	Dis+Pack/Wash clean	0.33	0.00	0.03	0.07	0.00
Ventilation/Ductwork	21	Dis+Pack/Wash clean	0.33	0.07	0.69	1.39	0.00
Hot Cells	0	Dis+Pack/Wash clean	0.50	0.00	0.00	0.00	0.00
Incubators	20	Dis+Pack/Wash clean	0.33	0.07	0.66	1.32	0.00
Refrigerators	54	Dis+Pack/Wash clean	0.33	0.18	1.78	3.56	0.00
Freezers	29	Dis+Pack/Wash clean	0.33	0.10	0.96	1.91	0.00
Storage Units/Cabinets	48	Dis+Pack/Wash clean	0.33	0.16	1.58	3.17	0.00
Radwaste Areas	4	Dis+Pack/Wash clean	2.00	0.08	0.80	1.60	0.00
Biosafety Cabinets	8	Dis+Pack/Wash clean	0.75	0.06	0.60	1.20	0.00
Desks	52	Dis+Pack/Wash clean	0.33	0.17	1.72	3.43	0.00
Other Equipment (specify)	13	Dis+Pack/Wash clean	0.75	0.10	0.98	1.95	0.00
<b>TOTALS</b>				2.68	26.76	53.53	0.00

### A.3.8 Restoration of Contaminated Areas on Facility Grounds (work days)

Estimate the number of work days, by specific labor category, that will be required to restore contaminated areas on facility grounds.

**No restoration of grounds expected as a result of decontamination of Boehringer-Ingelheim facilities.**

Activity	Supervisor	Health Physicist	Health Physics Technician	Clerical	Labor Category	Labor Category
Backfill and Restore Site						
Totals	0.00	0.00	0.00	0.00	0.00	0.00

### A.3.9 Final Radiation Survey (Work Days)

Estimate the number of work days, by specific labor category, that will be required to conduct a final radiation survey. Assumes 10% of facility and equipment requires re-survey after decontamination and/or demolition after initial radiological characterization.

Activity	Supervisor	Health Physicist	Health Physics Technician (2)	Clerical
Resurvey laboratory facilities after decontamination	0.80	0.80	1.60	0.20
Resurvey equipment after decontamination	1.00	2.00	4.00	0.30
Totals	1.80	2.80	5.60	0.50

### A.3.10 Site Stabilization and Long-term Surveillance (Work Days)

Estimate the number of work days, by specific labor category, that will be required to complete site stabilization and long-term surveillance.

**No site stabilization or long-term surveillance of the facility is expected as a result of contamination of Boehringer-Ingelheim facilities.**

Activity	Supervisor	Health Physicist	Health Physics Technician	Clerical
Totals	0.00	0.00	0.00	0.00



### A.3.11 Total Work Days by Labor Category

Enter the total work days estimated for each specific labor category from the applicable table above (i.e., from the bottom rows of Tables A.3.6 through A.3.10)

Activity	Supervisor	Health Physicist	Health Physics Technician	Clerical
Planning and Preparation (TOTALS from Table A.3.6)	63.00	41.00	68.00	11.00
Decontamination and/or Dismantling of Radioactive Facility Components (Sum of TOTALS from all copies of Table A.3.7)	2.68	26.76	53.53	0.00
Restoration of Contaminated Areas on Facility Grounds (TOTALS from Table A.3.8)	0.00	0.00	0.00	0.00
Final Radiation Survey (TOTALS from Table A.3.9)	1.80	2.80	5.60	0.50
Site Stabilization and Long-Term Surveillance (TOTALS from Table A.3.10)	0.00	0.00	0.00	0.00
Totals	67.48	70.56	127.13	11.50

### A.3.12 Worker Unit Cost Schedule

Estimate labor costs (including salary, fringe benefits, and corporate overhead). Include all appropriate labor categories, including Supervisor, Foreman, Craftsman, Technician, Health Physicist, Laborer, Clerical, and others as needed.

Labor Cost Component	Supervisor	Health Physicist	Health Physics Technician	Clerical
Salary (\$/hr)	\$ 61.44	\$ 31.61	\$ 25.00	\$ 18.00
Fringe (%)	36%	36%	36%	36%
Salary & Fringe (\$/hr)	\$ 22.24	\$ 11.44	\$ 9.05	\$ 6.52
Overhead Rate (%)	51.3%	51.3%	51.3%	51.3%
Overhead (\$/hr)	\$ 31.52	\$ 16.22	\$ 12.83	\$ 9.23
Salary+Fringe+Overhead (\$/hr)	\$ 115.20	\$ 59.27	\$ 46.88	\$ 33.75
G&A Rate (%)	12%	12%	12%	12%
G&A (\$/hr)	\$ 13.82	\$ 7.11	\$ 5.63	\$ 4.05
Salary+Fringe+Overhead+G&A (\$/hr)	\$ 129.02	\$ 66.38	\$ 52.50	\$ 37.80
Fee (10%)	\$ 12.90	\$ 6.64	\$ 5.25	\$ 3.78
Total Cost Per Hour	\$ 141.93	\$ 73.02	\$ 57.75	\$ 41.58
Total Cost Per Work Day	\$ 1,135.41	\$ 584.15	\$ 462.00	\$ 332.64

### A.3.13 Total Labor Costs by Major Decommissioning Task

Multiply the estimated work days of each specific labor category (from Table A.3.11) by the total cost per work day for the corresponding labor category (from Table A.3.12), and enter the results in the table below. Then, add across all labor categories to determine the total labor costs for each major decommissioning task.

Activity	Supervisor	Health Physicist	Health Physics Technician	Clerical	Totals
Planning and Preparation (TOTALS from Table A.3.6)	\$ 71,530.91	\$ 23,950.26	\$ 31,416.00	\$ 3,659.04	\$ 130,556.21
Decontamination and/or Dismantling of Radioactive Facility Components (Sum of TOTALS from all copies of Table A.3.7)	\$ 3,038.81	\$ 15,634.27	\$ 24,729.94	\$ -	\$ 43,403.02
Restoration of Contaminated Areas on Facility Grounds (TOTALS from Table A.3.8)	\$ -	\$ -	\$ -	\$ -	\$ -
Final Radiation Survey (TOTALS from Table A.3.9)	\$ 2,043.74	\$ 1,635.63	\$ 2,587.20	\$ 166.32	\$ 6,432.89
Site Stabilization and Long-Term Surveillance (TOTALS from Table A.3.10)	\$ -	\$ -	\$ -	\$ -	\$ -

### A.3.14 Packaging, Shipping, and Disposal of Radioactive Wastes (Excluding Labor Costs)

#### (a) Packing Material Costs (Use and Delivery charges)

Estimate the types and volumes of waste to be generated, along with the number and types of containers required for packaging the waste. Multiply the number of containers required by the unit cost per container. Assumes 25% of contaminated equipment, floor and wall surfaces (see table A.3.5-Lab Summary) cannot be decontaminated and requires disposal of equipment and removal and disposal of floor and wall surfaces to a depth of 1 cm (0.03 ft). Assumes remaining 75% of equipment and floor/wall surfaces are successfully decontaminated.

Waste Type	Volume (ft <sup>3</sup> )	Number of Containers	Type of Container	Unit Cost of Container	Total Packaging Costs
Contaminated Equipment/Benches/Sinks	719.99	0.5	20' Sea-Land container (1360 ft <sup>3</sup> )	\$ 7,000.00	\$ 3,500.00
Contaminated floor/wall surfaces	301.35	0.5	20' Sea-Land container (1360 ft <sup>3</sup> )	\$ 7,000.00	\$ 3,500.00
				\$ -	
<b>TOTAL</b>			-	-	\$ 7,000.00

#### (b) Shipping Costs (See (a) above)

Estimate the number of truckloads of waste to be shipped. Multiply shipping costs per mile (including truckload costs, surcharges and overweight charges) by the total distance shipped.

Waste Type	Number of truckloads	Unit Cost (\$/mile/truck-load)	Surcharges (\$/mile)	Overweight Charges (\$/mile)	Distance Shipped	Total Shipping Costs
Contaminated Equipment/Benches/Sinks						
Contaminated floor/wall surfaces						
<b>TOTAL</b>		-	-	-	-	

#### (c) Waste Disposal Costs

Estimate the volume of waste to be disposed. Multiply the volume of waste disposed by the unit disposal cost (including any volume based surcharges). Add any surcharges that are based on the number of containers of waste. Assumes density of 10 lb/ft<sup>3</sup>.

Waste Type	Disposal Volume (ft <sup>3</sup> )	Unit Cost (\$/lb)	Surcharges (\$/ft <sup>3</sup> or \$/container)	Total Disposal Costs
Contaminated Equipment/Benches/Sinks	719.99	\$ 10.00		\$ 71,998.99
Contaminated floor/wall surfaces	301.35	\$ 10.00		\$ 30,134.81
<b>TOTAL</b>		-	-	\$ 102,133.80

### A.3.15 Equipment/Supply Costs (Excluding Containers)

Estimate the quantity of equipment and supplies required for decommissioning and multiply that quantity by the appropriate unit costs.

Equipment/Supplies	Quantity	Unit	Unit Cost	Total Equipment/Supply Cost
Mobilization	1	each	\$ 2,000.00	\$ 2,000.00
Supplies* for laboratory/equipment surveys	1	each	\$ 4,000.00	\$ 4,000.00
Detectors**	28	day	\$ 250.00	\$ 7,000.00
P-10 gas for detectors	2	each tank	\$ 200.00	\$ 400.00
Van/truck rental, gas, tolls	28	day	\$ 125.00	\$ 3,500.00
Supplies† for waste management activities	4	day	\$ 250.00	\$ 1,000.00
<b>TOTAL</b>	-		-	<b>\$ 17,900.00</b>

\* - Supplies includes the following: Tape measures, pens, labels, forms, sample media and envelopes, cleaning materials, waste bags, sample preparation and analysis materials, etc.

\*\* Ludlum model 239-1F floor monitor with scaler/ratemeter 2224; Ludlum model 43-68 GP detectors with scaler/ratemeter 2224.

†- Equipment and supplies for waste management (tools, protective clothing, duct tape, poly sheeting, power equipment, pallet jack, cart, screw guns, etc.).

### A.3.16 Laboratory Costs

If applicable, estimate costs for analyses to be performed by an independent third-party laboratory.

Activity	Number of Units	Unit	Unit Cost	Total Cost
Swipe sample analysis	3,000	sample	\$ 2.50	\$ 7,500.00
Transport of Samples	28	package	\$ 5.00	\$ 140.00
Sink water sample analysis	53	sample	\$ 35.00	\$ 1,855.00
Other (specify)				\$ -
<b>TOTAL</b>	-		-	\$ 9,495.00

### A.3.17 Miscellaneous Costs

Estimate any other applicable costs.

Cost Item	Number of Units	Unit Cost (per day)	Total Cost
JL Shepherd irradiator - return/disposal, entire cost for removal, packaging, shipping, and disposal if necessary	1	n/a	\$ 25,000.00
Per diem (lodging)	120	\$ 118.00	\$ 14,160.00
Per diem (meals)	120	\$ 64.00	\$ 7,680.00
Sub-total	-	-	\$ 46,840.00
G&A for above items (12%)			\$ 5,620.80
<b>TOTAL</b>	-	-	\$ 52,460.80