



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION I
475 ALLENDALE ROAD
KING OF PRUSSIA, PENNSYLVANIA 19406-1415

MAY - 4 1994

License No: 20-00320-21
Docket No: 030-28902
Control No: 113360

E.I. duPont de Nemours & Company, Inc.
ATTN: Michael Jackson
Operations Manager
Medical Products/Imaging Systems
NEN Products
549 Albany Street
Boston, Massachusetts 02118

Dear Mr. Jackson:

Subject: Financial Assurance for Decommissioning

This is in reference to your various submittals dated July 30, 1990, September 19, 1990, and Standby Trust Agreement received April 8, 1994 to provide financial assurance for License No. 20-00320 21. We have reviewed these documents and have no further questions at this time.

Based on the information provided in the above referenced documents, you are presently in compliance with the financial assurance requirements outlined in the decommissioning rule in 10 CFR 30.35.

Please note that a decommissioning funding plan, including an actual cost estimate must be submitted along with any application for license renewal.

If you have any questions, please contact Anthony Dimitriadis, of my staff, at (610) 337-6953.

Your cooperation with us is appreciated.

Sincerely,

A handwritten signature in black ink, appearing to read "M. Shanbaky".

Mohamed M. Shanbaky, Chief
Research and Development Section
Division of Radiation Safety
and Safeguards

cc:

E.I. Du Pont de Nemours & Company

ATTN: Leonard R. Smith
Radiation Safety Officer

Medical Products

Safety and Environmental Affairs

549 Albany Street

Boston, Massachusetts 02118

VOID SHEET

03028902

Aug 13
113067

TO: License Fee Management Branch
FROM: RI
SUBJECT: VOIDED APPLICATION

Control Number: 113067

Applicant: E.I. du Pont de Nemours & Co., Inc.

Date Voided: 9-19-90

Reason for Void: Action was controlled under license number
20-00320-19 and it should have been the 20-00320-21
license. Am recontrolling under mail control
113360.

Rebecca J. Brown 9/19/90
Signature Date

Attachment:
Official Record Copy of
Voided Action

FOR LFMB USE ONLY

Final Review of VOID Completed:
Refund Authorized and processed
No Refund Due
Fee Exempt or Fee Not Required

Comments: _____

Log completed
Processed by: Rinda Mitchell
5-17-94

180099

OFFICIAL RECORD COPY ML18

NOTE TO DMB:

THE ATTACHED DOCUMENTS ARE TO BE PROCESSED AS ONE FINANCIAL ASSURANCE FOR DECOMMISSIONING PACKAGE.

LICENSE NUMBER: 20-00320-21

DOCKET NUMBER: 030-28902

CONTROL NUMBER: 113360

THIS SHEET MAY BE DISCARDED AFTER PROCESSING.

THANK YOU!

MAY - 4 1994

License No: 20-00320-21
Docket No: 030-28902
Control No: 113360

E.I. duPont de Nemours & Company, Inc.
ATTN: Michael Jackson
Operations Manager
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Please note that a decommissioning funding plan, including an actual cost estimate must be submitted along with any application for license renewal.

If you have any questions, please contact Anthony Dimitriadis, of my staff, at (610) 337-6953.

Your cooperation with us is appreciated.

Sincerely,

Original Signed By:
Mohamed M. Shanbaky

Mohamed M. Shanbaky, Chief
Research and Development Section
Division of Radiation Safety
and Safeguards

OFFICIAL RECORD COPY - C:\BACKUP.P1\DUPONT22.FA - 04/23/94

cc:

E.I. Du Pont de Nemours & Company

ATTN: Leonard R. Smith
Radiation Safety Officer

Medical Products

Safety and Environmental Affairs

549 Albany Street

Boston, Massachusetts 02118

bcc:

M. Shanbaky, RI

A. Dimitriadis, RI

DRSS:RI
Dimitriadis

04/23/94

DRSS:RI
Shanbaky

04/25/94

793777
ORIG
030-28902

STANDBY TRUST AGREEMENT

TRUST AGREEMENT, the Agreement entered into as of July 27, 1990 by and between E. I. du Pont de Nemours and Company ("Du Pont"), Greater Boston Area Site, herein referred to as the "Grantor," and Citibank, N.A., the "Trustee."

WHEREAS, the U.S. Nuclear Regulatory Commission (NRC), and agency of the U.S. Government, pursuant to the Atomic Energy Act of 1954, as amended, and the Energy Reorganization Act of 1974, has promulgated regulations in Title 10, Chapter I of the Code of Federal Regulations, Part 30. These regulations, applicable to the Grantor, require that a holder of, or an applicant for, a Part 30, license provide assurance that funds will be available when needed for required decommissioning activities.

WHEREAS, the Grantor has elected to use a Standby Letter of Credit to provide all of such financial assurance for the facilities identified herein; and

WHEREAS, when payment is made under a Standby Letter of Credit, this standby trust shall be used for the receipt of such payment; and

WHEREAS, the Grantor, acting through its duly authorized officers, has selected the Trustee to be the trustee under this Agreement, and the Trustee is willing to act as trustee,

NOW, THEREFORE, the Grantor and the Trustee agree as follows:

Section 1. Definitions. As used in this Agreement:

- (a) The term "Grantor" means the NRC licensee who enters into this Agreement and any successors or assigns of the Grantor.
- (b) The term "Trustee" means the trustee who enters into this Agreement and any successor Trustee.

Section 2. Cost of Decommissioning. This Agreement pertains to the costs of decommissioning the materials and activities identified in License Number 20-00320-21 issued pursuant to 10 CFR Part 30 as shown in Schedule A.

Section 3. Establishment of Fund. The Grantor and the Trustee hereby establish a standby trust fund (the Fund) for the benefit of the NRC. The Grantor and the Trustee intend that no third party have access to the Fund except as provided herein.

Section 4. Payments Constituting the Fund. Payments made to the Trustee for the Fund shall consist of cash, securities, or other liquid assets acceptable to the Trustee. The Fund is established initially as consisting of the property, which is acceptable to the Trustee, described in Schedule B attached hereto. Such property and any other property subsequently transferred

OFFICIAL RECORD COPY

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APR 8 1994

to the Trustee are referred to as the "Fund," together with all earnings and profits thereon, less any payments or distributions made by the Trustee pursuant to this Agreement. The Fund shall be held by the Trustee, IN TRUST, as hereinafter provided. The Trustee shall not be responsible nor shall it undertake any responsibility for the amount of, or adequacy of the Fund, nor any duty to collect from the Grantor, any payments necessary to discharge any liabilities of the Grantor established by the NRC.

Section 5. Payment for Required Activities Specified in the Plan.

The Trustee shall make payments from the Fund to the Grantor upon presentation to the Trustee of the following:

- a. A certificate duly executed by the Secretary of the Depositor attesting to the occurrence of the events, and in the form set forth in the attached Specimen Certificate, and
- b. A certificate attesting to the following conditions:
 - (1) that decommissioning is proceeding pursuant to an NRC-approved plan,
 - (2) that the funds withdrawn will be expended for activities undertaken pursuant to that Plan, and
 - (3) that the NRC has been given 30 days' prior notice of Du Pont's intent to withdraw funds from the escrow fund.

No withdrawal from the fund can exceed ten percent (10%) of the outstanding balance of the Fund or One Million Two Hundred Thousand Dollars (\$1,200,000), whichever is greater, unless NRC approval is attached.

In the event of the Grantor's default or inability to direct decommissioning activities, the Trustee shall make payments from the Fund as the NRC shall direct, in writing, to provide for the payment of the costs of required activities covered by this Agreement. The Trustee shall reimburse the Grantor or other persons as specified by the NRC from the Fund for expenditures for required activities in such amounts as the NRC shall direct in writing. In addition, the Trustee shall refund to the Grantor such amounts as the NRC specifies in writing. Upon refund, such funds shall no longer constitute part of the Fund as defined herein.

Section 6. Trust Management. The Trustee shall invest and reinvest the principal and income of the Fund and keep the Fund invested as a single fund, without distinction between principal and income, in accordance with general investment policies and guidelines which the Grantor may communicate in writing to the Trustee from time to time, subject, however, to the provisions of this section. In investing, reinvesting, exchanging, selling and managing the Fund, the Trustee shall discharge its duties with respect to the Fund solely in the interest of the beneficiary and with the care, skill, prudence, and diligence under the circumstances then prevailing which persons of

prudence, acting in a like capacity and familiar with such matters, would use in the conduct of an enterprise of a like character and with like aims; except that:

- (a) Securities or other obligations of the Grantor, or any other owner or operator of the facilities, or any of their affiliates as defined in the Investment Company Act of 1940, as amended (15 U.S.C. 80a-2(a)), shall not be acquired or held, unless they are securities or other obligations of the Federal or a State government;
- (b) The Trustee is authorized to invest the Fund in time or demand deposits of the Trustee, to the extent insured by an agency of the Federal government; and
- (c) For a reasonable time, not to exceed 60 days, the Trustee is authorized to hold uninvested cash, awaiting investment or distribution, without liability for the payment of interest thereon.

Section 7. Commingling and Investment. The Trustee is expressly authorized in its discretion:

- (a) To transfer from time to time any or all of the assets of the fund to any common, commingled, or collective trust fund created by the Trustee in which the Fund is eligible to participate, subject to all of the provisions thereof, to be commingled with the assets of other trusts participating therein; and
- (b) To purchase shares in any investment company registered under the Investment Company Act of 1940 (15 U.S.C. 80a-1 et seq.), including one that may be created, managed, underwritten, or to which investment advice is rendered, or the shares of which are sold by the Trustee. The Trustee may vote such shares in its discretion.

Section 8. Express Powers of Trustee. Without in any way limiting the powers and discretion conferred upon the Trustee by the other provisions of this Agreement or by law, the Trustee is expressly authorized and empowered:

- (a) To sell, exchange, convey, transfer, or otherwise dispose of any property held by it, by public or private sale, as necessary for prudent management of the Fund;
- (b) To make, execute, acknowledge, and deliver any and all documents of transfer and conveyance and any and all other instruments that may be necessary or appropriate to carry out the powers herein granted;
- (c) To register any securities held in the Fund in its own name, or in the name of a nominee, and to hold any security in bearer form or in book entry, or to combine certificates representing such securities with certificates of the same issue held by the Trustee in other fiduciary capacities, to reinvest interest payments and funds from matured and redeemed instruments, to file proper forms concerning securities held

in the Fund in a timely fashion with appropriate government agencies, or to deposit or arrange for the deposit of such securities in a qualified central depository even though, when so deposited, such securities may be merged and held in bulk in the name of the nominee or such depository with other securities deposited therein by another person, or to deposit or arrange for the deposit of any securities issued by the U.S. Government, or any agency or instrumentality thereof, with a Federal Reserve bank, but the books and records of the Trustee shall at all times show that all such securities are part of the Fund;

- (d) To deposit any cash in the Fund in interest-bearing accounts maintained or savings certificates issued by the Trustee, in its separate corporate capacity, or in any other banking institution affiliated with the Trustee, to the extent insured by an agency of the Federal government; and
- (e) To compromise or otherwise adjust all claims in favor of or against the Fund.

Section 9. Taxes and Expenses. All taxes of any kind that may be assessed or levied against or in respect of the Fund and all brokerage commissions incurred by the Fund shall be paid from the Fund. All other expenses incurred by the Trustee in connection with the administration of this Trust, including fees for legal services rendered to the Trustee, the compensation of the Trustee to the extent not paid directly by the Grantor, and all other proper charges and disbursements of the Trustee shall be paid from the Fund.

Section 10. Annual Valuation. After payment has been made into this standby trust fund, the Trustee shall annually, at least 30 days before the anniversary date of receipt of payment into the standby trust fund, furnish to the Grantor and to the NRC a statement confirming the value of the Trust. Any securities in the Fund shall be valued at market value as of no more than 60 days before the anniversary date of the establishment of the Fund. The failure of the Grantor to object in writing to the Trustee within 90 days after the statement has been furnished to the Grantor and the NRC shall constitute a conclusively binding assent by the Grantor, barring the grantor from asserting any claim or liability against the Trustee with respect to the matters disclosed in the statement.

Section 11. Advice of Counsel. The Trustee may from time to time consult with counsel with respect to any question arising as to the construction of this Agreement or any action to be taken hereunder. The Trustee shall be fully protected, to the extent permitted by law, in acting on the advice of counsel.

Section 12. Trustee Compensation. The Trustee shall be entitled to reasonable compensation for its services as agreed upon in writing with the Grantor. (See Schedule C.)

Section 13. Successor Trustee. Upon 90 days notice to the NRC, the Trustee may resign; upon 90 days notice to NRC and the Trustee, the Grantor may replace the Trustee; but such resignation or replacement shall not be effective until the Grantor has appointed a successor Trustee and this successor accepts the appointment. The successor Trustee shall have the same powers and duties as those conferred upon the Trustee hereunder. Upon the successor Trustee's acceptance of the appointment, the Trustee shall assign, transfer, and pay over to the successor Trustee the funds and properties then constituting the Fund. If for any reason the Grantor cannot or does not act in the event of the resignation of the Trustee, the Trustee may apply to a court of competent jurisdiction for the appointment of a successor Trustee or for instructions. The successor Trustee shall specify the date on which it assumes administration of the trust in a writing sent to the Grantor, the NRC and the present Trustee by certified mail 10 days before such change becomes effective. Any expenses incurred by the Trustee as a result of any of the acts contemplated by this section shall be paid as provided in Section 9.

Section 14. Instructions to the Trustee. All orders, requests, and instructions by the Grantor to the Trustee shall be in writing, signed by such persons as are signatories to this agreement or such other designees as the Grantor may designate in writing. The Trustee shall be fully protected in acting without inquiry in accordance with the grantor's orders, requests, and instructions. If the NRC issues orders, requests, or instructions to the Trustee these shall be in writing, signed by the NRC or their designees, and the Trustee shall act and shall be fully protected in acting in accordance with such orders, requests, and instructions. The Trustee shall have the right to assume, in the absence of written notice to the contrary, that no event constituting a change or a termination of the authority or any person to act on behalf of the Grantor, the NRC hereunder has occurred. The Trustee shall have no duty to act in the absence of such orders, requests, and instruction from the Grantor and/or the NRC, except as provided for herein.

Section 15. Amendment of Agreement. This Agreement may be amended by an instrument in writing executed by the Grantor, the Trustee and the NRC, or by the Trustee and the NRC, if the Grantor ceases to exist.

Section 16. Irrevocability and Termination. Subject to the right of the parties to amend this Agreement as provided in Section 15, this trust shall be irrevocable and shall continue until terminated at the written agreement of the Grantor, the Trustee, and the NRC or State agency, or by the Trustee and the NRC or State agency, if the Grantor ceases to exist. Upon termination of the trust, all remaining trust property, less final trust administration expenses, shall be delivered to the Grantor or its successor.

Section 17. Immunity and Indemnification. The Trustee shall not incur personal liability of any nature in connection with any act or omission, made in good faith, in the administration of this trust, or in carrying out any directions by the Grantor or the NRC issued in accordance with this Agreement. The Trustee shall be indemnified and saved harmless by the Grantor or from the trust fund, or both, from and against any personal liability to

which the Trustee may be subjected by reason of any act or conduct in its official capacity, including all expenses reasonably incurred in its defense in the event the Grantor fails to provide such defense.

Section 18. This Agreement shall be administered, construed, and enforced according to the laws of the State of New York.

Section 19. Interpretation and Severability. As used in this Agreement, words in the singular include the plural and words in the plural include the singular. The descriptive headings for each section of this Agreement shall not affect the interpretation or the legal efficacy of this Agreement. If any part of this agreement is invalid, it shall not affect the remaining provisions which will remain valid and enforceable.

IN WITNESS THEREOF the parties have caused this Agreement to be executed by the respective officers duly authorized and the incorporate seals to be hereunto affixed and attested as of the date first written above.

M. T. Sharples
M. T. Sharples
Vice President and Treasurer

ATTEST:

D. J. Hellmann
D. J. Hellmann
Assistant Secretary

B. R. Evancho
B. R. Evancho, Manager
Corporate Cash Management & Banking

Marcy P. Archuleta Laguarda
7/24/90 NOTARY

ATTEST:

Peter N. Glazik
Citibank, N.A.
PETER N. GLAZIK
Assistant Vice President

Mary LaGumina
[Title] Mary LaGumina
[Seal] Trust Officer

STATE OF NEW YORK)
) ss.
COUNTY OF KINGS)

The foregoing instrument was acknowledged before me this 27 day of JULY, 1990, by PETER M. GLAZIK as ASSISTANT VICE PRES. of Citibank, N.A., a national banking association.

WITNESS my hand and official seal.

My commission expires Jan. 31/1992.

Patricia C. Sampol
Notary Public

PATRICIA C. TAMPOL
Notary Public, State of New York
No. 24-01TA4659885
Qualified in Kings County
Certificate Filed in New York County
Term Expires Jan. 31, 1992

TRUST AGREEMENT SCHEDULE

SCHEDULE A

This Agreement demonstrated financial assurance for the following cost estimates for the following licensed activities:

<u>U.S. Nuclear Regulatory Commission License Number</u>	<u>Name and Address of Licensee</u>	<u>Address of Licensed Activity</u>	<u>Cost Estimates for Regulatory Assurances Demonstrated by This Agreement</u>
#20-00320-21	E. I. du Pont de Nemours & Company	Greater Boston Area Site Boston, Mass.	\$12,000,000.00

TRUST AGREEMENT SCHEDULE

SCHEDULE B

AMOUNT \$ 12,000,000.

AS EVIDENCED BY Standby L/C #

CERTIFICATE OF EVENTS

Citibank N.A. Trustee
Corporate Trust/Escrow Administration
120 Wall Street, 13th Floor

Attention: Trust Division

Gentlemen:

In accordance with the terms of the Agreement with you dated _____, I, _____, Manager, E. I. du Pont de Nemours and Company, hereby certify that the following events have occurred:

1. Du Pont is required to commence the decommissioning of its facility located at the Greater Boston Area Site (hereafter called the decommissioning).
2. The plans and procedures for the commencement and conduct of the decommissioning have been approved by the United States Nuclear Regulatory Commission, or its successor, on _____ (copy of approval attached).
3. The Board of Directors of E. I. du Pont de Nemours and Company has adopted the attached resolution authorizing the payment of funds, as necessary, from the Standby Trust.

E. I. du Pont de Nemours and Company

Manager

Date: _____

CERTIFICATE OF RESOLUTION

Instructions to the Grantor:

All orders, requests and instructions by the Grantor to the Trustee shall be in writing, signed by such persons authorized in accordance with the resolution entitled "Authority for Banking and Financial Matters" adopted by the Executive Committee of E. I. du Pont de Nemours and Company on July 29, 1988, as approved by the Finance Committee on August 24, 1988 and as amended on December 1, 1988 and "Delegation of Authority for Banking and Financial Matters" approved by the Vice President and Treasurer on September 27, 1988.

M 56

K-8

20-00320-21
20-28598-01

December 13, 1993

United States Nuclear Regulatory Commission
Region I
Attn.: Mohamed M. Shanbaky, Chief
Research And Development Section
Division of Radiation Safety and Safeguards
475 Allendale Road
King of Prussia, PA 19406-1415



Reference: Mail Control #113360 and #115812

Dear Dr. Shanbaky:

This is written in response to your request for additional information letter dated October 27, 1993 concerning our Financial Assurance for Decommissioning.

I can provide the information in the order in which your questions appear on your letter.

1. A Letter of Credit has been secured for the Materials License #20-28598-01 in the amount of \$9.6MM. This Letter of Credit was obtained from Citibank by our corporate Financial group in Wilmington Delaware. The actual Letter of Credit was sent on October 28, 1993 by courier to the NRC Region I office to the attention of Mr. Eric H. Reber.
2. With regards to the Standby Trust Agreement, Ann Anthony of our corporate Finance office spoke to Anthony Dimitriadis of NRC Region I and determined that it was appropriate to have the existing Trust Agreement amended to include both the DuPont Merck Billerica Site and the Glenolden Site. Thus attached for your information is a letter dated November 18, 1993 from the DuPont Merck Finance Department to Citibank requesting the existing Standby Trust Agreement be amended to include the new Letter of Credit. The amended Agreement will be forwarded to your office as soon as it is processed by Citibank.
3. As you know Materials License #20-00320-21 is assigned to the DuPont operations of Boston, Massachusetts. The Radiation Safety Officer, Leonard R. Smith, and the DuPont Finance representative Jacinta M. Thomas have been in contact with Mr. Dimitriadis. The DuPont Standby Trust Agreement for DuPont's license will be handled by a separate communication from the DuPont Radiation Safety Officer.
4. The DuPont Radiation Safety Officer will provide the necessary evidence of signatory authorization with their own separate communication to your office. However, for the DuPont Merck Standby Trust Agreement please be advised that the attached letter to Citibank also requests a letter of acknowledgment to certify the Trustee's signature and signing authority. This will be sent to your office along with the amended Standby Trust Agreement.
5. This is written confirmation that there is no credit for salvage value included in the decommissioning cost estimates. The contractor that prepared the Plan in 1990 made a speculative statement that was unrelated to the execution of the Decommissioning Funding Plan.

113360/115812



6. The DuPont Merck Billerica Site's Decommissioning Funding Plan will be reviewed in detail at the time of each license renewal. Prior to the actual submittal of the license renewal application, decommissioning cost estimates will be adjusted wherever appropriate and associated funding levels will be either increased or decreased based on the review of the Plan. As recommended in Regulatory Guide 3.66 these adjustments will be made to account for inflation, for changes in goods and services, for changes in facility conditions and for changes in expected decommissioning procedures.

With established operations for the manufacturing of radiopharmaceuticals for medicine and radioisotopes for research, a review and modification as appropriate of the Decommissioning Funding Plan at each time of license renewal will ensure valid financial assurance for decommissioning over the life of our facilities.

7. The statement quoted from our Plan, "The cost analysis does not factor in contingencies", seems to have been taken out of context. The contractor made this statement without regard to NUREG/CR-1754 and appears to be generalizing about how any business normally handles a contract for major projects.

We agree that a contingency factor in the decommissioning cost estimate is necessary to prepare for unexpected circumstances that could raise decommissioning costs. When it was necessary to decide on the amount for the Letter of Credit we determined that the existing amount, \$9.6MM, for the Billerica Site was more than adequate to cover any decommissioning costs plus any unexpected costs up to the time of the renewal of our license, expiration date November 30, 1996. At that time we intend to, as committed in item #6 in this letter, to again review the Decommissioning Funding Plan in detail and increase or decrease the cost estimates as appropriate. For this year 1993, and into 1994, we estimate the decommissioning cost estimates for the Billerica site incorporate approximately 13% overage for unexpected costs. In 1996, during the next license renewal process, we will ensure the same overage in the cost estimate is maintained. The six reference laboratories in NUREG/CR-1754 do not apply to the operation of a manufacturing facility with a Type A Broad Scope license. With regards to radiological decommissioning, the only unexpected costs in this type of operation is primarily related to the volatile issue of radioactive waste disposal.

As you know the costs for radioactive disposal has increased significantly. In 1990 when the original Decommissioning Plan was compiled by our contractor the waste cost was approximately \$88 per cu. ft. for shipments to the repository in Richland, Washington. In 1993 we as an NRC licensee in Massachusetts only have access to the repository in Barnwell, South Carolina. In 1993 the waste cost is \$62 per cu. ft plus a surcharge of \$220 per cu. ft, for a total waste cost by volume shipped to the repository of \$282 per cu. ft. We just recently were informed that the waste charge for shipments to the Barnwell repository will be increased to \$74 per cu. ft. for a total of \$294 per cu. ft. in 1994. However, as you know, licensees such as ourselves in a non-compact state will be banned from the Barnwell SC repository by July 1994. In this situation, the issue of the cost of waste disposal changes to that of licensed storage at our facility.

The total 1990 radioactive waste disposal costs estimated in the Decommissioning Funding Plan is approximately \$2.2MM for a total volume of 25,315 cu ft. Based on the above waste disposal costs for 1993 and starting January 1, 1994 the current costs for disposal could amount to approximately \$7.1MM and \$7.4MM respectively. However, the current technology in waste reduction has shown that the volume of waste from any decommissioning effort on our site can be dramatically reduced as compared to the estimates made in 1990. As part of our routine radioactive waste

handling program we utilize technologies such as supercompaction, incineration and monitoring/decontamination methods to reduce waste volumes and minimize costs of disposal.

With regards to the waste disposal cost estimates for the existing Decommissioning Funding Plan we have estimated that with supercompaction the volume of structural material waste can be reduced by at least a factor of two, and through analytical monitoring techniques and decontamination the total volume of installed components for waste disposal could be reduced by 50%. This reduces the total estimates of waste volume to 12,657 cu. ft. for a total waste disposal charge of approximately \$3.7MM after January 1, 1994.

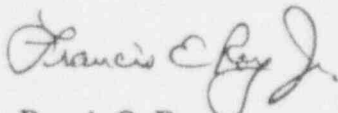
The estimated cost for the physical decommissioning without waste disposal costs was approximately \$7.3MM. Based on our understanding of the actual costs versus the estimated costs for a major decommissioning project at the DuPont site and due to our knowledge of the status of many of the building areas on our site that contain no radioactive material; such as Buildings #110, #350, #375 and #600; we are confident that the existing cost estimates are very conservative.

More specifically, an adjustment that could be made concerns the regulation of byproduct material and NARM, Naturally Occurring and Accelerator Produced Radioactive Material. The Decommissioning Funding Plan as written incorporates the total cost of decommissioning areas that handled byproduct material with areas that handle accelerator produced radioactive material. We estimate that approximately 1/2 of the areas in Building #200 are dedicated to strictly operations involving accelerator produced radioactive material, i.e. the radiopharmaceuticals thallium-201 and gallium-67. In Building #250 we estimate that approximately 1/3 of this facility is dedicated to operations involving strictly the accelerator produced radioactive material, thallium-201 and gallium-67. The bulk of these areas is made up of the six cyclotrons operating in this facility which are included in the Decommissioning Funding Plan. The 1990 decommissioning cost estimate excluding waste at \$7.3MM can be reduced by approximately \$2.6MM for costs pertaining just to the decommissioning of the areas with the short-lived accelerator produced isotopes Tl-201 and Ga-67. The cost for decommissioning excluding waste is then approximately \$4.8MM for the site based on the Plan.

The total cost of decommissioning our site is estimated to be no more than \$8.5MM. Thus, we believe the existing Letter of Credit amount, \$9.6MM, adequately covers any costs for the complete decommissioning of our facilities pursuant to the regulatory requirements of Title 10 CFR Part 30, §30.35.

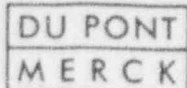
Please contact me if you require any additional information.

Sincerely,



for Dennis O. Dumas
Manager, Safety and Environmental Engineering

Telephone: 508-671-8669



FINANCE DEPARTMENT

Barley Mill Plaza
4301 Lancaster Pike
Wilmington, DE 19880-0024
Fax (302) 892-1843

November 18, 1993

Ms. Demetra T. Doscas
Citibank, N.A.
399 Park Avenue
New York, NY 10043

RE: Nuclear Regulatory Commission Billerica Site Letter of Credit #NY-08810-30014149

Dear Ms. Doscas:

Please amend Section 2 of the Standby Trust Agreement, Account #793822 to include the above listed letter of credit. After this amendment, the Standby Trust Agreement should reference both letters of credit listed below:

Billerica Site Letter of Credit #NY-08810-30014149
Glenolden Site Letter of Credit #NY-08810-30009428

When this amendment is complete, please send an updated copy of the Standby Trust Agreement to Ann Anthony and to the NRC. You may send the NRC copy to the following address:

Mr. Anthony Dimitriadis
U.S. Nuclear Regulatory Commission
Region 1
476 Allendale Road
King of Prussia, PA 19406-1415

In addition, please include a letter of acknowledgement with the Standby Trust Agreement when it is submitted to the NRC. The acknowledgement is needed to verify the execution of the Standby Trust Agreement and to certify the Trustee's signature and authority to enter into the agreement. A copy of the suggested wording is enclosed.

Thank you in advance for your attention to this matter. If you have any questions, please do not hesitate to contact Ann Anthony at (302) 892-2448.

Sincerely,

Karen M. Spofford
Manager, Cash & Financial Markets

4.3.4 Sample of Acknowledgement

ACKNOWLEDGEMENT

[The following is an example of the acknowledgement that must accompany the trust agreement for a standby trust fund or trust fund.]

STATE OF _____

To Wit: _____

CITY OF _____

On this _____ day of _____, before me, a notary public in and for the city and State aforesaid, personally appeared _____, and she/he did depose and say that she/he is the [title], of [_____], national banking association, Trustee, which executed the above instrument, that she/he knows the seal of said association; that the seal affixed to such instrument is such corporate seal; that it was so affixed by order of the association; and that she/he signed her/his name thereto by like order.

[Signature of notary public]

My Commission Expires: _____

[Date]

Citibank, N.A.
120 Wall Street
13th Floor
New York, NY 10043

ATTN: Trust Division

Gentlemen:

In accordance with the terms of the Agreement with you dated August 15, 1991, I, Thomas J. Bucknum, Secretary of The DuPont Merck Pharmaceutical Company, hereby certify that the following events have occurred:

1. The DuPont Merck Pharmaceutical Company is required to commence the decommissioning of its facility located at the Billerica Site (hereinafter called the decommissioning).
2. The plans and procedures for the commencement and conduct of the decommissioning have been approved by the United States Nuclear Regulatory Commission, or its successor, on _____ (Copy of approval attached).
3. The Board of Directors of The DuPont Merck Pharmaceutical Company has adopted the attached resolution authorizing the commencement of the decommissioning.

T. J. Bucknum - Secretary, The DuPont
Merck Pharmaceutical Company

Date

I, Thomas J. Bucknum, do hereby certify that I am Secretary of The DuPont Merck Pharmaceutical Company, a Delaware Partnership, and that the resolution listed below was duly adopted at a meeting of this Partnership's Board of Directors on _____, 19____.

IN WITNESS WHEREOF, I have hereunto signed my name and affixed the seal of this Partnership this _____ day of _____, 19____.

T. J. Bucknum - Secretary, The DuPont
Merck Pharmaceutical Company

RESOLVED, that this Board of Directors hereby authorizes the Chief Executive Officer, or such other employee of the Company as he/she may designate, to commence decommissioning activities at the Glenolden Site in accordance with the terms and conditions described to this Board of Directors at this meeting and with such other terms and conditions as the Chief Executive Officer shall approve with and upon the advice of Counsel.

Issuer
Services

Citibank, N.A.
120 Wall Street
13th Floor
New York, NY
10043

MS 16
K-8
20-00320-21

December 9, 1993

CITIBANK 

Mr. Anthony Dimitriadis
U.S. Nuclear Regulatory Commission
Region 1
476 Allendale Road
King of Prussia, PA 19406-1415

Re: 793822 Standby Trust Agreement

Dear Mr. Dimitriadis:

Please find enclosed a revised Standby Trust Agreement that reflects the additional site added to the Agreement.

Sincerely,



Bryan Gartenberg
Assistant Vice President

cc: Ann Anthony

OFFICIAL RECORD COPY ML 10

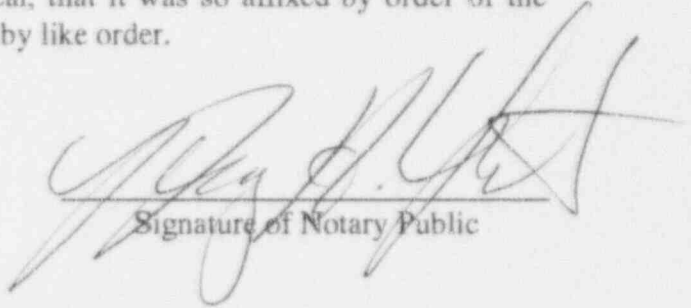
113360
DEC 14 1993



ACKNOWLEDGMENT

STATE OF New York, County of New York, City of New York

On this 9th day of December, before me, a notary public in and for the city and State aforesaid, personally appeared Bryan Gartenberg, and he did depose and say that he is the Assistant Vice President of Citibank, N.A., national banking association, Trustee, which executed the above instrument, that he knows the seal of said association; that the seal affixed to such instrument is such corporate seal; that it was so affixed by order of the association; and that he signed his name thereto by like order.



Signature of Notary Public

My Commission Expires: _____

WANCY H. FORTE
Notary Public, State of New York
No. 41-4902389
Qualified in Queens County
Certificate Filed in New York County
Commission Expires August 3, 1995

STANDBY TRUST AGREEMENT

TRUST AGREEMENT, the Agreement entered into as of August 15, 1991, by and between The Du Pont Merck Pharmaceutical Company (Du Pont Merck), Glenolden Site, herein referred to as the "Grantor," and Citibank, N.A., the "Trustee."

WHEREAS, the U.S. Nuclear Regulatory Commission (NRC), an agency of the U.S. Government, pursuant to the Atomic Energy Act of 1954, as amended, and the Energy Reorganization Act of 1974, has promulgated regulations in Title 10, Chapter I of the Code of Federal Regulations, Part 30. These regulations, applicable to the Grantor, require that a holder of, or an applicant for, a Part 30, license provided assurance that funds will be available when needed for required decommissioning activities.

WHEREAS, the Grantor has elected to use a Standby Letter of Credit to provide all of such financial assurance for the facilities identified herein; and

WHEREAS, when payment is made under a Standby Letter of Credit, this standby trust shall be used for the receipt of such payment; and

WHEREAS, the Grantor, acting through its duly authorized officers, has selected the Trustee to be the trustee under this Agreement, and the Trustee is willing to act as trustee,

NOW, THEREFORE, the Grantor and the Trustee agree as follows:

Section 1. Definitions. As used in this Agreement:

- (a) The term "Grantor" means the NRC licensee who enters into this Agreement and any successors or assigns of the Grantor.
- (b) The term "Trustee" means the trustee who enters into this Agreement and any successor Trustee.

Section 2. Cost of Decommissioning. This Agreement pertains to the costs of decommissioning the materials and activities identified in License Number 37-28764-02 and 20-00320-21 issued pursuant to 10 CFR Part 30 as shown in Schedule A.

Section 3. Establishment of Fund. The Grantor and the Trustee hereby establish a standby trust fund (the Fund) for the benefit of the NRC. The Grantor and the Trustee intend that no third party have access to the Fund except as provided herein.

Section 4. Payments Constituting the Fund. Payments made to the Trustee for the Fund shall consist of cash, securities, or other liquid assets acceptable to the Trustee. The Fund is established initially as consisting of the property, which is acceptable to the Trustee, described in Schedule B attached hereto. Such property and any other property subsequently

transferred to the Trustee are referred to as the "Fund," together with all earnings and profits thereon, less any payments or distributions made by the Trustee pursuant to this Agreement. The Fund shall be held by the Trustee, IN TRUST, as hereinafter provided. The Trustee shall not be responsible nor shall it undertake any responsibility for the amount of, or adequacy of the Fund, nor any duty to collect from the Grantor, any payments necessary to discharge any liabilities of the Grantor established by the NRC.

Section 5. Payment for Required Activities Specified in the Plan. The Trustee shall make payments from the Fund to the Grantor upon presentation to the Trustee of the following:

- a. A certificate duly executed by the Secretary of the Depositor attesting to the occurrence of the events, and in the form set forth in the attached Specimen Certificate, and
 - (1) that decommissioning is proceeding pursuant to an NRC-approved plan,
 - (2) that the funds withdrawn will be expended for activities undertaken pursuant to that Plan, and
 - (3) that the NRC has been given 30 days' prior notice of Du Pont Merck's intent to withdraw funds from the escrow fund.

No withdrawal from the fund can exceed ten percent (10%) of the outstanding balance of the Fund or Fifteen Thousand Dollars (\$15,000), whichever is greater, unless NRC approval is attached.

In the event of the Grantor's default or inability to direct decommissioning activities, the Trustee shall make payments from the Fund as the NRC shall direct, in writing, to provide for the payment of the costs of required activities covered by this Agreement. The Trustee shall reimburse the Grantor or other persons as specified by the NRC from the Fund for expenditures for required activities in such amounts as the NRC shall direct in writing. In addition, the Trustee shall refund to the Grantor such amounts as the NRC specifies in writing. Upon refund, such funds shall no longer constitute part of the Fund as defined herein.

Section 6. Trust Management. The Trustee shall invest and reinvest the principal and income of the Fund and keep the Fund invested as a single fund, without distinction between principal and income, in accordance with general investment policies and guidelines which the Grantor may communicate in writing to the Trustee from time to time, subject, however, to the provisions of this section. In investing, reinvesting, exchanging, selling and managing the Fund, the Trustee shall discharge its duties with respect to the Fund solely in the interest of the beneficiary and with the care, skill, prudence, and diligence under the circumstances then prevailing which persons

of prudence, acting in a like capacity and familiar with such matters, would use in the conduct of an enterprise of a like character and with like aims; except that:

- (a) Securities or other obligations of the Grantor, or any other owner or operator of the facilities, or any of their affiliates as defined in the Investment Company Act of 1940, as amended (15 U.S.C. 80a-2(a)), shall not be acquired or held, unless they are securities or other obligations of the Federal or a State government;
- (b) The Trustee is authorized to invest the Fund in time or demand deposits of the Trustee, to the extent insured by an agency of the Federal Government; and
- (c) For a reasonable time, not to exceed 60 days, the Trustee is authorized to hold uninvested cash, awaiting investment or distribution, without liability for the payment of interest thereon.

Section 7. Commingling and Investment. The Trustee is expressly authorized in its discretion:

- (a) To transfer from time to time any or all of the assets of the fund to any common, commingled, or collective trust fund created by the Trustee in which the Fund is eligible to participate, subject to all of the provisions thereof, to be commingled with the assets of other trusts participating therein; and
- (b) To purchase shares in any investment company registered under the Investment Company Act of 1940 (15 U.S.C. 80a-1 et seq.), including one that may be created, managed, underwritten, or to which investment advice is rendered, or the shares of which are sold by the Trustee. The Trustee may vote such shares in its discretion.

Section 8. Express Powers of Trustee. Without in any way limiting the powers and discretion conferred upon the Trustee by the other provisions of this Agreement or by law, the Trustee is expressly authorized and empowered:

- (a) To sell, exchange, convey, transfer, or otherwise dispose of any property held by it, by public or private sale, as necessary for prudent management of the Fund;
- (b) To make, execute, acknowledge, and deliver any and all documents of transfer and conveyance and any and all other instruments that may be necessary or appropriate to carry out the powers herein granted;
- (c) To register any securities held in the Fund in its own name, or in the name of a nominee, and to hold any security in bearer form or in book entry, or to combine certificates representing such securities with certificates of the same issue held by the Trustee in other fiduciary capacities, to reinvest interest payments and funds from matured and redeemed instruments, to file proper forms concerning securities held

in the Fund in a timely fashion with appropriate government agencies, or to deposit or arrange for the deposit of such securities in a qualified central depository even though, when so deposited, such securities may be merged and held in bulk in the name of the nominee or such depository with other securities deposited therein by another person, or to deposit or arrange for the deposit of any securities issued by the U.S. Government, or any agency or instrumentality thereof, with a Federal Reserve bank, but the books and records of the Trustee shall at all times show that all such securities are part of the Fund;

- (d) To deposit any cash in the Fund in interest-bearing accounts maintained or savings certificates issued by the Trustee, in its separate corporate capacity, or in any other banking institution affiliated with the Trustee, to the extent insured by an agency of the Federal government; and
- (e) To compromise or otherwise adjust all claims in favor of or against the Fund.

Section 9. Taxes and Expenses. All taxes of any kind that may be assessed or levied against or in respect of the Fund and all brokerage commissions incurred by the Fund shall be paid from the Fund. All other expenses incurred by the Trustee in connection with the administration of this Trust, including fees for legal services rendered to the Trustee, the compensation of the Trustee to the extent not paid directly by the Grantor, and all other proper charges and disbursements of the Trustee shall be paid from the Fund.

Section 10. Annual Valuation. After payment has been made into this standby trust fund, the Trustee shall annually, at least 30 days before the anniversary date of receipt of payment into the standby trust fund, furnish to the Grantor and to the NRC a statement confirming the value of the Trust. Any securities in the Fund shall be valued at market value as of no more than 60 days before the anniversary date of the establishment of the Fund. The failure of the Grantor to object in writing to the Trustee within 30 days after the statement has been furnished to the Grantor and the NRC shall constitute a conclusively binding assent by the Grantor, barring the grantor from asserting any claim or liability against the Trustee with respect to the matters disclosed in the statement.

Section 11. Advice of Counsel. The Trustee may from time to time consult with counsel with respect to any question arising as to the construction of this Agreement or any action to be taken hereunder. The Trustee shall be fully protected, to the extent permitted by law, in acting on the advice of counsel.

Section 12. Trustee Compensation. The Trustee shall be entitled to reasonable compensation for its services as agreed upon in writing with the Grantor. (See Schedule C.)

Section 13. Successor Trustee. Upon 90 days notice to the NRC, the Trustee may resign; upon 90 days notice to NRC and the Trustee, the Grantor may replace the Trustee; but such resignation or replacement shall not be effective until the Grantor has appointed a successor Trustee and this successor accepts the appointment. The successor Trustee shall have the same powers and duties as those conferred upon the Trustee hereunder. Upon the successor Trustee's acceptance of the appointment, the Trustee shall assign, transfer, and pay over to the successor Trustee the funds and properties then constituting the Fund. If for any reason the Grantor cannot or does not act in the event of the resignation of the Trustee, the Trustee may apply to a court of competent jurisdiction for the appointment of a successor Trustee or for instructions. The successor Trustee shall specify the date on which it assumes administration of the trust in a writing sent to the Grantor, the NRC and the present Trustee by certified mail 10 days before such change becomes effective. Any expenses incurred by the Trustee as a result of any of the acts contemplated by this section shall be paid as provided in Section 9.

Section 15. Amendment of Agreement. This Agreement may be amended by an instrument in writing executed by the Grantor, the Trustee and the NRC, or by the Trustee and the NRC, if the Grantor ceases to exist.


Section 16. Irrevocability and Termination. Subject to the right of the parties to amend this Agreement as provided in Section 15, this trust shall be irrevocable and shall continue until terminated at the written agreement of the Grantor, the Trustee, and the NRC or State agency, or by the Trustee and the trust, all remaining trust property, less final trust administration expenses, shall be delivered to the Grantor or its successor.

Section 17. Immunity and Indemnification. The Trustee shall not incur personal liability of any nature in connection with any act or omission, made in good faith, in the administration of this trust, or in carrying out any directions by the Grantor or the NRC issued in accordance with this Agreement. The Trustee shall be indemnified and saved harmless by the Grantor or from the trust fund, or both, from and against any personal liability to which the Trustee may be subjected by reason of any act or conduct in its official capacity, including all expenses reasonably incurred in its defense in the event the Grantor fails to provide such defense.

Section 18. This Agreement shall be administered, construed, and enforced according to the laws of the State of New York.

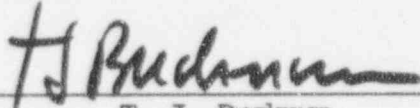
Section 19. Interpretation and Severability. As used in this Agreement, words in the singular include the plural and words in the plural include the singular. The descriptive headings for each section of this Agreement shall not affect the interpretation or the legal efficacy of this Agreement. If any part of this agreement is invalid, it shall not affect the remaining provisions which will remain valid and enforceable.

IN WITNESS THEREOF the parties have caused this Agreement to be executed by the respective officers duly authorized and the incorporate seals to be hereunto affixed and attested as of the date first written above.

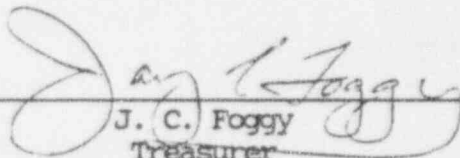


R. L. Dunning
Senior Vice President
and Chief Financial Officer

ATTEST:

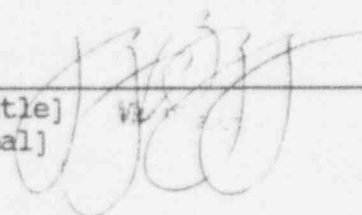


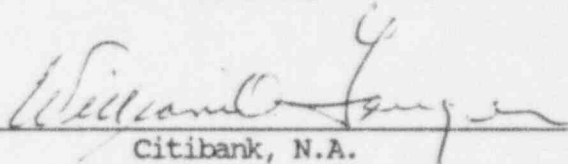
T. J. Bucknum
Secretary



J. C. Foggy
Treasurer

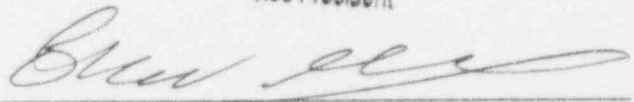
ATTEST:

[Title] _____
[Seal] 



Citibank, N.A.

WILLIAM O. GAUGEPE
Vice President



Citibank, N.A.

WILLIAM O. GAUGEPE
Assistant Vice President

TRUST AGREEMENT SCHEDULE

SCHEDULE A

This Agreement demonstrating financial assurance for the following cost estimates for the following licensed activities:

<u>U.S. Nuclear Regulatory Commission License Number</u>	<u>Name and Address of Licensee</u>	<u>Address of Licensed Activity</u>	<u>Cost Estimates for Regulatory Assurances Demonstrated by this Agreement</u>
#37-28764-02	The Du Pont Merck Pharmaceutical Co.	Glenolden Site Glenolden, PA	\$150,000
#20-00320-21	E.I. Du Pont de Nemours & Co.	Boston Site Boston, MA	\$5,800,000

TRUST AGREEMENT SCHEDULE

SCHEDULE B

AMOUNT \$ 150,000

AS EVIDENCED BY Standby L/C # 3000-9428

AMOUNT \$ 5,800,000

AS EVIDENCED BY Standby L/C # 300-14149

NORTH AMERICAN TRADE FINANCE

1

NOVEMBER 22, 1993

U.S. NUCLEAR REGULATORY
COMMISSION
WASHINGTON, DC 20555

REF: IRREVOCABLE LETTER OF CREDIT NO. NY-00881-30007170

GENTLEMEN:

AT THE REQUEST OF: E I DU PONT DE NEMOURS & CO. MS J.M. THOMAS D-9094 1007
MARKET STREET ATTN: BANK ADMINISTRATION, CASH MANAGEMENT, AND BANKING, FINANCE
DEPT WILMINGTON, DE 19898 WE AMEND OUR REFERENCED LETTER OF CREDIT AS
FOLLOWS:

CREDIT DECREASED BY US\$5,800.00 TO AN AGGREGATE AMOUNT OF US\$9,600,000.00
(NINE MILLION SIX HUNDRED THOUSAND AND 00/100 U.S. DOLLARS).

WHEREVER READING "GREATER BOSTON AREA SITE" NOW TO READ, "BOSTON SITE".

KINDLY PROVIDE US WITH YOUR AGREEMENT TO THIS REDUCTION BY SIGNING AND
RETURNING THE ATTACHED COPY TO THE ATTENTION OF THE UNDERSIGNED.

THIS AMENDMENT IS AN INTEGRAL PART OF THE ORIGINAL CREDIT. ALL OTHER TERMS
AND CONDITIONS REMAIN UNCHANGED

IMMEDIATE NOTIFICATION MUST BE GIVEN TO US IF THIS AMENDMENT IS NOT
ACCEPTABLE TO YOU.

THIS LETTER OF CREDIT IS SUBJECT TO THE UNIFORM CUSTOMS AND PRACTICE FOR
DOCUMENTARY CREDITS (1983 REVISION) INTERNATIONAL CHAMBER OF COMMERCE
BROCHURE #400, SHALL BE DEEMED TO BE A CONTRACT MADE UNDER, AND AS TO
MATTERS NOT GOVERNED BY THE UCP, SHALL BE GOVERNED BY AND CONSTRUED IN
ACCORDANCE WITH THE LAWS OF THE STATE OF NEW YORK AND APPLICABLE
U.S. FEDERAL LAW.

CITIBANK N.A.

Bernadette M. Morfeld
AUTHORIZED SIGNATURE.
BERNADETTE M. MORFELD
Service Officer
North American Trade Services
111 Wall St./16th Fl.
(212) 657-7367

113360

NORTH AMERICAN TRADE FINANCE

NOVEMBER 22, 1997

U.S. NUCLEAR REGULATORY
COMMISSION
WASHINGTON, DC 20555

NOV 22 11 24 AM '97

REF: IRREVOCABLE LETTER OF CREDIT NO. NY-00881-30007170

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MARKET STREET ATTN: BANK ADMINISTRATION, CASH MANAGEMENT AND BANKING, FINANCE
DEPT WILMINGTON, DE 19896WE AMEND OUR REFERENCED LETTER OF CREDIT AS
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BROCHURE #400, SHALL BE DEEMED TO BE A CONTRACT MADE UNDER, AND AS TO
MATTERS NOT GOVERNED BY THE UCP, SHALL BE GOVERNED BY AND CONSTRUED IN
ACCORDANCE WITH THE LAWS OF THE STATE OF NEW YORK AND APPLICABLE
U.S. FEDERAL LAW.

CITIBANK N.A.

Bernadette M. Young

AUTHORIZED SIGNATURE:

Accepted by

Return to

*CITIBANK NA
111 Wall St
ny ny.10043*

JOSEPH JAKLITSCH, S.O.
North American Trade Services
111 Wall St./16th Fl./Zone 9
(212) 657-9554

113360

OCT 27 1993

License Nos. 20-00320-21
20-28598-01
Docket Nos. 030-28902
030-32013
Control Nos. 113360
115812

DuPont Merck Pharmaceutical Co.
ATTN: Dennis Dumas, Manager
Safety and Environmental Engineering
331 Treble Cove Road
North Billerica, Massachusetts 01862

Dear Mr. Dumas:

Subject: Financial Assurance for Decommissioning

This is in reference to your submittals dated July 30, 1990 and September 19, 1990 to provide financial assurance for License Nos. 20-00320-21 and 20-28598-01. These included Decommissioning Funding Plans (DFP) and cost estimates for two facilities and a Letter of Credit. We have reviewed your submission and request that you modify the appropriate documents to address the specific issues listed below:

1. **Submit a Letter of Credit for License No. 20-28598-01.**

The Letter of Credit in the amount of \$12,000,000 references only the Boston facility, License No. 20-00320-21. Based on the cost estimates, it is not clear if you intended to include in this amount the cost for both the Boston and the North Billerica facilities, or if you intended to have the Letter of Credit reference only the North Billerica facility, in the amount of \$9,586,593.00 with a 25% contingency factor. The Letter of Credit must specify all of the License Numbers and facilities for which it is intended. Modify this Letter of Credit or submit a separate Letter of Credit for License No. 20-28598-01.

2. **Submit a Standby Trust Agreement and related documentation for License No. 20-28598-01.**

Under 10 CFR 30.35(f)(2)(ii), a surety method of assurance, such as a Letter of Credit, "must be payable to a trust established for decommissioning costs." In the event the licensee defaults on its decommissioning obligations, the guarantor (Trustee), under the terms of the Agreement, Section 5, must make funds available in a trust fund to allow for payment for these activities.

A trust fund must be established because funds paid directly to the NRC must be deposited into the U.S. Treasury and would not be available for decommissioning costs. To avoid the possibility that a trust fund would not be readily available if and when needed, Regulatory Guide 3.66, page 3-2, states that a standby trust fund be established if a Letter of Credit is used as a financial instrument. Please submit a Standby Trust Agreement for License No. 20-28598-01. Submit completely executed, originally signed documents.

3. **Submit originally signed duplicates of the Standby Trust Agreement for License No. 20-00320-21.**

You submitted copies of the Standby Trust Agreement for the Boston facility, License No. 20-00320-21. Please submit completely executed, originally signed duplicates of this Agreement.

4. **Submit evidence indicating that the party signing the Standby Trust Agreement for E. I. duPont de Nemours & Company is authorized to represent the company.**

The submission does not provide sufficient evidence indicating that the party signing the mechanism is authorized to enter into a Standby Trust Agreement for the company, as recommended in Regulatory Guide 3.66, page 3-14. Evidence of authority to represent the licensee is necessary to ensure the validity and enforceability of the mechanism. Therefore, please submit a copy of the corporate by-laws or other evidence indicating that the party signing the Standby Trust Agreement is authorized to do so.

5. **Confirm that no credit is taken for salvage value in the DFP's for the North Billerica and Boston facilities.**

You make conflicting statements about credit for salvage value in your DFP's. For example, on page 19 of your decommissioning funding plan for the North Billerica facility, (page 20 for the Boston facility), you state:

"DuPont and DuPont Merck Pharmaceuticals could potentially offset a portion of the decommissioning cost through the salvage of clean, usable installed components."

But on page 2 of these same documents you state:

"However this cost estimate does not take into account any value that may be realized from the salvage of these components."

Confirm that you have not included in the cost estimates credit for any salvage value that may be realized from the sale of potential assets after decommissioning.

6. **Describe the means to be used for adjusting cost estimates and associated funding levels over the life of the facilities.**

Under 10 CFR 30.35(e) you are required to describe the means you will use to adjust decommissioning cost estimates and associated funding levels over the life of the facility. You did not provide such a description in the decommissioning funding plan. Please provide one. Regulatory Guide 3.66 provides a method for adjusting the cost estimates and suggests that adjustments be made for inflation for site-specific factors at the time of license renewal, or when the amounts/types of material at the facility change. Adjustments should be made to account for inflation, for changes in prices of goods and services, for changes in facility conditions, and for changes in expected decommissioning procedures.

7. **Incorporate a contingency factor into each of the total decommissioning cost estimates.**

On page 27 of your DFP's you state:

"The cost analysis does not factor in contingencies..."

Incorporating a contingency factor in the cost estimate helps to ensure that licensees are prepared for unexpected circumstances that could raise decommissioning costs. NUREG/CR-1754 (copy enclosed) uses a contingency factor of 25 percent in its cost estimates for each of six reference laboratories. Please incorporate a contingency factor of 25 percent into the decommissioning cost estimate. You may choose to use a lower contingency factor if you can show why a lower factor is appropriate. Also, please modify your estimates for radioactive waste disposal to coincide with current, October 1993, waste disposal costs.

Satisfactory financial assurance is required for your license. Therefore, we request that you respond within 30 calendar days of the date of this letter. Please reply in duplicate to my attention and at the Region I office and refer to Mail Control Nos. 113360 and 115812.

If you have any questions regarding this letter, please contact Anthony Dimitriadis of my staff at (215) 337-6953.

Sincerely,

Original Signed By:
Mohamed M. Shanbaky

Mohamed M. Shanbaky, Chief
Research and Development Section
Division of Radiation Safety
and Safeguards

DuPont Merck Pharmaceutical Co.

-4-

Enclosures:

1. Regulatory Guide 3.66
2. NUREG/CR-1754
3. NUREG/CR-1754, Addendum 1

cc (w/o enclosures):

E.I. duPont de Nemours & Company, Inc.
Medical Products/Imaging Systems
NEN Products
ATTN: Michael Jackson
Operations Manager
549 Albany Street
Boston, Massachusetts 02118

bcc:

M. Shanbaky, RI
A. Dimitriadis, RI

DRSS:RI
Dimitriadis/gc

10/21/93

DRSS:RI
Shanbaky

MS
10/27/93

NRC FORM 218 (4-78) NRCM 8248		U.S. NUCLEAR REGULATORY COMMISSION		DATE 4/30/92
TELEPHONE OR VERBAL CONVERSATION RECORD				TIME 10:06 <input type="checkbox"/> A.M. <input checked="" type="checkbox"/> P.M.
<input type="checkbox"/> INCOMING CALL		<input type="checkbox"/> OUTGOING CALL		<input type="checkbox"/> VISIT
PERSON CALLING Eric H. Reber	OFFICE/ADDRESS Region I	PHONE NUMBER (215) 337-5276	EXTENSION	
PERSON CALLED Francis E. Roy Jr.	OFFICE/ADDRESS	PHONE NUMBER (508) 671-9242	EXTENSION	
CONVERSATION				
SUBJECT Financial Assurance for DuPont Merck				
SUMMARY Pharmaceuticals 20-00320-21(dP) + 20-28598-01 (dPM)				
<p>1. If you intend that LOC # NY-0881-30007170 cover 20-28598-01 (dPM) and associated Standby Trust F. d ←, these documents should be amended to reference the Billerica site license #</p> <p>2. For Boston site you estimate \$ 5.8 million for Billerica you estimate \$ 9.5 million for a total of \$15.4 million - we suggest a contingency of 25% for a total of \$19.3 million</p> <p>he is considering options and will send a response</p>				
REFERRED TO:			<input type="checkbox"/> ADVISE ME OF ACTION TAKEN.	
ACTION REQUESTED			INITIALS	
			DATE	
ACTION TAKEN			INITIALS	
			DATE	



E.I. DU PONT DE NEMOURS & CO. (INC.)
MEDICAL PRODUCTS DEPARTMENT

MS 16
L3

030-28902

December 9, 1991
U.S. Nuclear Regulatory Commission
475 Allendale Road
King of Prussia
Pennsylvania, 19406-1415

ATTN: John D. Kinnerman, Chief
Research, Development and Decommissioning
Section B
Division of Radiation Safety and Safeguards
Region 1

REF License No 20-00320-21
Docket No 030-28902
Control No 113 360

Dear Mr. Kinnerman,

I have recently received a copy of your letter dated 11/15/91 from Francis E. Roy Jr. of the DuPont Merck Pharmaceuticals Company. Mr. Roy informs me that you have since recovered the Decommissioning Funding Plan cost estimate sent Oct. 25, 1990. I trust that this and the "Irrevocable Letter of Credit" from Citibank, NA dated 7/26/90 answers your questions. If you need any further information please call me at (617) 350-9111.

Sincerely

Leonard R. Smith RPO
Radiation Protection Consultant

MEDICAL PRODUCTS DEPARTMENT
549 Albany Street, Boston, Massachusetts 02118 Telephone 617-482-9595 Fax (617) 542-8468

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113360

12/20/91

NOV 15 1991

License No. 20-00320-21
Docket No. 030-28902
Control No. 113360

E.I. DuPont de Nemours & Company, Inc.
ATTN: Francis E. Roy, Jr.
Health Physicist
Medical Products Department
Boston Area
549 Albany Street
Boston, Massachusetts 02118

Dear Mr. Roy:

This is in reference to your submittal dated July 30, 1990 to provide financial assurance for License No. 20-00320-21. In order to continue our review, we need the following additional information:

1. Please provide the Decommissioning Funding Plan cost estimate which you stated was being compiled by an outside contractor.
2. Please submit evidence that the party signing the Standby Trust Agreement for DuPont is authorized to represent the organization in this transaction.

We will continue our review upon receipt of this information. Please reply in duplicate to my attention at the Region I office and refer to Mail Control No. 113360.

If we do not receive a reply from you within 30 calendar days from the date of this letter, we shall assume that you do not wish to pursue your application.

Sincerely,

Original Signed By:

John D. Kinneman

John D. Kinneman, Chief
Research, Development, &
Decommissioning Section B
Division of Radiation Safety
and Safeguards

Enclosure: Regulatory Guide 3.66

E.I. DuPont de Nemours
& Company, Inc.

2

RE DRSS
Reber/kw
10/14/91

RE DRSS
Kinneman
10/14/91

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ML 465 REBER - 0002.0.0
10/18/91

LIST OF INSTRUCTIONS

E.I. DU PONT DE NEMOURS AND COMPANY

In reviewing the comments the reviewer will note that there will be some overlap between ICF and OGC comments. The following comments should be included in the basis for the deficiency letter:

1. ICF comments 1 through 5 plus last paragraph.
2. All OGC comments.

All other comments and discussions are for reviewer information.

From: Mike Finkelstein

Re: Review Of ICF Comments from the Seventh Group

E. I. Du Pont de Nemours & Company (Letter of Credit)

All ICF recommendations should be implemented because the analysis is correct. Two letters of credit should be included in this submittal. No further comments are submitted for this licensee's submittal.



ICF INCORPORATED

January 31, 1991

To: Dr. Lou Bykoski, NMSS/NRC

From: David Mitamura, John Collier, and Craig Dean, ICF Incorporated

Subject: Review of Letter of Credit Submitted by E.I. Du Pont de Nemours & Company

E.I. Du Pont de Nemours & Company submitted a letter of credit in the amount of \$12,000,000, and a standby trust agreement to assure decommissioning costs for license 20-00320-21 issued under 10 CFR Part 30. Du Pont also submitted a standby trust agreement for license 07-00455-02 (apparently issued under 10 CFR Part 30), but did not include a corresponding letter of credit.¹ Upon review of the submission, ICF recommends that NRC Region I require the licensee to modify the submission in the following ways:

- (1) Submit a decommissioning cost estimate for license 20-00320-21;
- (2) Submit a certification statement for license 07-00455-02;
- (3) Submit a letter of credit for license 07-00455-02 ← *see MC# 113068*
- (4) Submit evidence that the party signing the standby trust agreements for the licensee is authorized to represent the company; and
- (5) Submit specimen certificates of resolution with both standby trust agreements.

These recommendations and other issues are discussed below.

- (1) Submit a Decommissioning Cost Estimate for License 20-00320-21

The submission states that the licensee is having a decommissioning funding plan (DFP) for license 20-00320-21 prepared by an outside contractor; the submission itself, however, provides no supporting documentation for the initial \$12,000,000 cost estimate, nor any description of the facilities. Therefore, ICF cannot evaluate whether the licensee included reasonable costs

¹ Documentation for the second trust fund suggests that a letter of credit in the amount of \$750,000 should have been submitted for license 07-00455-02. See Recommendation 3.

estimates for all major decommissioning activities in its overall decommissioning cost estimate.

ICF recommends that the NRC require the licensee to use or adapt the "Cost Estimating Tables" in Appendix F of the draft *Regulatory Guide "Standard Format and Content of Financial Assurance Mechanisms Required for Decommissioning Under 10 CFR Parts 30, 40, 70, and 72,"* January 1990, to demonstrate that it has provided reasonable cost estimates for all major decommissioning activities. In addition, the licensee should also incorporate a contingency factor of 25 percent into its estimate², and should clarify that it has not included in its cost estimate credit for any salvage value that may be realized with the sale of potential assets after decommissioning (see page 1-13 of the draft *Regulatory Guide*). Finally, as required under 10 CFR 30.35(e), the licensee should describe the means it will use to adjust its decommissioning cost estimate and associated funding level over the life of the facility. Adjustments should be made to account for inflation, for other changes in prices of specific goods and services, for changes in facility conditions, and for changes in expected decommissioning procedures.

(2) Submit a Certification Statement for License 07-00455-02

The licensee's submission does not include either a decommissioning cost estimate or a certification statement for license 07-00455-02. Based upon the \$750,000 of assurance specified in the standby trust agreement, it appears that a certification statement should have been included for this license. The statement of certification, in addition to providing license numbers and other information that would allow NRC to verify the certification amount (e.g., review the names and locations of the facilities for which financial assurance is provided, and the amount and types of materials handled), officially certifies that the licensee is in compliance with the appropriate requirements. ICF recommends that NRC require the licensee to submit a statement of certification, as recommended in NRC's draft *Regulatory Guide*, page 1-7.

(3) Submit a Letter of Credit for License 07-00455-02

Although the licensee submitted a standby trust agreement for license 07-00455-02 that references a letter of credit, no letter of credit for this license was submitted. NRC regulations (e.g., 10 CFR 30.35) require licensees to submit a copy of their financial assurance mechanism. ICF recommends that NRC require the licensee to submit the letter of credit so that the licensee's demonstration of financial assurance for this license may be evaluated. NRC will also need an original copy of the letter of credit in order to draw on the mechanism.

² Use of a contingency factor of 25 percent is consistent with the cost estimates for each of six reference laboratories included in NUREG/CR-1754, Addendum 1, Technology, Safety and Costs of Decommissioning Reference Non-Fuel-Cycle Nuclear Facilities: Compendium of Current Information, Pacific Northwest Laboratory, October 1989.

(4) Submit Evidence Indicating that the Party Signing the Standby Trust Agreements for the Licensee is Authorized to Represent the Company

The submission does not provide sufficient evidence³ to show that the party signing the two standby trust agreements is authorized to represent the licensee in entering the agreements, as recommended in the draft *Regulatory Guide*. ICF recommends that NRC require the licensee to submit a copy of the corporate by-laws or other evidence demonstrating this authority in order to ensure that the financial mechanisms are valid and enforceable.

(5) Submit Specimen Certificates of Resolution with Both Standby Trust Agreements

Both of the standby trust agreements submitted by the licensee refer to a specimen certificate of events, which was included with each agreement. Each specimen certificate of events, however, requires submission of a specimen certificate of resolution authorizing the commencement of decommissioning. The licensee did not submit a specimen certificate of resolution for either standby trust agreement.⁴ The specimen certificates provide the required format for instructing the trustee to release decommissioning funds from the trust. ICF recommends that NRC require the licensee to submit a specimen certificate of resolution worded similarly to the one on page 4-25 of the draft *Regulatory Guide*.

Other Issues

The submission differs from the recommendations in the draft *Regulatory Guide* in a few other ways which do not decrease the protection provided by the mechanisms. Apart from editorial and non-substantive changes and typographical errors, the following modification is noteworthy:

- The submission includes a letter of acknowledgement for each standby trust agreement, although the wording of the letters is significantly different from that recommended by the draft *Regulatory Guide* on page 4-27. Nevertheless, the letters are notarized and they demonstrate that the trustee has "acknowledged" the agreements.

Finally, the Region should ensure that documents submitted by the licensee are originally signed duplicates, as recommended in the draft

³ The submission does include a "certificate of resolution," which is very different from the specimen certificate of resolution described in the draft *Regulatory Guide*. The submitted certificate is labeled "Instructions to the Grantor" and states that orders and instructions to the trustee must be signed by persons authorized under certain corporate resolutions. The certificate does not, however, state who is authorized, and it is not signed.

⁴ The submission includes a "certificate of resolution," described earlier, that does not seem related to the "specimen certificate of resolution" required in the draft *Regulatory Guide*, page 4-25.

Regulatory Guide. Unless the documents have been properly signed, NRC cannot be certain that the financial assurance mechanisms are enforceable. Because ICF does not possess the original submissions, we cannot verify compliance with these requirements.

attachments

PROPERTY A
CHECKLIST FOR DECOMMISSIONING FINANCIAL ASSURANCE

NAME OF LICENSEE OR APPLICANT

D. Pitt Medical Products Dept

~~E I du Pont de Nemours & Co~~

MAILING ADDRESS

331 Trestle Cove Road,

~~Experimental Station Site, 3 Greater Boston Area S.W.~~

N. Billerica, MA 01862

~~Wilmington, DE~~

A. Licensee Part (check one of the following):

- Part 30 Licensee or Applicant _____ Part 70 Licensee or Applicant
 _____ Part 40 Licensee or Applicant _____ Part 72 Licensee or Applicant

B. Check appropriate item in each category (if applicable)

1. 7/27/90 Date of Financial Assurance Submission Eff. 7/27/90
 2. _____ Public Entity Exp 7/27/91

Private Entity

2 Facilities →

3. Certification of Financial Assurance = 750,000 No Cert. Statement
 Decommissioning Funding Plan License 07-00455-02 = 12,000,000 License 20-60320-21 = 12,000,000 No DFP

4. (a) _____ Prepayment Option (See Appendix B)
 _____ Trust Fund
 _____ Escrow Account
 _____ Certificate of Deposit
 _____ Government Fund
 _____ Deposit of Government Securities

- (b) Surety/Insurance/Other Guarantee (See Appendix C)
 _____ Surety bond
 Letter of Credit \$120.00 To Set Up
 _____ Line of Credit
 _____ Parent Company Guarantee/Financial Test*

- (c) _____ External Sinking Fund, Sinking Account and Surety/Insurance (See Appendix D)
 _____ Trust Fund
 _____ Escrow Account
 _____ Certificate of Deposit
 _____ Government Fund
 _____ Deposit of Government Securities
 _____ Surety Bond
 _____ Letter of Credit
 _____ Line of Credit

(d) _____ Statement of Intent (public entities only)

*May not be used in combination with any other instrument.

APPENDIX C

CHECKLIST FOR SUBMISSION OF SURETY/INSURANCE/PARENT COMPANY GUARANTEE

A. Check Appropriate Form of Surety/Insurance/Guarantee

- Surety Bond
- Letter of Credit
- Line of Credit
- Parent Company Guarantee/Financial Test*
- Insurance

B. Check Documents Submitted for Surety/Insurance/Guarantee

1. Surety Bond
 - Surety Bond
 - Standby Trust Agreement
 - Acknowledgement
2. Letter of Credit

<ul style="list-style-type: none"> <input checked="" type="checkbox"/> Letter of Credit → same <input checked="" type="checkbox"/> Standby Trust Agreement → very close <input checked="" type="checkbox"/> Acknowledgement → not submitted 	<p>For license 20-00320-21</p> <p>For license 07-00455-02</p> <p>no letter of credit the very close D. Herent</p>
---	---
3. Line of Credit
 - Verification
 - Standby Trust Agreement
 - Acknowledgement
4. Parent Company Guarantee
 - Letter from Chief Executive Officer of Applicant or Licensee
 - Letter from Chief Financial Officer of Parent Company
 - Financial Test: Alternative [I or II]
 - Auditor's Special Report and Attached Schedule
 - Corporate Guarantee
 - Standby Trust Agreement
 - Acknowledgement
5. Insurance
 - Certificate of Insurance
 - Standby Trust Agreement
 - Acknowledgement

May not be used in combination with any other instrument.

None submitted for
license 07-00455-02

CHECKLIST OF CRITERIA FOR REVIEW OF LETTERS OF CREDIT

n/a • Copy of corporate by-laws or other evidence indicating that parties signing the financial instrument (for the applicant) are authorized to represent the organization in the transaction.

To be verified by Region
• Evidence that the financial instrument is an originally signed duplicate (e.g., an executed copy of the instrument).

YES • Evidence that the financial institution is regulated by Federal or State agency (e.g., member of FDIC, Federal Reserve System, etc.). Citibank, NA

Yes • The instrument must be entitled ^{an irrevocable} letter of credit.

Yes • The letter should be limited in amount.

Yes • The letter of credit must contain a specified expiration date or be written for a definite term. (open ended or automatically renewable)

Yes • The issuer's obligation to pay the beneficiary should arise only upon presentation of a draft or other documents specified in the letter of credit.

~~Yes~~
implied • The bank must not be called upon to determine a question of fact or law at issue between the licensee and the Commission or State regulatory agency.

OK • The licensee should have an unqualified obligation to reimburse the issuer for payments made under the letter of credit.

Yes • The letter of credit must be made payable to a standby trust

EXHIBIT 3-5

De Pont
licence
20-00320-21

Standby

CHECKLIST OF CRITERIA FOR REVIEW OF TRUST AGREEMENTS^a

No

- Copy of corporate by-laws or other evidence indicating that parties signing the financial instrument (for the applicant) are authorized to represent the organization in the transaction.

To be verified by Region

Evidence that the financial instrument is an originally signed duplicate (e.g., an executed copy of the instrument).

- Evidence that the financial institution has authority to act as a trustee. Citibank, NA See Directory of Trust Institutions

- Purpose of trust ("whereas" clauses).

1. Description

- Grantor or grantors (introductory paragraph).

1. Names
2. Addresses

- Trustee or trustees.

1. Names and addresses *No address in intro P, but included on cert of Events*
2. Bank or corporate trustee (introductory paragraph)

- Identification of facilities and cost estimates (Section 2).^b

^a Adapted from 17A Am Jur Legal Forms 2d (Rev) §251.94.

^b References are to recommended wording for trust agreements provided in Section 4.

EXHIBIT 3-5 (continued)

- Words of transfer, conveyance, and delivery in trust (Section 3).
- Payments constituting the trust fund (Section 4).
- Duration of trust. *until terminated*
- Description of trust property.
 1. Property described in attached schedule (Schedule B) *Does not specify U/C #*
 2. Cash
 3. Stock and other securities
- Additions to trust.
- Distribution of trust principal (Section 5).
 1. Disbursement to licensee upon proper certification
 2. Payment for activities at NRC's direction in writing
 3. Refund to grantor at NRC's specification in writing after completion of decommissioning activities
 4. *No w. removal may exceed 10%*
- Trust management (Sections 6-8).
 1. Discretionary powers
 2. Fiduciary duty
 3. Commingling and investment
 4. Sale or exchange of trust property
 5. Scope of investments
 6. Express powers of trustee
 7. Borrowing money and encumbering trust assets
- (Optional provisions)

EXHIBIT 3-5 (continued)

- 8. Insurance
- 9. Operation of business
- 10. Compromise of claims

✓ Taxes and expenses (Section 9).

✓ Annual valuation (Section 10).

✓ Advice of counsel (Section 11).

- Authority, compensation, and tenure of trustees (Sections 12-14).

- 1. Trustee compensation
- 2. Successor trustee
- 3. Instructions to trustee

✓ Amendment of agreement (Section 15).

✓ Irrevocability and termination (Section 16).

✓ Immunity and indemnification (Section 17).

✓ Law to govern construction and operation of trust (Section 18).

• Interpretation and severability (Section 19).

- Date (signature block). *no date + signature, but in IP 1*

✓ Signatures (signature block).

✓ Acknowledgements, seals or attestations, if necessary or desired (witness by notary public).

- Acceptance of trust by trustee or trustees (acknowledgment).

*looks like
a copy
of acknowledgements
for license
07-00455-07*

Very *to* *see wording*
Reg Co

EXHIBIT 3-5

De Pont
License
07-00455-02

Standby

CHECKLIST OF CRITERIA FOR REVIEW OF TRUST AGREEMENTS^a

No

- Copy of corporate by-laws or other evidence indicating that parties signing the financial instrument (for the applicant) are authorized to represent the organization in the transaction.

To be verified by Region

Evidence that the financial instrument is an originally signed duplicate (e.g., an executed copy of the instrument).

- Evidence that the financial institution has authority to act as a trustee. *yes, see Directory of Trust Institutions Citibank, N.A.*

✓ Purpose of trust ("whereas" clauses).

1. Description

✓ Grantor or grantors (introductory paragraph).

1. Names
2. Addresses

• Trustee or trustees.

- ✓ 1. Names and addresses *(No address in intro PP, but listed on Cert of Events)*
- ✓ 2. Bank or corporate trustee (introductory paragraph)

✓ Identification of facilities and cost estimates (Section 2).^b

^aAdapted from 17A Am Jur Legal Forms 2d (Re:) §251.94.
^bReferences are to recommended wording for trust agreements provided in Section 4.

EXHIBIT 3-5 (continued)

- ✓ Words of transfer, conveyance, and delivery in trust (Section 3).
- ✓ Payments constituting the trust fund (Section 4).
- ✓ Duration of trust. *until terminated*
- ✓ Description of trust property.

1. Property described in attached schedule (Schedule B)
2. Cash
3. Stock and other securities

it does not specify the L/C #

- ✓ Additions to trust.
- ✓ Distribution of trust principal (Section 5).

- ✓ 1. Disbursement to licensee upon proper certification
- ✓ 2. Payment for activities at NRC's direction in writing
- ✓ 3. Refund to grantor at NRC's specification in writing after completion of decommissioning activities
- ✓ 4. *No w. withdrawal to exceed 10%*

• Trust management (Sections 6-8).

- ✓ 1. Discretionary powers
- ✓ 2. Fiduciary duty
- ✓ 3. Commingling and investment
- ✓ 4. Sale or exchange of trust property
- ✓ 5. Scope of investments
- ✓ 6. Express powers of trustee
7. Borrowing money and encumbering trust assets

• (Optional provisions)

EXHIBIT 3-5 (continued)

- 8. Insurance
- 9. Operation of business
- 10. Compromise of claims

- ✓ Taxes and expenses (Section 9).
- ✓ Annual valuation (Section 10).
- ✓ Advice of counsel (Section 11).
- Authority, compensation, and tenure of trustees (Sections 12-14).

- ✓ 1. Trustee compensation
- ✓ 2. Successor trustee
- ✓ 3. Instructions to trustee

- ✓ Amendment of agreement (Section 15).
- ✓ Irrevocability and termination (Section 16).
- ✓ Immunity and indemnification (Section 17).

✓ Law to govern construction and operation of trust (Section 18). NY

✓ Interpretation and severability (Section 19).

• Date (signature block). *no date*

✓ Signatures (signature block).

✓ Acknowledgements, seals or attestations, if necessary or desired (witness by notary public).

✓ Acceptance of trust by trustee or trustees (acknowledgment).

does not certify signature (implied)

Part of Resolution is different



WASHINGTON, D. C. 20555

DEC 19 1990

E.I. DePont De Nemours & Co., Inc.
Medical Products Department
ATTN: Francis E. Roy, Jr.
331 Treble Cove Road, No.
Billerica, MA 01862

REFUND OF APPLICATION FEE

1. BACKGROUND:

Check Received August 6, 1990
Application Dated July 30, 1990
Check Number 04287512 (\$120)
Check Amount \$240

2. REFUND:

Amount \$240

This refund is now being processed and will be sent as soon as possible.

3. REASON FOR REFUND:

Fee for application dated July 30, 1990, for License No. 20-00320-21 is being refunded in accordance with Information Notice 90-38, Supplement #1.

NOTE: ENCLOSED IS A COPY OF THE MAY 23, 1990 FEDERAL REGISTER NOTICE CONTAINING THE COMMISSION'S REVISED FEE REGULATIONS WHICH WENT INTO EFFECT JULY 2, 1990. IF YOU HAVE ANY QUESTIONS CONCERNING THE FEES TO BE SUBMITTED WITH FUTURE APPLICATIONS, PLEASE CONTACT US AT 301-492-4650.

for 1/1/91
Glenda Jackson, Chief *229, 2/13/90*
Materials License Fee Section
License Fee and Debt Collection Branch
Division of Accounting and Finance
Office of the Controller

Enclosure: May 23, 1990
Federal Register notice



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION I
475 ALLENDALE ROAD
KING OF PRUSSIA, PENNSYLVANIA 19406

NOV 30 1990

MEMORANDUM FOR: Louis M. Bykoski, NRC Project Officer
Low Level Waste Management, Low Level Regulatory Branch

FROM: John D. Kinneman, Chief
Nuclear Materials Safety Section B
Division of Radiation Safety
and Safeguards

SUBJECT: NONSTANDARD FINANCIAL ASSURANCE SUBMITTALS RELATED TO THE
DECOMMISSIONING RULE

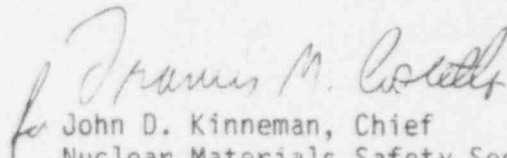
John Austin's August 6, 1990 memorandum set forth a procedure for submitting nonstandard financial assurance submittals to you for review by the NRC contractor. We have also included parent company guarantee's and decommissioning funding plans.

Licensee	License No.	Control No.
Johnson and Johnson Baby Products Company	29-17001-02	113165
Ortho Pharmaceutical Corporation	29-02608-03	113167
Ethicon, Incorporated	29-02786-03	113160
Ethicon, Incorporated	29-02786-06	113161
Janssen Pharmaceutical, Incorporated	29-27950-01	113164
Princeton University	29-05185-24	113478
Afftrex, Limited	37-28329-01	113390
Alaron Corporation	37-20826-01	112969
Displays, Incorporated	37-19629-04	113417
California University of Pennsylvania	37-10470-03	113466
Xenobiotic Labs, Incorporated	29-28053-01	112968
E. I. duPont de Nemours and Company, Incorporated	20-00320-21	113360
Georgetown University Medical Center	08-01709-04	113213
Richardson-Vicks, Incorporated	06-20511-01	113603

Louis M. Bykoski

2

If any of you or the contractors believe any of these cases should more properly be reviewed by the Region, please return them. Some of these cases have obvious, minor deficiencies which we have not attempted to resolve so that we could provide the cases to you promptly.


John D. Kinneman, Chief
Nuclear Materials Safety Section B
Division of Radiation Safety
and Safeguards

cc:

J. Glenn, NMSS
R. Bellamy, RI
S. Villar, RI

*RADIOLOGICAL DECOMMISSIONING
COST ASSESSMENT*

*FOR
E. I. DU PONT DE NEMOURS (INC.)
BOSTON, MASSACHUSETTS*

Submitted to:

*E. I. DU PONT DE NEMOURS, (INC.)
331 Treble Cove Road
North Billerica, MA 08162*

Submitted by:

*Diversified Scientific Services, Inc.
P. O. Box 863
Kingston, Tennessee 37763*

September 19, 1990

OFFICIAL RECORD COPY ML 10

113360

OCT 29 1990

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DOCUMENT REVIEW AND APPROVAL

Prepared by: B. W. Rogers Sept 26, 1990
B. W. (Bill) Rogers Date
Manager of Field Operations

Reviewed by: James T. McVey 9/25/90
James T. McVey Date
Executive Vice President

Approved by: James R. Sims 9/26/90
James R. Sims Date
President

SECTION 1.0
EXECUTIVE SUMMARY

1.1 INTRODUCTION

E.I. du Pont de Nemours & Co. (Inc.), contracted with Diversified Scientific Services, Inc., under Purchase Order Number LLEN53486-0985, to perform a decommissioning cost assessment at the Boston, Massachusetts, research and production facility. The decommissioning cost assessment was limited to those actions necessary to decommission the facility from a radioactive materials perspective. To effectively and completely relinquish its radioactive materials license responsibilities in the future for these facilities, Du Pont must obtain an official release authorization from the U.S. Nuclear Regulatory Commission (NRC). Prior to requesting the NRC to inspect this facility, it will be necessary for radioactively contaminated equipment to be removed or cleaned and the remaining structures decontaminated to NRC guidelines. Diversified Scientific Services, Inc. of Kingston, Tennessee, is recognized as a firm which specializes in decontamination and decommissioning activities and was contracted by Du Pont to perform this decommissioning cost assessment. This assessment is designed to provide Du Pont with cost, feasibility and scheduling data sufficient for future budgetary considerations associated with the decommissioning of the Boston, Massachusetts, research and production facility.

1.2 INSPECTION AND ASSESSMENT FIRM

Diversified Scientific Services, Inc., is a small business incorporated and located in Kingston, Tennessee. Diversified Scientific has previously performed facility decommissioning activities, as well as decommissioning cost assessments and as such is familiar with the quality of performance, method of operations, financial and production considerations, and safety/liability emphasis which must be placed on such activities. Diversified Scientific constantly interacts with the regulating agencies in the nation and is proficient in regulatory interpretation as well as meeting the agency's goals for decommissioning. The professional staff of Diversified Scientific have a combined educational and experience history of over 100 years with these forms of hazardous materials and technologies.

Diversified Scientific realizes the significance of this potential project in the future plans of Du Pont. Consequently, Diversified Scientific focused the attention of its professional staff to provide Du Pont with a professionally sound and accurate assessment.

1.3 DECOMMISSIONING ASSESSMENT OVERVIEW

This decommissioning assessment involves four buildings with one to five floors each. The contamination is primarily tritium and carbon-14 and ranges in amounts from trace quantities to heavy concentrations. Other isotopes which could be encountered during the decommissioning are ^{32}P , ^{125}I , ^{35}S , ^{137}Cs , ^{60}Co , ^{63}Ni , ^{26}Al , ^{226}Ra and ^{51}Cr . Diversified Scientific performed a physical site visit of each building and reviewed available data and records in the preparation of this report for Du Pont. The laboratory and equipment components currently located in these buildings are, for the most part, in good condition and potentially salvageable. However, this cost estimate does not take into account any value that Du Pont may realize from the salvage of these components. This report estimates that only a small percentage of these components, i.e., cabinets, hoods, refrigerators, etc. will have to be designated for radioactive waste disposal. Components not designated as radioactive waste are considered to be cleaned on site for unrestricted release. The estimated total radioactive waste volume for these components after on site volume reduction, is 2,421 cubic feet. The floor space designated as radioactive material use areas remaining after the components are removed was calculated by Diversified Scientific at approximately 144,738 square feet. The facility structures (floors, ceilings, walls, etc.) of the radioactive material use areas were calculated by Diversified Scientific at approximately 463,336 square feet of surface area available for decontamination. Non-destructive and destructive decontamination and/or demolition of the facility structures will result in an estimated radioactive waste volume of 17,553 cubic feet. The Du Pont facilities at Boston, Massachusetts, could be rendered for unrestricted release with an estimated radioactive waste volume of 19,974 cubic feet.

The cost to decommission the Boston, Massachusetts, facility is presented by Diversified Scientific as an estimation based upon 1990 dollars. Diversified Scientific defines within the report the methods and assumptions used in determining these values. A confidence level of 85 percent is placed upon these estimates due to the time and data available for facility review

1.4 SUMMARY

Diversified Scientific presents to the best of its professional ability with the data available, the methods, concerns, waste volumes and costs associated with decommissioning the Du Pont facilities at Boston, Massachusetts. Diversified Scientific is confident that unconditional release of the buildings can be obtained by Du Pont. With proper manloading and management control, the decommissioning effort could be completed in approximately twelve (12) months. The estimated total cost to decommission the Du Pont facility at Boston, Massachusetts, inclusive of waste disposal is estimated at \$5,820,434.00. This decommissioning cost analysis is projected to be accurate within plus or minus 15% and was compiled based on 1990 dollars.

SECTION 2.0
PRELIMINARY REMARKS

2.1 INTRODUCTION

Diversified Scientific Services, Inc., of Kingston, Tennessee, reviewed the Du Pont facilities located in Boston, Massachusetts. This review was conducted with the intent of providing an evaluation and assessment of the facility's current status from a radioactive materials perspective and preparing a cost analysis for the decommissioning and unrestricted release of the facilities. The site inspection of the Du Pont, Boston, Massachusetts, facilities occurred on June 19 and June 20, 1990 by Diversified Scientific professional staff in the presence of Du Pont's professional staff. The Du Pont staff were knowledgeable of the previous uses and current conditions of each building and either provided immediate input to the inspection team's inquiries or obtained relevant data from their co-workers and historical records. The Du Pont staff's cooperation and thoroughness during the inspection tour enabled Diversified Scientific's preparation of this report to reflect as accurately as possible the efforts required to decommission the facility for unrestricted release.

2.2 PRESENT FACILITY STATUS

The Du Pont facilities at Boston, Massachusetts, are located at 549 Albany Street, Boston, Massachusetts. The facilities are bounded on three sides by an urban residential area and on the other side by an industrial area. The site is easily accessible to light vehicles and heavy trucks. Securable areas are present on site for locating and positioning decommissioning support facilities and equipment.

Diversified Scientific toured four buildings, all of which are specifically addressed by this report. The four buildings (Building 100, 120, 123, and 575) are generally described in Figure 2-1 (Page 34). Each building was inspected floor by floor and compared with Du Pont supplied building schematic drawings. Rooms or areas with a low probability for radioactive material contamination such as secretarial or staff offices, general use laboratories and break rooms were not inspected in detail due to time and budgetary constraints placed on this

evaluation and analysis effort. In general, current radioisotope use occurs within properly equipped and designated restricted areas. Three of the four buildings represented in this report are interconnected via walkways. The predominant structure (Building 575) was constructed around the turn of the century and the other two interconnected structures were either acquired or constructed subsequent to that time. The fourth building (Building 120) is a stand-alone structure located directly across a public street from the other three buildings. The Du Pont, Boston facilities reportedly have been used in handling radioactive materials for over 30 years. The primary radioactive material functions for the Boston, Massachusetts site centers around radioactive research compound manufacturing, research and testing.

Structurally, the buildings appear to be well maintained and would lend themselves to conventional decontamination and decommissioning methodologies. Diversified Scientific observed during the site inspection that some surfaces consist of multiple layers or coatings. This situation may require more aggressive sampling or decontamination efforts for those specific areas.

2.3 EXPECTED GOAL

Du Pont plans to continue to utilize the Boston facilities for manufacturing research and development of radioactive research compounds. Therefore this cost estimate is designed to evaluate the real and potentially radiologically affected areas and items in the event that future decommissioning is necessary. The labor, equipment, supplies and other costs which would be incurred to decommission the Boston facilities to an unrestricted use status are depicted herein. This decommissioning cost estimate can be utilized by Du Pont in the preparation of the Decommissioning Funding Plan required by the U.S. Nuclear Regulatory Commission's radioactive materials regulations (Regulatory Guide 3.65). It is advised that reevaluation of the assumptions and data contained in this report be performed annually to maintain this estimate as accurate as feasible. Such changes as:

- a. Increase or decrease in use area (ft²)
- b. Isotopic quantities or types
- c. Physical or chemical forms

- d. Regulatory changes
- e. Improved decommissioning techniques
- f. Radiological incidents
- g. Others

can drastically increase or decrease this cost estimate.

SECTION 3.0
TECHNICAL ASSESSMENT

3.1 INTRODUCTION

This section of the report addresses the specific findings of the site inspection and the resultant interpretations by Diversified Scientific's professional staff. The Diversified Scientific professionals conducting the site assessment possess over fifty (50) years of combined experience in dealing with the types and forms of contamination present at the Boston facilities and have extensive actual experience in facility decontamination and decommissioning. Upon return to the Diversified Scientific offices in Kingston, Tennessee, additional professional staff were involved in, evaluating this decommissioning project.

Throughout the evaluations and preparation of this document Diversified Scientific considered the need to perform as accurate an analysis as possible so Du Pont's future use of the information, contained in this report, would be beneficial in their scheduling, planning, and budgetary considerations. Wherever uncertainties exist due to the limited data available to Diversified Scientific, the assumptions and/or contingencies used are stated. Diversified Scientific used precautionary measures to maintain Du Pont's data and documents as confidential and did not divulge the location or Du Pont's identity to any group outside Diversified Scientific.

3.2 PERMITTING AND INSPECTIONS

The Du Pont facilities in Boston, Massachusetts currently function under the provisions of an NRC license issued by Region I. The site's NRC License Number 20-00320-21 expires on November 30, 1990 but is under timely renewal preparation at the time of this report. This NRC license was issued on November 20, 1985 and incorporated three previous license numbers 20-11868-01, 20-00320-09 and 20-00320-13 through reference of the specific letters and submittals dating back to their inception in 1952. The Billerica, Massachusetts facilities also operate under the provisions of License Number 20-00320-21. The license files revealed:

- a. NRC License Number 20-00320-13 was a major license for the Billerica site and had twenty-one (21) amendments prior to termination.
- b. NRC License Number 20-00320-09 was for the Boston site uses and allowed for 80,000 Ci storage of ^3H at the Billerica site as well as large quantity uses in Boston. This license had sixty-four (64) amendments prior to termination.
- c. NRC License Number 20-11868-01 also involved the Billerica site and had 18 amendments prior to termination.
- d. The current NRC License Number 20-00320-21 has nine (9) amendments, with the most recent being July 18, 1989.
- e. Du Pont also has on file copies of six (6) NRC authorizations for the export of radioactive materials.

Most of the amendments associated with these licenses were for relatively minor changes.

The NRC license allows for large quantities of radionuclides to be on inventory at both sites at any one time (i.e., well over 150,000 curies). The NRC license also allows for the release for disposal of certain isotopes in pre-established maximum concentrations into the air and sewer.

3.2.1 Agency Inspection Synopsis

The inspection reports and the corresponding Du Pont corrective responses were reviewed for the past three years of NRC inspections. During this period, thirty-one (31) inspections, notifications, conferences etc. occurred. The issues involved are summarized below by general categories. It should be noted that only one of these documented issues involved a potential for facility contamination. After closer review, this particular potential issue has been relegated to one of low overall impact with regard to this decommissioning assessment.

- a. Shipment Discrepancies - eleven (11) situations were noted with most involving failure to verify the recipients license status prior to transfer of radioactive materials. The remaining few involved misshipments.
- b. Procedural Shortcomings - nine (9) situations were noted. One of these resulted from a major joint and detailed inspection by the NRC, EPA and State of Massachusetts.
- c. Damaged Sources - two (2) situations were noted. Neither situation resulted in facility contamination.
- d. Personnel Exposures - seven (7) issues were noted with most centering around laboratory handling personnel receiving extremity doses. One series of these personnel exposures (hand contamination) resulted in a monetary fine. No facility contamination is expected as a result of these incidents.
- e. One building at the Boston site (Building 609) was cleaned and released from license control in 1987.
- f. On May 16, 1990 a notation was found in the records concerning a laboratory contamination situation. The other subsequent survey records indicate this situation was rectified.

It should be noted that given the enormous total quantities of isotopes which are prepared, packaged and shipped from these facilities in any given year, that to have only thirty-one (31) incidences or situations of note in three and a half years is an admirable record. The issues depicted in the NRC inspection findings do not appear to pose any significant impact upon the future decommissioning plan. Of these thirty-one issues, only about fifteen percent (15%) occurred at the Boston site.

3.2.2 Facility Incident Records Synopsis

Numerous cross-linked records were reviewed to help identify and fully understand the radiological incidents that may have occurred at the Du Pont, Boston site. These records include: laboratory survey sheets, waste records, film badge and bioassay records, engineering reports, Radioisotope Committee minutes, actual incident reports, etc. As a rule, minor spills were immediately cleaned up and resurveyed. A few incidences or operational trends have occurred in the past which could require more detailed surveying and cleaning efforts during decommissioning are noted below. This synopsis covers the records of an eight (8) year period. No other incidences of note were indicated during the interviews that may have occurred prior to that time. It should also be kept in mind that although the numbers of discharges or spills along with the total millicuries involved may seem high, the actual time span involved could be weeks, months or even years.

- a. Effluent releases as authorized by conditions of the license and regulations have occurred. These discharges take the two routes of air release (exhaust ducts) and sewer releases. Over the last eight years the records indicate that these discharges have not exceeded the regulatory levels. The discharges, due to the very nature of the chemical or mechanical procedures being used, have at times amounted to several millicurie amounts per unit time. The release trend, to date, appears to be leveling off to declining and the isotopes of predominance are primarily ^3H and ^{14}C . Due to the modes of operation at the site where releases occur it must be assumed that all duct work, exhaust equipment, plumbing lines, sinks, etc. associated with these labs will require detailed surveys and possible removal. Laboratories particularly located in Building 575 and more specifically labs 572, 80-105, 020, 070, 080, and 160 are suspect for heavy cleaning activities.
- b. The records revealed some potential for vacuum line involvement. Since some of these radiochemicals are volatile in nature, care should be exercised with regard to the vacuum system.
- c. Spills of larger magnitude were noted for:

DATE	LABORATORY	AMOUNT	ISOTOPE
01/11/83	80	50 mCi	³ H
01/14/83	Custom Synthesis	20 mCi	¹⁴ C
07/11/83	80	500 mCi	³ H
07/11/83	105	15 mCi	³ H
08/30/83	575-4-020	15 mCi	³ H
12/21/83	525	187 mCi	³ H
04/10/84	525	16 mCi	³ H
05/01/84	575-5-5	4 Ci	³ H
06/19/84	575-3-5	30 mCi	³ H
08/27/87	80	2 Ci	³ H
05/18/88	100	1.74 Ci	³ H
05/26/88	80	70 mCi	³ H
07/19/88	572	30 mCi	¹⁴ C
01/03/89	30	40 mCi	¹⁴ C
07/25/89	515-525	500 mCi	³ H

Most of these spills occurred on the floor or in hoods and based upon subsequent area survey sheets, these spills were cleaned up. It should also be noted that this information was further verified from "Action Level Reviews: (incident reports) and Radioisotope Committee minutes. It is Diversified Scientific's opinion that the amounts noted in these reports are the amounts involved and not necessarily the actual amount spilled. Due to the physical or natural propensity of some of the tagged compounds to rapidly interact with some of the materials of construction it should be considered that high involvement surfaces such as floors will become waste.

- d. It was mentioned in one of the interviews that two events occurred which involved water leakage between some of the floors. Specifically, in 1980 in Building 575, a plumbing leak occurred and in 1985 a rainwater leak occurred through the roof. It does not appear that the passage of the water from floor to floor resulted in any substantial relocation nor deposition of contamination. The subsequent survey sheets support this opinion, however, upon decommissioning the surveys should reverify the condition.

No other major incidents were noted in the historic records which might present any unusually cumbersome cleaning problems. In relationship to the quantities of radioactive materials used at the facility, the procedures, controls and professional abilities at the site have appeared to prevent mishaps.

3.2.3 Health Physics Surveys and Monitoring

The radioactive materials use areas are surveyed by the Du Pont Health Physics staff for surface contamination on a regular schedule. Depending on the isotope and quantities used, these survey frequencies range from weekly to monthly. Each laboratory is charged with the responsibility of maintaining a clean area and performing their own surveys as needed.

The health physics audit reports and their independent surveys were reviewed for the past two years. These records revealed that only occasional slight amounts of surface contamination were found in a relatively small percentage of the inspections. No unusual locations nor amounts were noted. Typically, counter tops, floors, fume hoods and refrigerator doors were involved. Due to the internally established guideline of using only health physics controlled disposal resources, no pronounced contamination of individual sinks was noted. Any hot spots were noted to the individual laboratory personnel for proper clean up and future avoidance. Those areas utilizing higher energy beta or the gamma emitters also had dose rate surveys performed to help detect and control potential contamination. No unusually high dose rates were noted in the area surveys.

The additional data associated with effluent discharge (i.e., stack monitoring, personnel monitoring, etc.) did not reveal any unusual events.

3.2.4 Disposal Records Synopsis

The license issued to Du Pont, allows for a variety of waste disposal options. These include:

- a. Decay-in-storage for solid waste disposal
- b. Disposal at outside facilities such as Barnwell, South Carolina, or Richland, Washington
- c. Disposal to the sanitary sewer, and
- d. Disposal to the air via stack exhaust.

Extensive records were reviewed dating back to 1986 with regard to waste disposal and discharges. The largest proportions of wastes were packaged and sent off-site to commercial disposal sites. From 1986 through 1990 the amounts of isotopes disposed by sanitary sewer releases averaged 3902.6 mCi per year. Of this amount, tritium releases to the sewer averaged 3671.4 mCi, ^{14}C averaged 172.3 mCi and other short lived isotopes accounted for the remaining 58.9 mCi per year. With the typical quantities of water released from the site in connection with these isotopes, the releases should not exceed the regulatory parameters. The current license provides for releases to the sanitary sewer in substantially larger amounts than are currently being performed by Du Pont. These discharge limits are 12 Curies for ^3H , 1 Curie for ^{14}C and 1 Curie total of all other isotopes in any twelve (12) consecutive months. Air discharges at the site reportedly accounts for 172.8 Ci per year on an average. Of this amount, tritium releases averaged 142.2 Ci, ^{14}C averaged 30.2 Ci and other short lived isotopes averaged 0.4 Ci per year. A review of these release records also indicated that the releases were in accordance with regulatory limits and were only a small fractional percent of the allowed MPC values.

Upon commencement of decommissioning of these facilities it would be normal and required for the firm performing any activities in these buildings to do so in accordance with all applicable NRC guidelines and the Du Pont license criteria. Work tasks should be conducted

in a fashion which would not release the isotopes in concentrations greater than allowed nor should any task result in the uncontrolled release of contamination to unrestricted areas. With proper interfacing and quality control of the contractor by Du Pont, the decommissioning tasks will be assured of compliance with applicable regulatory requirements. Regulatory inspections should result with a satisfactory outcome.

Decontamination and decommissioning tasks are carried out under the NRC Radioactive Material License in accordance with an approved decommissioning plan. Du Pont, would remain classified as the generator of the radioactive wastes resulting from decommissioning these facilities. Therefore, the permits, contracts and approvals currently in place for the specific burial sites would have to remain in effect in order to ensure the proper disposal of the radioactive wastes resulting from decommissioning these facilities. Currently, Du Pont can bury wastes at Richland, Washington, and Barnwell, South Carolina.

3.3 HEALTH AND SAFETY

3.3.1 Structural

The decommissioning of the Du Pont facilities at Boston, Massachusetts, will involve the physical removal of some structural components within the buildings. This may include flooring, wall surfaces, entire walls, ceiling material, ducts, plumbing, and electrical components. The contractor must have an understanding of industrial safety concerns and also understand the methodologies required to contain the potential spread of contamination. The contractor must also be knowledgeable in the various decontamination techniques of preference so the health and safety concerns for eye protection, respiratory protection, falls, barriers, head and foot protection, and radioisotope uptake are properly addressed. After review of the facility drawings, it is not anticipated that any major structural alterations will occur to the point of hindering the safety or useability of the buildings. The contractor must be familiar with 29 CFR (OSHA) requirements.

3.3.2 Chemicals

During the site visit, small quantities of chemicals were observed in the laboratories. Prior experience with decommissioning activities indicates that unsuspected hazardous substances may be uncovered as residues under and behind removed items or as forgotten stock supplies. The decontamination activities may also involve some hazardous materials or wastes by themselves. Therefore, the contractor should be knowledgeable in the requirements of proper identification, use, storage and disposal of such materials. The contractor should be cognizant of the Hazard Communication requirements (Right to Know Laws) as well as 40 CFR Regulations for EPA - RCRA, TSCA. Extra efforts should be taken by Du Pont to eliminate these chemical hazards prior to the radioactive materials decommissioning.

3.3.3 Biologicals

The potential exists for a few of the laboratories to contain biologically hazardous materials. These biologically hazardous materials could be radioactively tagged or be present in the laboratories for other purposes. During the facility's decommissioning these materials would need to be identified to the contractor to enable their safe removal, neutralization and disposal. Special personnel protective equipment, containments and procedures may be required.

3.3.4 Asbestos

Some asbestos-containing materials were observed by the inspection team during the site visit. This material was noticed in flooring, pipe insulation and other products such as fume hoods. The quantity of asbestos materials was relatively small and could be easily dealt with by a contractor aware of its characteristics and presence and the necessary precautions. The contractor selected for this project must possess the necessary training in accordance with Federal and State regulations to deal with the asbestos-containing materials. The radiological cross contamination of the asbestos may impose handling precautions which meet or exceed those for routine asbestos removal. However, the specific asbestos monitoring, notifications, packaging, training, containment etc. must be adhered to.

3.3.5 Health and Safety Plan

The contractor should supply to Du Pont, a comprehensive Health and Safety Plan which details the protective measures and responsibilities to protect the health and well being of the worker, public, environment, and facilities. This plan should address among other issues:

- a. Exposure control and recording
- b. Respiratory protection
- c. Protective devices and measures
- d. Emergency contingencies and procedures
- e. Monitoring, surveying and analysis
- f. Industrial Safety
- g. Training
- h. Record keeping, etc.

Du Pont's experience with radioactive materials has also allowed the evolution of in-house documents and procedures. These comprehensive guidelines should be coordinated by the contractor into the decommissioning plan of action.

3.3.6 Fire Protection

Some mechanical and torch cutting operations may be required to allow removal of contaminated items. In addition, to obtain maximum waste volume reduction, the contractor will have to size reduce metallic items such as laboratory benches and hoods. Size reduction could be performed at the site of actual component removal or more likely at a centralized waste packaging area. During these activities the contractor should recognize and address the need for fire protection equipment, fire watches and trained personnel. In addition to the installed sprinklers, fire watches should have hand held fire extinguishers available when cutting and burning is being performed.

3.3.7 Personnel Exposure

The majority of the contamination will be ^3H and ^{14}C . Therefore, the likelihood of direct whole body or extremity exposures to penetrating radiation will be low. A few areas were identified as possessing isotopes with penetrating emissions. The areas utilized for ^{32}P , ^{51}Cr and ^{125}I isotopes could be properly scheduled to take advantage of radioactive decay.

Proper use of engineered systems and safeguards such as containment structures with step off pads, as well as, filtered and localized ventilation devices would help protect against the more volatile material. The most likely personnel exposure potential could result from biological uptake of the ^3H and ^{14}C . The contractor must be prepared to conduct a personnel bioassay program. The biological half life of tritium is relatively short and can be shortened by promoting excretion. Proper utilization of respiratory protective devices where particulate or vaporous substances will be encountered will ensure personnel uptakes are as low as reasonably achievable. Continuous Air Monitors (CAMS) should be utilized when it is likely that airborne radioactivity will be present. Jobs which involve cutting and burning or abrasive decontamination techniques are examples of tasks which will warrant the use of CAMS and potential use of respiratory protection.

3.4 DECOMMISSIONING PLAN

The NRC's Regulatory Guide 3.65, issued August 1989, titled "Standard Format and Content of Decommissioning Plans for Licensees Under 10 CFR Parts 30, 40 and 70" requires a decommissioning plan be submitted to, and approved by the NRC prior to initiating decommissioning activities for license termination.

The minimum contents of the decommissioning plan are specified as follows:

- a. General Information - requires the licensee to submit a plan with a schedule for completion of decommissioning and prepare procedures if the procedures necessary to carry out the decommissioning have not been previously approved by the NRC and could increase potential health and safety impacts to workers or the public.

- b. Description of Planned Decommissioning Activities - describes decommissioning objectives, tasks, schedule, and the decommissioning organization and responsibility; details required training; and specifies what contractor assistance will be used.
- c. Description of Methods used for Protection of Occupational and Public Health and Safety - provides a radiological history of the facility; specifies how occupational radiation exposures are to be maintained As Low As Reasonably Achievable (ALARA); describes the Health Physics program; describes the radiation protection policies to ensure the safety of contractor personnel; describes the processes and systems for the handling, storing and disposing of radioactive waste.
- d. Planned Final Survey - describes the plan for demonstrating the plant and site will meet the criteria for unrestricted release as specified in the decommissioning plan and regulations.
- e. Funding - requires an updated cost estimate for decommissioning, comparison of that estimate with present funds set aside for decommissioning, and a plan for assuring the availability of adequate funds for completion of decommissioning.
- f. Physical Security Plan and Materials Control and Accounting Plan Provisions in Place During Decommissioning - requires a description of and a schedule for any proposed changes to the NRC approved physical security plan and special nuclear materials controls and accounting plan, if applicable.

3.5 DECONTAMINATION AND DECOMMISSIONING ASSESSMENT

3.5.1 Structural

For purposes of this report, structural materials are defined as floors, ceilings, walls, studs, roof materials, exhaust ducting, etc. that are an integral part of the building structure. Most structural surfaces within the four buildings will be suitable for non-destructive decontamination techniques. This could include solvent cleaning, HEPA vacuuming, wet

wiping and steam cleaning. Non-destructive decontamination techniques and release surveys will be useful where the contaminants have not migrated deep into the structural materials. These techniques will result in the lowest volume of radioactive waste. Aggressive decontamination techniques will be useful where the radioactive contamination has come in contact with porous surfaces, such as wood, flooring, walls or studs. Where slight penetration has resulted, it is expected that aggressive decontamination techniques such as scarifying or abrasive cleaning will be the preferred method of decontamination. Other decontamination techniques could involve the removal of floor tiles, flooring, ceiling panels and plaster board. The quantities of waste depicted in Section 4.0 are predicated upon the use of the general techniques described above.

The Diversified Scientific staff (including civil engineers, decommissioning specialist, and health physicist) reviewed the inspection data, the Du Pont supplied data and the facility drawings. For estimating purposes, Diversified Scientific evaluated each of the four buildings on a floor by floor basis and each isotopic use area on each floor. Based on the reported isotope use, one or more of the above techniques were theoretically applied to all surfaces. The resultant levels of effort, man loading, waste volumes, schedules, equipment lists and costs reflect Diversified Scientific's best cost estimate to perform this decommissioning project (see Section 5.0). In general the laboratories consisted of a large room with base and island cabinets along the sides and down the center or as laboratory dividers, wall hung cabinets, multiple fume hoods and one or more adjoining rooms used for other laboratory processes.

3.5.2 Installed Components

The buildings are currently in use by Du Pont and therefore contain the supplies, items and equipment necessary for radioactively tagged compound production and utilization. Installed components are defined as fume hoods, laboratory base and island cabinets, refrigerators, freezers, centrifuges, custom lucite boxes and air conditioners. Each room that was reviewed in each building was unique in nature and contained a variety of the above installed components. In general most laboratories contained one to two refrigerators, fume hoods, lucite boxes and general laboratory supplies and chemicals.

Diversified Scientific has considered several possible disposal options with regard to these installed components. Most of the items are obviously in good condition and suitable for minor cleaning. Du Pont could potentially offset a portion, of the decommissioning cost through the salvage of clean, usable installed components. NRC guidelines and historic precedence allows for the reuse of such clean components. Resource recovery, waste minimization and economic incentives should dictate the documented release and reuse of cleaned items.

3.5.3 Containment

Each of the buildings appears to lend itself to easy control for contamination containment. Containment could be either by groups of rooms, by individual room or by floor. Personnel entrance and egress should be established at each laboratory or containment entrance by the use of step off pads to prevent the unnecessary spread of contamination. As the decommissioning tasks begin, each floor of each building could be isolated with physical barriers to prevent cross contamination or releases. Specially constructed containments may be required when removing components from the roof or the roof material itself. These containments could be portable with an associated filtered ventilation system. Reusable containments will minimize radioactive waste generation.

3.5.4 Monitoring and Surveys

The installed monitoring devices and radiological analysis equipment currently utilized for these buildings should be continued in use during the decommissioning project, where possible. A laboratory, in each building, or a central laboratory could be set up for the purpose of performing analysis during the decommissioning. With proper procedural controls and engineered safeguards, Du Pont, and the NRC effluent release guidelines should not be exceeded. Monitors, including working environment CAMS and exhaust CAMS should remain in place wherever possible. Personnel air samples may be advisable or necessary in some work conditions.

The radiological surveys to enable unrestricted release of the buildings will be a significant labor effort. Smears of surfaces and items will be the most useful and accurate methodology. Therefore, the contractor must be proficient in liquid scintillation counting techniques. Chemiluminescence and phosphorescence in liquid scintillation counting may also be encountered and could produce erroneous radiological data if not recognized and accounted for. Counting techniques and quality controls must be established to insure the consistency and statistical accuracy of the samples. Based upon Diversified Scientific's previous experiences with unknowns, all radiation use areas should be surveyed by direct portable monitoring equipment for potential beta-gamma contaminants. In areas known to use beta-gamma emitting isotopes more comprehensive beta-gamma surveys will be performed. The frequency for smear surveys in high use areas will be at least one smear per each square meter of surface area while low use areas can have less smears analyzed. Core samples and scrapings would also occur to document the condition of remaining structures. After decontamination, areas that indicate the presence of contaminants above the release levels should have additional decontamination and more comprehensive surveys performed. It is advised that the contractor establish a separate QA/QC team of surveyors to perform independent spot surveys to further verify the release data.

The building release criteria would need to be established by and with the regulating agencies prior to initiation of the Decommissioning Project. Du Pont's standard practice appears to address contaminants greater than background to be significant and detrimental to the laboratory experiments being performed. Such expectations of cleaning this facility to a uniform background level is unrealistic, unattainable and not normally expected by the regulating agencies. Cleaning to as low as reasonably achievable is the preferred and common practice. The NRC published and historically acceptable levels for unrestricted release of facilities and items is found in "Guidelines for Decontamination of Facilities and Equipment Prior to Release for Unrestricted Use or Termination of Licenses for Byproduct, Source, or Special Nuclear Material" dated June 1980. These acceptable levels are:

ACCEPTABLE SURFACE CONTAMINATION LEVELS

Nuclide	Average	Maximum	Removable
U-nat, U-235, U-238, and associated decay products	5,000 dpm α /100 cm ²	15,000 dpm α /100 cm ²	1,000 dpm α /100 cm ²
Transuranics, Ra-226, Ra-228, Th-230, Th-228, Pa-231, Ac-227, I-125, I-129	100 dpm/100 cm ²	300 dpm/100 cm ²	20 dpm/100 cm ²
Th-nat, Th-232, Sr-90, Ra-223, Ra-224, U-232, I-126, I-131, I-133	1000 dpm/100 cm ²	3000 dpm/100 cm ²	200 dpm/100 cm ²
Beta-gamma emitters (nuclide with decay modes other than alpha emission or spontaneous fission) except Sr-90 and others noted above.	5000 dpm $\beta\gamma$ /100 cm ²	15,000 dpm $\beta\gamma$ /100 cm ²	1000 dpm $\beta\gamma$ /100 cm ²

Regulatory precedence has also been set to support release of items and areas with less than 100 percent surveys. Such use of statistically applied surveying techniques may be considered by Du Pont as a potential cost saving tool. These statistically applied surveying techniques should be specified in the decommissioning plan. However, long term liability should be reviewed as well as the NRC's acceptance of these techniques.

Records of all radiological surveys should be maintained to verify cleanliness and to assist in the final release of the buildings by the NRC. The contractor should also participate during the NRC release inspection to answer questions and perform minor touch ups as necessary. A QA/QC program should be established for control and custody of samples, smears and data to insure records accuracy.

3.6 DECOMMISSIONING REPORT

The Contractor performing the decontamination and decommissioning project should provide Du Pont with a report in sufficient detail to allow Du Pont to request a final NRC inspection and a release from the license. The report should contain:

- a. General Information - describes the site location and license information.

- b. Description of Decommissioning Activities - describes the decommissioning objective; the tasks performed; radioactive sampling methodology; decontamination procedures; and the decommissioning organization and responsibilities.
- c. Protection of Occupational and Public Health and Safety - describes how contamination control was performed during decommission; how occupational exposures were maintained ALARA; and how releases of radioactivity to the environment were minimized.
- d. Radioactive Waste Management - describes how radioactive waste was treated i.e., liquid waste processing, dry active waste processing (DAW); describes waste packaging, shipping and disposal.
- e. Final Survey Results - the report should contain copies of the final surveys which details the survey location; the dose rate and the loose surface contamination survey results; the technician who performed the surveys; the date the surveys were performed.

3.3.7 Personnel Exposure

The majority of the contamination will be ^3H and ^{14}C . Therefore, the likelihood of direct whole body or extremity exposures to penetrating radiation will be low. Irradiators or sealed sources are potential sources of personnel exposure. Diversified Scientific has considered these sources as potentially salvage items which will have been removed early in the process. A few areas were identified as possessing isotopes with penetrating emissions. The areas utilized for ^{32}P , ^{51}Cr and ^{125}I isotopes could be properly schedule to take advantage of radioactive decay.

Proper use of engineered systems and safeguards such as containment structures with step off pads, filtered and localized ventilation devices would help protect against the more volatile material. The most likely personnel exposure potential could result from biological uptake of the ^3H and ^{14}C . The contractor must be prepared to conduct a personnel bioassay program. The biological half life of tritium is relatively short and can be shortened by promoting excretion. Proper utilization of respiratory protective devices where particulate or vaporous substances will be encountered will help maintain personnel uptakes as low as reasonably achievable. Continuous Air Monitors (CAMS) should be utilized when it is likely that airborne radioactivity will be present. Jobs which involve cutting and burning or abrasive decontamination techniques are examples of tasks which will warrant the use of CAMS and potential use of respiratory protection.

3.4 DECOMMISSIONING PLAN

The NRC's Regulatory Guide 3.65, issued August 1989, titled "Standard Format and Content of Decommissioning Plans for Licensees Under 10 CFR Parts 30, 40 and 70" requires a decommissioning plan be submitted to, and approved by the NRC prior to initiating decommissioning activities for license termination.

The minimum contents of the decommissioning plan are specified as follows:

- a. General Information - requires the licensee to submit a plan with a schedule for completion of decommissioning and prepare procedures if the procedures necessary to carry out the decommissioning have not been previously approved by the NRC and could increase potential health and safety impacts to workers or the public.
- b. Description of Planned Decommissioning Activities - describes decommissioning objectives, tasks, schedule, and the decommissioning organization and responsibility; details required training; and specifies what contractor assistance will be used.
- c. Description of Methods used for Protection of Occupational and Public Health and Safety - provides a radiological history of the facility; specifies how occupational radiation exposures are to be maintained As Low As Reasonably Achievable (ALARA); describes the Health Physics program; describes the radiation protection policies to ensure the safety of contractor personnel; describes the processes and systems for the handling, storing and disposing of radioactive waste.
- d. Planned Final Survey - describes the plan for demonstrating the plant and site will meet the criteria for unrestricted release as specified in the decommissioning plan and regulations.
- e. Funding - requires an updated cost estimate for decommissioning, comparison of that estimate with present funds set aside for decommissioning, and a plan for assuring the availability of adequate funds for completion of decommissioning.
- f. Physical Security Plan and Materials Control and Accounting Plan Provisions in Place During Decommissioning - requires a description of and a schedule for any proposed changes to the NRC approved physical security plan and special nuclear materials controls and accounting plan, if applicable.

3.5 DECONTAMINATION AND DECOMMISSIONING ASSESSMENT

3.5.1 Structural

For purposes of this report, structural materials are defined as floors, ceilings, walls, studs, roof materials, exhaust ducting, etc. that are an integral part of the building structure. Most structural surfaces within the four buildings will be suitable for non-destructive decontamination techniques. This could include solvent cleaning, HEPA vacuuming, wet wiping and steam cleaning. Non-destructive decontamination techniques and release surveys will be useful where the contaminants have not migrated deep into the structural materials. These techniques will result in the lowest volume of radioactive waste. Aggressive decontamination techniques will be useful where the radioactive contamination has come in contact with porous surfaces, such as wood, flooring, walls or studs. Where slight penetration has resulted, it is expected that aggressive decontamination techniques such as scarifying or abrasive cleaning will be the preferred method of decontamination. Other decontamination techniques could involve the removal of floor tiles, flooring, ceiling panels and plaster board. The quantities of waste depicted in Section 4.0 are predicated upon the use of the general techniques described above.

The Diversified Scientific staff (including civil engineers, decommissioning specialist, and health physicist) reviewed the inspection data, the Du Pont supplied data and the facility drawings. For estimating purposes, Diversified Scientific evaluated each of the four buildings on a floor by floor basis and each isotopic use area on each floor. Based on the reported isotope use, one or more of the above techniques were theoretically applied to all surfaces. The resultant levels of effort, man loading, waste volumes, schedules, equipment lists and costs reflect Diversified Scientific's best cost estimate to perform this decommissioning project (see Section 5.0). In general the laboratories consisted of a large room with base and island cabinets along the sides and down the center or as laboratory dividers, wall hung cabinets, multiple fume hoods and one or more adjoining rooms used for other laboratory processes.

3.5.2 Installed Components

The buildings are currently in use by Du Pont and therefore contain the supplies, items and equipment necessary for radioactively tagged compound production and utilization. Installed components are defined as fume hoods, laboratory base and island cabinets, refrigerators, freezers, centrifuges, custom lucite boxes and air conditioners. Each room that was reviewed in each building was unique in nature and contained a variety of the above installed components. In general most laboratories contained one to two refrigerators, fume hoods, lucite boxes and general laboratory supplies and chemicals.

Diversified Scientific has considered several possible disposal options with regard to these installed components. Most of the items are obviously in good condition and suitable for minor cleaning. Du Pont could potentially offset a portion, of the decommissioning cost through the salvage of clean, usable installed components. NRC guidelines and historic precedence allows for the reuse of such clean components. Resource recovery, waste minimization and economic incentives should dictate the documented release and reuse of cleaned items.

3.5.3 Containment

Each of the buildings appears to lend itself to easy control for contamination containment. Containment could be either by groups of rooms, by individual room or by floor. Personnel entrance and egress should be established at each laboratory or containment entrance by the use of step off pads to prevent the unnecessary spread of contamination. As the decommissioning tasks begin, each floor of each building could be isolated with physical barriers to prevent cross contamination or releases. Specially constructed containments may be required when removing components from the roof or the roof material itself. These containments could be portable with an associated filtered ventilation system. Reusable containments will minimize radioactive waste generation.

3.5.4 Monitoring and Surveys

The installed monitoring devices and radiological analysis equipment currently utilized for these buildings should be continued in use during the decommissioning project, where possible. A laboratory, in each building, or a central laboratory could be set up for the purpose of performing analysis during the decommissioning. With proper procedural controls and engineered safeguards, Du Pont, and the NRC effluent release guidelines should not be exceeded. Monitors, including working environment CAMS and exhaust CAMS should remain in place wherever possible. Personnel air samples may be advisable or necessary in some work conditions.

The radiological surveys to enable unrestricted release of the buildings will be a significant labor effort. Smears of surfaces and items will be the most useful and accurate methodology. Therefore, the contractor must be proficient in liquid scintillation counting techniques. Chemiluminescence and phosphorescence in liquid scintillation counting may also be encountered and could produce erroneous radiological data if not recognized and accounted for. Counting techniques and quality controls must be established to insure the consistency and statistical accuracy of the samples. Based upon Diversified Scientific's previous experiences with unknowns, all radiation use areas should be surveyed by direct portable monitoring equipment for potential beta-gamma contaminants. In areas known to use beta-gamma emitting isotopes more comprehensive beta-gamma surveys will be performed. The frequency for smear surveys in high use areas will be at least one smear per each square meter of surface area while low use areas can have less smears analyzed. Core samples and scrapings would also occur to document the condition of remaining structures. After decontamination, areas that indicate the presence of contaminants above the release levels should have additional decontamination and more comprehensive surveys performed. It is advised that the contractor establish a separate QA/QC team of surveyors to perform independent spot surveys to further verify the release data.

The building release criteria would need to be established by and with the regulating agencies prior to initiation of the Decommissioning Project. Du Pont's standard practice appears to address contaminants greater than background to be significant and detrimental to the

laboratory experiments being performed. Such expectations of cleaning this facility to a uniform background level is unrealistic, unattainable and not normally expected by the regulating agencies. Cleaning to as low as reasonably achievable is the preferred and common practice. The NRC published and historically acceptable levels for unrestricted release of facilities and items is found in "Guidelines for Decontamination of Facilities and Equipment Prior to Release for Unrestricted Use or Termination of Licenses for Byproduct, Source, or Special Nuclear Material" dated June 1980. These acceptable levels are:

ACCEPTABLE SURFACE CONTAMINATION LEVELS

Nuclide	Average	Maximum	Removable
U-nat, U-235, U-238, and associated decay products	5,000 dpm α /100 cm ²	15,000 dpm α /100 cm ²	1,000 dpm α /100 cm ²
Transuranics, Ra-226, Ra-228, Th-230, Th-228, Pa-231, Ac-227, I-125, I-129	100 dpm/100 cm ²	300 dpm/100 cm ²	20 dpm/100 cm ²
Th-nat, Th-232, Sr-90, Ra-223, Ra-224, U-232, I-126, I-131, I-133	1000 dpm/100 cm ²	3000 dpm/100 cm ²	200 dpm/100 cm ²
Beta-gamma emitters (nuclide with decay modes other than alpha emission or spontaneous fission) except Sr-90 and others noted above.	5000 dpm $\beta\gamma$ /100 cm ²	15,000 dpm $\beta\gamma$ /100 cm ²	1000 dpm $\beta\gamma$ /100 cm ²

Regulatory precedence has also been set to support release of items and areas with less than 100 percent surveys. Such use of statistically applied surveying techniques may be considered by Du Pont as a potential cost saving tool. These statistically applied surveying techniques should be specified in the decommissioning plan. However, long term liability should be reviewed as well as the NRC's acceptance of these techniques.

Records of all radiological surveys should be maintained to verify cleanliness and to assist in the final release of the buildings by the NRC. The contractor should also participate during the NRC release inspection to answer questions and perform minor touch ups as necessary. A QA/QC program should be established for control and custody of samples, smears and data to insure records accuracy.

3.6 DECOMMISSIONING REPORT

The Contractor performing the decontamination and decommissioning project should provide Du Pont with a report in sufficient detail to allow Du Pont to request a final NRC inspection and a release from the license. The report should contain:

- a. General Information - describes the site location and license information.
- b. Description of Decommissioning Activities - describes the decommissioning objective; the tasks performed; radioactive sampling methodology; decontamination procedures; and the decommissioning organization and responsibilities.
- c. Protection of Occupational and Public Health and Safety - describes how contamination control was performed during decommission; how occupational exposures were maintained ALARA; and how releases of radioactivity to the environment were minimized.
- d. Radioactive Waste Management - describes how radioactive waste was treated i.e., liquid waste processing, dry active waste processing (DAW); describes waste packaging, shipping and disposal.
- e. Final Survey Results - the report should contain copies of the final surveys which details the survey location; the dose rate and the loose surface contamination survey results; the technician who performed the surveys; the date the surveys were performed.

SECTION 4.0
WASTE VOLUME ESTIMATES

4.1 INTRODUCTION

The radioactive waste volume estimates contained in this section are based on the findings of the technical assessment (See Section 3.0) and Diversified Scientific's professional experience relative to estimating waste volumes for other decommissioning projects of similar complexity and magnitude. Diversified Scientific implemented conventional estimating procedures that would be used for bidding a job of this nature as a fixed-price project. Detailed radiological analyses on every floor of every building were not completed within the scope of this technical assessment. Instead, representative verification type samples and smears were compared with the historical data. Therefore, the volume estimates are based on the radiological data that was available at the time of the walk-through inspection. Diversified Scientific believes the waste volume estimates contained herein are accurate within a fifteen percent (15%) percent margin of error.

4.2 ASSUMPTIONS

Radioactive waste resulting from the decommissioning effort was divided into two categories: structural materials and installed components. Structural materials are defined as materials such as floors, ceilings, wall studs, exhaust ducting, roof material, etc. that are an integral part of the building structure. Installed components are defined as fume hoods, laboratory base and island cabinets, refrigerators, centrifuges, freezers, custom lucite boxes, and air conditioners.

The radioactive waste volume estimates of structural material for all radioactive materials designated laboratories at the Boston facility were based on the following assumptions:

- a. Building 100 - 75% of the floor area will be removed to a depth of 1/4" and will require disposal as radioactive waste; 5% of the wall surfaces will be removed to a depth of 1/2" and will require disposal as radioactive waste; 75% of the dropped

ceiling material will require disposal as radioactive material; 25% of the fume hood ducting will require disposal as radioactive waste; 1% of the roof material will be removed to a depth of 1" and will be disposed of as radioactive waste; all other structural material will be cleaned in place and surveyed for release.

- b. Building 120 - 50% of the floor area will be removed to a depth of 1/4" and will require disposal as radioactive waste; 10% of the wall surfaces will be removed to a depth of 1/2" and will require disposal as radioactive waste; 75% of the dropped ceiling material will require disposal as radioactive material; 25% of the fume hood ducting will require disposal as radioactive waste; 1% of the roof material will be removed to a depth of 1" and will be disposed of as radioactive waste; all other structural material will be cleaned in place and surveyed for release.
- c. Building 123 - 10% of the floor area will be removed to a depth of 1/4" and will require disposal as radioactive waste; no walls will require disposal; 10% of the dropped ceiling material will require disposal as radioactive material; 25% of the fume hood ducting will be disposed of as radioactive waste; 1% of the roof material will be removed to a depth of 1" and will be disposed of as radioactive waste; all other structural material will be cleaned in place and surveyed for release.
- d. Building 575 - 100% of the floor area will be removed to a depth of 3 inches and will require disposal as radioactive waste; 40% of the wall surfaces will be removed to a depth of 1/2" and will require disposal as radioactive waste; 25% of the fume hood ducting will be disposed of as radioactive waste; 1% of the roof material will be removed to a depth of 1" and will be disposed of as radioactive waste; all other structural material will be cleaned in place and surveyed for release.

The radioactive waste volume estimates for the installed components for all radioactive materials designated laboratories at the Boston facility were based on the following assumptions:

- a. Building 100, 200, 123, and 575 - 2% of all refrigerators will require disposal as radioactive waste; 1% of wall hung, base and island cabinets will require disposal as radioactive waste; 25% of fume hoods will require disposal as radioactive waste; 1% of all centrifuges will be disposed of as radioactive waste. Installed components designated as radioactive waste will be volume reduced by 50%. All of the remaining components will be cleaned and surveyed for release.

4.3 RADIOACTIVE WASTE VOLUME ESTIMATES - STRUCTURAL MATERIALS

The radioactive waste volume estimates for structural materials were derived based on the assumptions contained in Section 4.2. Based on these assumptions, there will be 17,553 cubic feet of structural material classified as radioactive waste. Figure 4-1 (Page 35) details the radioactive waste volume of structural materials by building.

4.4 RADIOACTIVE WASTE VOLUME ESTIMATES - INSTALLED COMPONENTS

The radioactive waste volume estimates for installed components were derived based on the assumptions contained in Section 4.2. The waste volume estimate after on site volume reduction of the installed components is 2,421 cubic feet of radioactive waste. Figure 4-2 (Page 36) details the radioactive waste volume of installed components by building.

4.5 RADIOACTIVE WASTE VOLUME ESTIMATE SUMMARY

The radioactive waste volumes discussed in Section 4.3 and 4.4 are summarized in Figure 4-3 (Page 37). The total radioactive waste volume for decommissioning the Du Pont, Boston Massachusetts, facility is estimated to be 19,974 cubic feet.

SECTION 5.0
COST ANALYSIS

5.1 INTRODUCTION

The cost analysis contained in this section is based on the findings of the technical assessment (See Section 3.0), the waste volume estimates (see Section 4.0) and Diversified Scientific's professional experience relative to costs associated with other decommissioning projects of similar complexity and magnitude. Estimates of manhours, equipment, materials, and procured services are based on conventional estimating procedures currently employed by Diversified Scientific and the industry in bidding projects of this type.

The cost analysis was approached as if the project was being completed as a fixed-price, turn-key procurement. The cost analysis does not factor in contingencies that most companies normally add to the estimated cost of a fixed price procurement. This contingency factor could be an additional 35 percent of the estimated cost or greater. Diversified Scientific believes the cost analysis presented in this report to be accurate within a 15 percent margin of error.

5.2 ASSUMPTIONS

The following assumptions were used in the compilation of this cost analysis:

- a. Decommissioning activities for the four buildings will run consecutively without a time lag between buildings.
- b. Du Pont will supply all fixed radiological laboratory counting equipment and a small portion of the portable radiological survey instruments.
- c. The following cost burden factors were used to calculate the total cost of each direct cost component. These cost burden factors are typical of rates used in the industry by companies that perform this type of work.

<u>Factor</u>	<u>Rate (Percent)</u>
Labor Overhead	160.0
General and Administrative (G&A)	15.5
Fee	20.0

The methodology for calculation of the total cost is detailed below:

LABOR

$(\text{Direct Cost}) \times (\text{Labor Overhead Rate}) = \text{Overhead Cost}$

$[\text{Direct Cost} + \text{Overhead Cost}] \times (\text{G \& A Rate}) = \text{G \& A Cost}$

$[\text{Direct Cost} + \text{Overhead Cost} + \text{G \& A Cost}] \times (\text{Fee Rate}) = \text{Fee Cost}$

$\text{Direct Cost} + \text{Overhead Cost} + \text{G \& A Cost} + \text{Fee Cost} = \text{Total Cost}$

TRAVEL AND LIVING, MATERIALS, AND PROCURED SERVICES

$(\text{Direct Cost}) \times (\text{G \& A Rate}) = \text{G \& A Cost}$

$[\text{Direct Cost} + \text{G \& A Cost}] \times (\text{Fee Rate}) = \text{Fee Cost}$

$\text{Direct Cost} + \text{G \& A Cost} + \text{Fee Cost} = \text{Total Cost}$

EQUIPMENT RENTAL

Standard equipment rental rates based on acquisition cost and depreciated value were used. Equipment rental rates are predicted on the assumption that decommissioning efforts on the four buildings will run consecutively.

- d. Costs as displayed in this analysis are based on today's (1990) dollars and do not take into account general cost escalation factors or anticipated radioactive waste burial cost increases.

- e. Assumptions relative to the methodology used to determine the waste volume estimates are contained in Section 4.0.
- f. The following rationale was used for calculating the cost associated with waste disposal. These costs are all inclusive and include the cost for containers, transportation, out of compact fees, and burial site disposal cost.

$$(\text{Direct Cost}) \times (\text{G \& A Rate}) = \text{G \& A Cost}$$

$$[\text{Direct Cost} + \text{G \& A Cost}] \times (\text{Fee Rate}) = \text{Fee Cost}$$

$$\text{Direct Cost} + \text{G \& A Cost} + \text{Fee Cost} = \text{Total Cost}$$

5.3 FACILITY DECOMMISSIONING COST ANALYSIS

This section of the analysis deals with the cost for completing the physical aspects of the decommissioning effort. These costs are defined as management, technical, and craft labor; travel and living expense; material cost; equipment rental fees; and procured services fees. All direct cost elements are burdened as detailed in Section 5.2. Figure 5-1 (Page 38) provides a summary of the decommissioning cost analysis for the four buildings. The total cost for the physical aspects of decommissioning the four Du Pont buildings in Boston, Massachusetts, excluding waste disposal (See Section 5.4), is estimated at **\$4,054,333.00**. The following paragraphs provide a detailed cost breakdown of the cost associated with decommissioning each building.

5.3.1 Facility Decommissioning Cost Analysis - Building 100

The projected cost for performing the physical aspects of the decommissioning effort for Building 100 is estimated at **\$1,412,082.00**. Figure 5-1 provides a summary of the cost elements associated with the Building 100 decommissioning effort. Appendix 1 (Page 42) provides a detailed breakdown of the cost elements.

5.3.2 Facility Decommissioning Cost Analysis - Building 120

The projected cost for performing the physical aspects of the decommissioning effort for Building 120 is estimated at **\$445,170.00**. Figure 5-1 provides a summary of the cost elements associated with the Building 120 decommissioning effort. Appendix 2 (Page 51) provides a detailed breakdown of the cost elements.

5.3.3 Facility Decommissioning Cost Analysis - Building 123

The projected cost for performing the physical aspects of the decommissioning effort for Building 123 is estimated at **\$431,645.00**. Figure 5-1 provides a summary of the cost elements associated with the Building 123 decommissioning effort. Appendix 3 (Page 60) provides a detailed breakdown of the cost elements.

5.3.4 Facility Decommissioning Cost Analysis - Building 575

The projected cost for performing the physical aspects of the decommissioning effort for Building 575 is estimated at **\$1,765,436.00**. Figure 5-1 provides a summary of the cost elements associated with the Building 575 decommissioning effort. Appendix 4 (Page 69) provides a detailed breakdown of the cost elements.

5.4 WASTE DISPOSAL COST ANALYSIS

This section of the cost analysis deals with the cost for disposal of radioactive waste generated as a result of the decommissioning effort. Waste volume estimates and the basis for the estimates are detailed in Section 4.0. For purposes of this analysis, radioactive waste has been divided into two (2) categories: structural materials and installed components. Structural materials are defined as materials such as floors, ceilings, walls, studs, exhaust ducting, roof materials, etc. that are an integral part of the building structure. Installed components are

defined as items such as fume hoods, laboratory work benches, refrigerators, freezers, centrifuge, custom lucite boxes, and air conditioners. The total cost for radioactive waste disposal resulting from decommissioning the Du Pont, Boston, Massachusetts facility is estimated at **\$1,766,101.00**.

Figure 5-2 (Page 39) details, by building, the cost for disposal of structural materials that are classified as radioactive waste. The disposal method selected identifies the cost for on site volume reduction and composite packaging of the radioactive waste in B-25 containers and shipping those containers to Richland, Washington, for disposal. Radioactive waste disposal costs as presented in Figure 5-2 are inclusive of the cost for containers, transportation, handling fees, out of compact surcharges and burial site disposal costs. All direct cost elements are burdened as detailed in Section 5.2. The total radioactive waste disposal cost for disposal of structural materials resulting from decommissioning the DuPont, Boston, Massachusetts facility, is estimated at **\$1,552,036.00**.

Figure 5-3 (Page 40) details, by building, the cost for disposal of installed components that are classified as radioactive waste. The disposal method selected identifies the cost for on site volume reduction and composite packaging the radioactive waste in B-25 containers and shipping those containers to Richland, Washington, for disposal. Radioactive waste disposal costs as presented are inclusive of the cost for containers, transportation, handling fees, out of compact surcharges and burial site disposal cost. All direct cost elements are burdened as detailed in Section 5.2. The total radioactive waste disposal cost for disposal of installed components resulting from decommissioning the Du Pont, Boston, Massachusetts facility is estimated at **\$214,065.00**.

5.5 COST ANALYSIS SUMMARY

This cost analysis is based on defined assumptions and potentially may have an inherent margin of error of 15 percent due to contractual constraints on the level of effort expended to perform the technical assessment and prepare the cost analysis. Other factors can affect the cost analysis such as the level of contamination being more or less extensive than anticipated i.e. core boring and extensive radiological surveys were not included in the

technical assessment. Should the contamination levels be more extensive than anticipated, facility decommissioning and radioactive waste disposal cost could increase. Likewise, in the event the contamination is less than anticipated, decommissioning and disposal cost could decrease.

A summary of the overall cost analysis is presented in Figure 5-4 (Page 41). The total decommissioning/waste disposal cost for the Du Pont Boston facility is estimated at \$5,820,434.00.

FIGURES

FIGURE 2-1

FACILITY DESCRIPTION

E. I. DU PONT DE NEMOURS AND COMPANY (INC.)
 FACILITIES
 BOSTON, MASSACHUSETTS

BUILDING NUMBER	RADIONUCLIDES USED	ESTIMATED BUILDING FLOOR SPACE RAD MATERIALS USE AREAS (Ft ²)
100	³² P, ¹²⁵ I, ¹⁴ C, ³ H, ³⁵ S	59,184
120	¹⁴ C, ³ H, ³² P, ³⁵ S, ¹²⁵ I	17,205
123	¹⁴ C, ³ H, ¹²⁵ I	9,000
575	¹⁴ C, ³ H, ³² P, ³⁵ S, ¹²⁵ I, ¹³⁷ Cs, ⁶⁰ Co, ⁶³ Ni, ²⁶ Al, ²²⁶ Ra, ⁵¹ Cr	59,349
TOTAL		144,738

FIGURE 4-1

RADIOACTIVE WASTE VOLUME ESTIMATE OF STRUCTURAL MATERIAL¹

E. I. DU PONT DE NEMOURS AND COMPANY (INC.)
FACILITIES
BOSTON, MASSACHUSETTS

BUILDING NUMBER	VOLUME (Ft ³)
100	3,369
120	573
123	153
575	13,458
TOTAL WASTE VOLUME	17,553 ²

NOTES

¹STRUCTURAL MATERIAL - DEFINED AS MATERIAL SUCH AS FLOORS, CEILINGS, WALLS, STUDS, EXHAUST DUCTING, ROOF MATERIAL, ETC., THAT ARE AN INTEGRAL PART OF THE BUILDING STRUCTURE.

²TOTAL WASTE VOLUME - VOLUME TOTAL IS AFTER COMPOSITE PACKAGING.

FIGURE 4-2

RADIOACTIVE WASTE VOLUME ESTIMATE OF INSTALLED COMPONENTS¹

E. I. DU PONT DE NEMOURS AND COMPANY (INC.)
FACILITIES
BOSTON, MASSACHUSETTS

BUILDING NUMBER	RADIOACTIVE MATERIAL FOR DISPOSAL (Ft ³)
100	846
120	124
123	309
575	1,142
TOTAL WASTE VOLUME	2,421 ²

NOTES

¹INSTALLED COMPONENTS - DEFINED AS FUME HOODS, LABORATORY BASE AND ISLAND CABINETS REFRIGERATORS, FREEZERS, CENTRIFUGES, CUSTOM LUCITE BOXES, AND AIR CONDITIONERS.

²TOTAL WASTE VOLUME - VOLUME TOTAL IS AFTER ON SITE VOLUME REDUCTION.

FIGURE 4-3

RADIOACTIVE WASTE VOLUME ESTIMATE SUMMARY

E. I. DU PONT DE NEMOURS AND COMPANY (INC.)
FACILITIES
BOSTON, MASSACHUSETTS

RADIOACTIVE WASTE DISPOSAL	RADIOACTIVE MATERIAL FOR DISPOSAL (Ft ³)
Structural Materials ¹	17,553
Installed Components ²	2,421
TOTAL WASTE VOLUME	19,974

NOTES

¹STRUCTURAL MATERIALS - DEFINED AS MATERIAL SUCH AS FLOORS, CEILINGS, WALLS, STUDS, EXHAUST DUCTING, ETC.

²INSTALLED COMPONENTS - DEFINED AS FUME HOODS, LABORATORY BASE AND ISLAND CABINETS, REFRIGERATORS, FREEZERS, CENTRIFUGES, CUSTOM LUCITE BOXES AND AIR CONDITIONERS WHICH HAVE BEEN SIZE REDUCED AND COMPOSITE PACKAGED.

FIGURE 5-1

DECOMMISSIONING COST ANALYSIS
PHYSICAL ASPECTS

E. I. DU PONT DE NEMOURS AND COMPANY, (INC.)
FACILITIES
BOSTON, MASSACHUSETTS

Building Number	Labor (\$)	Travel & Living (\$)	Materials (\$)	Equipment Rental (\$)	Procured Services (\$)	TOTAL COST (\$)
100	870,280	333,542	144,641	38,844	24,775	1,412,082
120	267,482	95,012	52,458	11,098	19,120	445,170
123	258,040	95,566	48,148	10,772	19,120	431,646
575	1,088,864	422,225	181,580	45,372	27,394	1,765,436
TOTAL	2,484,666	946,345	426,827	106,086	90,409	4,054,333

FIGURE 5-2

RADIOACTIVE WASTE DISPOSAL COST OF STRUCTURAL MATERIALS¹

E. I. DU PONT DE NEMOURS AND COMPANY (INC.)
FACILITIES
BOSTON, MASSACHUSETTS

DISPOSAL AT RICHLAND WASHINGTON

Building Number	Disposal Cost at Richland, Washington (\$)
100	297,887
120	50,665
123	12,111
575	1,189,900
TOTAL COST	1,552,036

NOTES

¹STRUCTURAL COMPONENTS - DEFINED AS MATERIAL SUCH AS FLOORS, CEILINGS, WALLS, STUDS, EXHAUST DUCTING, ETC., THAT ARE AN INTERGRAL PART OF THE BUILDING STRUCTURE.

FIGURE 5-3

RADIOACTIVE WASTE DISPOSAL COST OF INSTALLED COMPONENTS¹

E. I. DU PONT DE NEMOURS AND COMPANY (INC.)
FACILITIES
BOSTON, MASSACHUSETTS

DISPOSAL AT RICHLAND WASHINGTON

Building Number	Disposal Cost at Richland, Washington (\$)
100	74,803
120	10,964
123	27,322
575	100,976
TOTAL COST	214,065

NOTES

¹INSTALLED COMPONENTS - DEFINED AS FUME HOODS, LABORATORY BASE AND ISLAND CABINETS, REFRIGERATORS, FREEZERS, CENTRIFUGES, AND CUSTOM LUCITE BOXES.

FIGURE 5-4

TOTAL DECOMMISSIONING COST SUMMARY
DECOMMISSIONING/RADIOACTIVE WASTE DISPOSAL COST ANALYSIS

E. I. DU PONT DE NEMOURS AND COMPANY (INC.)
FACILITIES
BOSTON, MASSACHUSETTS

COST COMPONENTS	TOTAL COST (\$)
Facility Decommissioning	4,054,333
Radioactive Waste Disposal-Structural Materials ¹	1,552,036
Radioactive Waste Disposal-Installed Components ²	214,065
TOTAL COST	5,820,434

NOTES

¹STRUCTURAL MATERIALS - DEFINED AS MATERIALS SUCH AS FLOORS, CEILINGS, WALLS, STUDS, ROOF MATERIAL, EXHAUST DUCTING, ETC., THAT ARE AN INTEGRAL PART OF THE BUILDING STRUCTURE.

²INSTALLED COMPONENTS - DEFINED AS FUME HOODS, LABORATORY BASE AND ISLAND CABINETS, REFRIGERATORS, FREEZERS, CENTRIFUGES, CUSTOM LUCITE BOXES AND AIR CONDITIONERS.

APPENDIX 1

**FACILITY DECOMMISSIONING
BUILDING 100
DETAILED COST BREAKDOWN**

Diversified Scientific Services Inc.
 P.O.Box 863
 Kingston, Tennessee 37763

July 10, 1990

Title: E. I. DUPONT DE NEMOURS, INC.
 BOSTON, MASS
 FACILITY DECOMMISSIONING BUILDING 100
 DETAILED COST BREAKDOWN

PROPOSAL - FCAP	Total

Labor Hours	13,964
Direct Labor	241,503
Labor Overhead	386,405
Consumables	104,359
Material Acquisition	0
T S & L	240,651
Subcontracted items	17,875

Total Direct Costs	990,792
G & A	153,573

Total Costs	1,144,365
Equipment Rental	38,844
Profit	228,873
Contingency	0

Price	1,412,082
	=====

Diversified Scientific Services Inc.
 P.O.Box 863
 Kingston, Tennessee 37763

July 10, 1990

Title: E. I. DUPONT DE NEMOURS, INC.
 BOSTON, MASS
 FACILITY DECOMMISSIONING BUILDING 100
 DETAILED COST BREAKDOWN

Task	Job Classification	Hours		Rate	Amount	Overhead	G & A	Total Cost	Profit	Price
		S/T	O/T							
Corporate Management		71		53.46	3,796	6,073	1,530	11,398	2,280	13,678
Corporate RESD		135		42.90	5,792	9,266	2,334	17,392	3,478	20,870
Mgr. Field Operation		178		36.64	6,522	10,436	2,629	19,587	3,917	23,504
Project Mgr		740		33.33	24,664	39,463	9,940	74,067	14,813	88,880
Health & Safety Mgr.		710		30.03	21,321	34,114	8,592	64,028	12,806	76,833
Clerk		680		12.54	8,527	13,644	3,436	25,607	5,121	30,729
Shift Supervisor		710		17.82	12,652	20,244	5,099	37,995	7,599	45,593
HP Foreman		710		17.16	12,184	19,494	4,910	36,587	7,317	43,905
Decon Foreman		710		17.16	12,184	19,494	4,910	36,587	7,317	43,905
HP Tech		5,000		13.86	69,300	110,880	27,928	208,108	41,622	249,729
Decon Tech		2,900		13.86	40,194	64,310	16,198	120,703	24,141	144,843
Plumber		710		17.16	12,184	19,494	4,910	36,587	7,317	43,905
Electrician		710		17.16	12,184	19,494	4,910	36,587	7,317	43,905
		13,964			241,503	386,405	97,326	725,233	145,047	870,280
TOTAL LABOR		13,964			241,503	386,405	97,326	725,233	145,047	870,280

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July 10, 1990

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 BOSTON, MASS
 FACILITY DECOMMISSIONING BUILDING 100
 DETAILED COST BREAKDOWN

TRAVEL, SUBSISTANCE, AND LODGING

	Quantity	Rate	Amount	Overhead	G & A	Total Cost	Profit	Price

Airfare:								
Per Round-trip	96	800.00	76,800		11,904	88,704	17,741	106,445
Per Diem "A"								
Per Day	36	125.00	4,500		698	5,198	1,040	6,237
Per Diem "B"								
Per Day	368	75.00	27,600		4,278	31,878	6,376	38,254
Per Diem "C"								
Per Day	1,962	65.00	127,530		19,767	147,297	29,459	176,757
Personal Auto								
Per Mile	11,550	0.22	2,541		394	2,935	587	3,522
Car Rental								
Per Day	24	70.00	1,680		260	1,940	388	2,328

TOTAL TS&L			240,651		37,301	277,952	55,590	333,542
=====								

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Title: E. I. DUPONT DE NEMOURS, INC.
 BOSTON, MASS
 FACILITY DECOMMISSIONING BUILDING 100
 DETAILED COST BREAKDOWN

CONSUMABLES		Unit							
Item No.	Description	Quantity	Cost	Amount	Overhead	G & A	Cost	Profit	Price
1	Personnel Clothing	1,190	7.50	8,925	0	1,383	10,308	2,062	12,370
2	Cotton Rags	20	1.50	30	0	5	35	7	42
3	Utility Cleaner	4	25.00	100	0	16	116	23	139
4	Anti-C Gloves	1,190	0.85	1,012	0	157	1,168	234	1,402
5	Respirator Cartridges	21	6.00	126	0	20	146	29	175
6	Safety Boots	14	70.00	980	0	152	1,132	226	1,358
7	Safety Glasses	28	5.00	140	0	22	162	32	194
8	Hard Hats	14	8.50	119	0	18	137	27	165
9	Safety Signs/Rope	1	50.00	50	0	8	58	12	69
10	Misc Tools	1	500.00	500	0	78	578	116	693
11	Duct Tape	25	5.50	138	0	21	159	32	191
12	Plastic	25	55.00	1,375	0	213	1,588	318	1,906
13	Urine Sample Bottles	40	4.50	180	0	28	208	42	249
14	Leather Palm Gloves	238	2.50	595	0	92	687	137	825
15	Misc Office Supplies	1	700.00	700	0	109	809	162	970
16	First Aid Kits	1	35.00	35	0	5	40	8	49
17	Gator Ade	17	41.00	697	0	108	805	161	966
18	Water Cooler	1	55.00	55	0	9	64	13	76
19	Ice	85	1.25	106	0	16	123	25	147
20	Push Brooms	2	15.00	30	0	5	35	7	42
21	Mops Heads	17	27.50	468	0	72	540	108	648
22	Mop Bucket	2	47.50	95	0	15	110	22	132
23	Mop Wringer	2	62.50	125	0	19	144	29	173
24	Misc Cleaning Supplies	1	600.00	600	0	93	693	139	832
25	Extension Cords	4	35.00	140	0	22	162	32	194
26	Fire Extinguishers	2	18.54	37	0	6	43	9	51
27	Coffee	17	9.49	161	0	25	186	37	224
28	Survey Meter Repair Parts	1	700.00	700	0	109	809	162	970
29	55 Gallon Drums	14	45.00	630	0	98	728	146	873
30	Drum Liners	14	2.50	35	0	5	40	8	49
31	Plastic Bags	425	0.70	298	0	46	344	69	412
32	Maslin	17	65.00	1,105	0	171	1,276	255	1,532
33	Smears	86,571	0.20	17,314	0	2,684	19,998	4,000	23,997
34	Smear Cocktail	475	85.00	40,375	0	6,258	46,633	9,327	55,960
35	Vials	86,571	0.18	15,583	0	2,415	17,998	3,600	21,598
36	Oil Dry	14	4.75	67	0	10	77	15	92
37	Lumber	1	750.00	750	0	116	866	173	1,040
38	Lab Coats	200	1.50	300	0	47	347	69	416
39	Electrical Tape	1	45.00	45	0	7	52	10	62
40	Airline Kit	1	150.00	150	0	23	173	35	208
41	Harnesses	6	15.00	90	0	14	104	21	125
42	Rope (nylon)	1,000	0.40	400	0	62	462	92	554

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 BOSTON, MASS
 FACILITY DECOMMISSIONING BUILDING 100
 DETAILED COST BREAKDOWN

43 Spray Adhesive	7	28.50	200	0	31	230	46	277
44 M-43-20 Replacement Windows	50	30.00	1,500	0	233	1,733	347	2,079
45 M44-9 Replacement Windows	50	90.00	4,500	0	698	5,198	1,040	6,237
46 Oxygen/Acetylene	1	1,500.00	1,500	0	233	1,733	347	2,079
47 L.P. Fuel	1	600.00	600	0	93	693	139	832
48 Batteries (D-cell)	60	2.50	150	0	23	173	35	208
49 P-10 Gas	1	550.00	550	0	85	635	127	762
TOTAL CONSUMABLES			104,359	0	16,176	120,534	24,107	144,641

Diversified Scientific Services Inc.

P.O.Box 863

July 10, 1990 Kingston, Tennessee 37763

Title: E. I. DUPONT DE NEMOURS, INC.
 BOSTON, MASS
 FACILITY DECOMMISSIONING BUILDING 100
 DETAILED COST BREAKDOWN

EQUIPMENT RENTAL

Days in Use: 119

Item No.	Description	Quantity	Rate	Amount	Overhead	G & A	Total Cost	Profit	Price
1	HEPA Vacuums	2	4.88	1,161			1,161		1,161
2	Model 3 Survey Meter	15	1.43	2,553			2,553		2,553
3	Model 44-9 Probe	15	0.90	1,607			1,607		1,607
4	Pallet Jack	2	1.95	464			464		464
5	Drum Cart	1	0.91	108			108		108
6	Roll Around Cart	1	0.62	74			74		74
7	Skill Saw	2	0.62	148			148		148
8	Ladders	4	0.74	352			352		352
9	Typewriter	1	1.83	218			218		218
10	PC/Printer/Software	1	20.31	2,417			2,417		2,417
11	File Cabinet	3	0.71	253			253		253
12	Coffee Maker	2	0.62	148			148		148
13	Sawz-all	2	0.90	214			214		214
14	Respirators (Full)	10	0.71	845			845		845
15	Respirators (1/2 Face)	15	0.14	250			250		250
16	Negative Air Machine	2	8.13	1,935			1,935		1,935
17	Copy Machine	1	10.15	1,208			1,208		1,208
18	Air Line (1/4")	3	0.15	54			54		54
19	Air Hammer (Small)	8	0.62	590			590		590
20	Needle Gun	2	0.82	195			195		195
21	Air Stapler	1	1.02	121			121		121
22	FAX Machine	1	10.15	1,208			1,208		1,208
23	Compressor	2	6.50	1,547			1,547		1,547
24	Fork Lift	1	64.99	7,734			7,734		7,734
25	Demolition Saw	1	3.25	387			387		387
26	Floor Tile Machine	1	2.54	302			302		302
27	Floor Scabbler	1	36.15	4,302			4,302		4,302
28	Air Hammer (Large)	1	1.63	194			194		194
29	Model 43-20 Probe	10	1.53	1,821			1,821		1,821
30	Temporary Lighting	5	1.02	607			607		607
31	Portable Heaters	10	0.51	607			607		607
32	Model 239-17 Floor Monitor	1	11.38	1,354			1,354		1,354
33	Job Truck	1	32.50	3,868			3,868		3,868
				38,844		0	38,844	0	38,844

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Title: E. I. DUPONT DE NEMOURS, INC.
 BOSTON, MASS
 FACILITY DECOMMISSIONING BUILDING 100
 DETAILED COST BREAKDOWN

SUBCONTRACTED ITEMS

Item No.	Description	Quantity	Rate	Amount	Overhead	G & A	Total Cost	Profit	Price
1	Health Exams	13	280.00	3,640		564	4,204	841	5,045
2	Instrument Calibration	11	275.00	3,025		469	3,494	699	4,193
3	Equipment Shipment	1	1,250.00	1,250		194	1,444	289	1,733
4	Federal Express	17	50.00	850		132	982	196	1,178
5	Urinalysis	76	60.00	4,560		707	5,267	1,053	6,320
6	Whole Body Counts	13	350.00	4,550		705	5,255	1,051	6,306
				17,875		2,771	20,646	4,129	24,775

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 BOSTON, MASS
 FACILITY DECOMMISSIONING BUILDING 100
 DETAILED COST BREAKDOWN

Diversified Scientific Services Inc. Rate Table

Labor Grade	Salary Rate	Benefited Rate
Corporate Management	40.50	53.46
Corporate RESO	32.50	42.90
Mgr. Field Operation	27.76	36.64
Project Mgr	25.25	33.33
Health & Safety Mgr.	22.75	30.03
Clerk	9.50	12.54
Shift Supervisor	13.50	17.82
HP Foreman	13.00	17.16
Decon Foreman	13.00	17.16
HP Tech	10.50	13.86
Decon Tech	10.50	13.86
Plumber	13.00	17.16
Electrician	13.00	17.16

Fringe Benefit Rate	32.0%	
Material Overhead	0.0%	
Labor Overhead	160.0%	(Used for some calculations)
G & A	15.5%	15.5%
Profit	20.0%	0.0%
Airfare (RT)	0.0%	
Per Diem "A"	0.0%	
Per Diem "B"	0.0%	
Per Diem "C"	0.0%	
Car Rental	0.0%	

APPENDIX 2

*FACILITY DECOMMISSIONING
BUILDING 120
DETAILED COST BREAKDOWN*

Diversified Scientific Services Inc.
 P.O.Box 863
 Kingston, Tennessee 37763

July 10, 1990

Title:

E. I. DUPONT DE NEMOURS, INC.
 BOSTON, MASS
 FACILITY DECOMMISSIONING BUILDING 120
 DETAILED COST BREAKDOWN

PROPOSAL RECAP	Total
Labor Hours	4,238
Direct Labor	74,226
Labor Overhead	118,762
Consumables	37,671
Material Acquisition	0
T S & L	68,551
Subcontracted items	13,795
Total Direct Costs	313,006
G & A	48,721
Total Costs	361,726
Equipment Rental	11,098
Profit	72,345
Contingency	0
Price	445,170

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July 10, 1990

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 BOSTON, MASS
 FACILITY DECOMMISSIONING BUILDING 120
 DETAILED COST BREAKDOWN

Task	Job Classification	Hours		Rate	Amount	Overhead	G & A	Total Cost	Profit	Price
		S/T	O/T							
Corporate Management		23		53.46	1,230	1,967	496	3,692	738	4,431
Corporate RESO		43		42.90	1,845	2,952	743	5,540	1,108	6,648
Mgr. Field Operation		56		36.64	2,052	3,283	827	6,162	1,232	7,395
Project Mgr		252		33.33	8,399	13,439	3,385	25,223	5,045	30,267
Health & Safety Mgr.		222		30.03	6,667	10,667	2,687	20,020	4,004	24,024
Clerk		192		12.54	2,408	3,852	970	7,230	1,446	8,676
Shift Supervisor		222		17.82	3,956	6,330	1,594	11,880	2,376	14,256
HP Foreman		222		17.16	3,810	6,095	1,535	11,440	2,288	13,728
Decon Foreman		222		17.16	3,810	6,095	1,535	11,440	2,288	13,728
HP Tech		1,392		13.86	19,293	30,869	7,775	57,937	11,587	69,525
Decon Tech		948		13.86	13,139	21,023	5,295	39,457	7,891	47,349
Plumber		222		17.16	3,810	6,095	1,535	11,440	2,288	13,728
Electrician		222		17.16	3,810	6,095	1,535	11,440	2,288	13,728
		4,238			74,226	118,762	29,913	222,902	44,580	267,482
TOTAL LABOR		4,238			74,226	118,762	29,913	222,902	44,580	267,482

Diversified Scientific Services Inc.
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July 10, 1990

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 BOSTON, MASS
 FACILITY DECOMMISSIONING BUILDING 120
 DETAILED COST BREAKDOWN

TRAVEL, SUBSISTANCE, AND LODGING

	Quantity	Rate	Amount	Overhead	G & A	Total Cost	Profit	Price

Airfare:								
Per Round-trip	24	800.00	19,200		2,976	22,176	4,435	26,611
Per Diem "A"								
Per Day	9	125.00	1,125		174	1,299	260	1,559
Per Diem "B"								
Per Day	113	75.00	8,475		1,314	9,789	1,958	11,746
Per Diem "C"								
Per Day	566	65.00	36,790		5,702	42,492	8,498	50,991
Personal Auto								
Per Mile	11,550	0.22	2,541		394	2,935	587	3,522
Car Rental								
Per Day	6	70.00	420		65	485	97	582

TOTAL TS&L			68,551		10,625	79,176	15,835	95,012
=====								

Diversified Scientific Services Inc.
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 Kingston, Tennessee 37763

July 10, 1990

Title: E. I. DUPONT DE NEMOURS, INC.
 BOSTON, MASS
 FACILITY DECOMMISSIONING BUILDING 120
 DETAILED COST BREAKDOWN

Item No.	CONSUMABLES Description	Quantity	Unit Cost	Amount	Overhead	G & A	Cost	Profit	Price
1	Personnel Clothing	312	7.50	2,340	0	363	2,703	541	3,243
2	Cotton Rags	13	1.50	20	0	3	23	5	27
3	Utility Cleaner	3	25.00	75	0	12	87	17	104
4	Anti-C Gloves	312	0.85	265	0	41	306	61	368
5	Respirator Cartridges	26	6.00	156	0	24	180	36	216
6	Safety Boots	13	70.00	910	0	141	1,051	210	1,261
7	Safety Glasses	26	5.00	130	0	20	150	30	180
8	Hard Hats	13	8.50	111	0	17	128	26	153
9	Safety Signs/Rope	1	50.00	50	0	8	58	12	69
10	Misc Tools	1	500.00	500	0	78	578	116	693
11	Duct Tape	25	150.00	3,750	0	581	4,331	866	5,198
12	Plastic	15	55.00	825	0	128	953	191	1,143
13	Urine Sample Bottles	40	4.50	180	0	28	208	42	249
14	Leather Palm Gloves	65	2.50	163	0	25	188	38	225
15	Misc Office Supplies	1	250.00	250	0	39	289	58	347
16	First Aid Kits	1	35.00	35	0	5	40	8	49
17	Gator Ade	5	41.00	205	0	32	237	47	284
18	Water Cooler	1	55.00	55	0	9	64	13	76
19	Ice	24	1.25	30	0	5	35	7	42
20	Push Brooms	2	15.00	30	0	5	35	7	42
21	Mops Heads	5	27.50	138	0	21	159	32	191
22	Mop Bucket	2	47.50	95	0	15	110	22	132
23	Mop Wringer	2	62.50	125	0	19	144	29	173
24	Misc Cleaning Supplies	1	600.00	600	0	93	693	139	832
25	Extension Cords	4	35.00	140	0	22	162	32	194
26	Fire Extinguishers	2	18.54	37	0	6	43	9	51
27	Coffee	5	9.49	47	0	7	55	11	66
28	Survey Meter Repair Parts	1	250.00	250	0	39	289	58	347
29	55 Gallon Drums	8	45.00	360	0	56	416	83	499
30	Drum Liners	8	2.50	20	0	3	23	5	28
31	Plastic Bags	120	0.70	84	0	13	97	19	116
32	Maslin	5	65.00	325	0	50	375	75	450
33	Smears	22,221	0.20	4,444	0	689	5,133	1,027	6,160
34	Smear Cocktail	127	85.00	10,795	0	1,673	12,468	2,494	14,962
35	Vials	22,221	0.18	4,000	0	620	4,620	924	5,544
36	Oil Dry	8	4.75	38	0	6	44	9	53
37	Lumber	1	750.00	750	0	116	866	173	1,040
38	Lab Coats	100	1.50	150	0	23	173	35	208
39	Electrical Tape	1	45.00	45	0	7	52	10	62
40	Airline Kit	0	0.00	0	0	0	0	0	0
41	Harnessess	0	0.00	0	0	0	0	0	0
42	Rope (nylon)	1,000	0.40	400	0	62	462	92	554

Diversified Scientific Services Inc.

P.O.Box 863

Kingston, Tennessee 37763

July 10, 1990

Title:

E. I. DUPONT DE NEMOURS, INC.

BOSTON, MASS

FACILITY DECOMMISSIONING BUILDING 120

DETAILED COST BREAKDOWN

43 Spray Adhesive	7	28.50	200	0	31	230	46	277
44 M-43-20 Replacement Windows	25	30.00	750	0	150	900	180	1,080
45 M44-9 Replacement Windows	25	90.00	2,250	0	450	2,700	540	3,240
46 Oxygen/Acetylene	1	750.00	750	0	150	900	180	1,080
47 L.P. Fuel	1	400.00	400	0	80	480	96	576
48 Batteries (D-cell)	40	2.50	100	0	20	120	24	144
49 P-10 Gas	1	300.00	300	0	60	360	72	432
TOTAL CONSUMABLES			37,671	0	6,044	43,715	8,743	52,458

Diversified Scientific Services Inc.
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 Kingston, Tennessee 37763

July 10, 1990

Title: E. I. DUPONT DE NEMOURS, INC.
 BOSTON, MASS
 FACILITY DECOMMISSIONING BUILDING 120
 DETAILED COST BREAKDOWN

EQUIPMENT RENTAL

Days in Use: 34

Item No.	Description	Quantity	Rate	Amount	Overhead	G & A	Total Cost	Profit	Price
1	HEPA Vacuums	2	4.88	332			332		332
2	Model 3 Survey Meter	15	1.43	729			729		729
3	Model 44-9 Probe	15	0.90	459			459		459
4	Pallet Jack	2	1.95	133			133		133
5	Drum Cart	1	0.91	31			31		31
6	Roll Around Cart	1	0.62	21			21		21
7	Skill Saw	2	0.62	42			42		42
8	Ladders	4	0.74	101			101		101
9	Typewriter	1	1.83	62			62		62
10	PC/Printer/Software	1	20.31	691			691		691
11	File Cabinet	3	0.71	72			72		72
12	Coffee Maker	2	0.62	42			42		42
13	Sawz-all	2	0.90	61			61		61
14	Respirators (Full)	10	0.71	241			241		241
15	Respirators (1/2 Face)	15	0.14	71			71		71
16	Negative Air Machine	2	8.13	553			553		553
17	Copy Machine	1	10.15	345			345		345
18	Air Line (1/4")	3	0.15	15			15		15
19	Air Hammer (Small)	8	0.62	169			169		169
20	Needle Gun	2	0.82	56			56		56
21	Air Stapler	1	1.02	35			35		35
22	FAX Machine	1	10.15	345			345		345
23	Compressor	2	6.50	442			442		442
24	Fork Lift	1	64.99	2,210			2,210		2,210
25	Demolition Saw	1	3.25	111			111		111
26	Floor Tile Machine	1	2.54	86			86		86
27	Floor Scabblers	1	36.15	1,229			1,229		1,229
28	Air Hammer (Large)	1	1.63	55			55		55
29	Model 43-20 Probe	10	1.53	520			520		520
30	Temporary Lighting	5	1.02	173			173		173
31	Portable Heaters	10	0.51	173			173		173
32	Model 239-17 Floor Monitor	1	11.38	387			387		387
33	Job Truck	1	32.50	1,105			1,105		1,105
				11,098		0	11,098	0	11,098

Diversified Scientific Services Inc.
P.O.Box 863
Kingston, Tennessee 37763

July 10, 1990

Title: E. I. DUPONT DE NEMOURS, INC.
BOSTON, MASS
FACILITY DECOMMISSIONING BUILDING 120
DETAILED COST BREAKDOWN

SUBCONTRACTED ITEMS

Item No.	Description	Quantity	Rate	Amount	Overhead	G & A	Total Cost	Profit	Price
1	Health Exams	13	280.00	3,640		564	4,204	841	5,045
2	Instrument Calibration	11	275.00	3,025		469	3,494	699	4,193
3	Equipment Shipment	1	1,250.00	1,250		194	1,444	289	1,733
4	Federal Express	5	50.00	250		39	289	58	347
5	Urinalysis	18	60.00	1,080		167	1,247	249	1,497
6	Whole Body Counts	13	350.00	4,550		705	5,255	1,051	6,306
				13,795		2,138	15,933	3,187	19,120

Diversified Scientific Services Inc.
 P.O.Box 863
 Kingston, Tennessee 37763

July 10, 1990

Title: E. I. DUPONT DE NEMOURS, INC.
 BOSTON, MASS
 FACILITY DECOMMISSIONING BUILDING 120
 DETAILED COST BREAKDOWN

Diversified Scientific Services Inc. Rate Table

Labor Grade	Salary Rate	Benefited Rate
Corporate Management	40.50	53.46
Corporate RESO	32.50	42.90
Mgr. Field Operation	27.76	36.64
Project Mgr	25.25	33.33
Health & Safety Mgr.	22.75	30.03
Clerk	9.50	12.54
Shift Supervisor	13.50	17.82
HP Foreman	13.00	17.16
Decon Foreman	13.00	17.16
HP Tech	10.50	13.86
Decon Tech	10.50	13.86
Plumber	13.00	17.16
Electrician	13.00	17.16

Fringe Benefit Rate	32.0%	
Material Overhead	0.0%	
Labor Overhead	160.0%	(Used for some calculations)
G & A	15.5%	15.5%
Profit	20.0%	0.0%
Airfare (RT)	0.0%	
Per Diem "A"	C %	
Per Diem "B"	0.0%	
Per Diem "C"	0.0%	
Car Rental	0.0%	

APPENDIX 3

**FACILITY DECOMMISSIONING
BUILDING 123
DETAILED COST BREAKDOWN**

Diversified Scientific Services Inc.
 P.O.Box 863
 Kingston, Tennessee 37763

July 10, 1990

Title: E. I. DUPONT DE NEMOURS, INC.
 BOSTON, MASS
 FACILITY DECOMMISSIONING BUILDING 123
 DETAILED COST BREAKDOWN

PROPOSAL RECAP	Total
Labor Hours	4,089
Direct Labor	71,606
Labor Overhead	114,570
Consumables	34,739
Material Acquisition	0
T S & L	68,951
Subcontracted items	13,795
Total Direct Costs	303,660
G & A	47,067
Total Costs	350,728
Equipment Rental	10,772
Profit	70,146
Contingency	0
Price	431,645

Diversified Scientific Services Inc.
P.O.Box 863
Kingston, Tennessee 37763

July 10, 1990

Title: E. I. DUPONT DE NEMOURS, INC.
BOSTON, MASS
FACILITY DECOMMISSIONING BUILDING 123
DETAILED COST BREAKDOWN

Task	Job Classification	Hours		Rate	Amount	Overhead	G & A	Total Cost	Profit	Price
		S/T	O/T							
	Corporate Management	22		53.46	1,176	1,882	474	3,532	706	4,238
	Corporate RESO	41		42.90	1,759	2,814	709	5,282	1,056	6,338
	Mgr. Field Operation	54		36.64	1,979	3,166	797	5,942	1,188	7,131
	Project Mgr	244		33.33	8,133	13,012	3,277	24,422	4,884	29,306
	Health & Safety Mgr.	214		30.03	6,426	10,282	2,590	19,299	3,860	23,158
	Clerk	184		12.54	2,307	3,692	930	6,929	1,386	8,315
	Shift Supervisor	214		17.82	3,813	6,102	1,537	11,452	2,290	13,742
	1/2P Foreman	214		17.16	3,672	5,876	1,480	11,028	2,206	13,233
	Decon Foreman	214		17.16	3,672	5,876	1,480	11,028	2,206	13,233
	HP Tech	1,344		13.86	18,628	29,805	7,507	55,939	11,188	67,127
	Decon Tech	916		13.86	12,696	20,313	5,116	38,125	7,625	45,750
	Plumber	214		17.16	3,672	5,876	1,480	11,028	2,206	13,233
	Electrician	214		17.16	3,672	5,876	1,480	11,028	2,206	13,233
		4,089			71,606	114,570	28,857	215,033	43,007	258,040
	TOTAL LABOR	4,089			71,606	114,570	28,857	215,033	43,007	258,040

Diversified Scientific Services Inc.
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July 10, 1990

Title: E. I. DUPONT DE NEMOURS, INC.
 BOSTON, MASS
 FACILITY DECOMMISSIONING BUILDING 123
 DETAILED COST BREAKDOWN

TRAVEL, SUBSISTANCE, AND LODGING

	Quantity	Rate	Amount	Overhead	G & A	Total Cost	Profit	Price

Airfare:								
Per Round-trip	26	800.00	20,800		3,224	24,024	4,805	28,829
Per Diem "A"								
Per Day	9	125.00	1,125		174	1,299	260	1,559
Per Diem "B"								
Per Day	110	75.00	8,250		1,279	9,529	1,906	11,435
Per Diem "C"								
Per Day	551	65.00	35,815		5,551	41,366	8,273	49,640
Personal Auto								
Per Mile	11,550	0.22	2,541		394	2,935	587	3,522
Car Rental								
Per Day	6	70.00	420		65	485	97	582

TOTAL TS&L			68,951		10,687	79,638	15,928	95,566
=====								

Diversified Scientific Services Inc.
P.O.Box 863

July 10, 1990 Kingston, Tennessee 37763

Title: E. I. DUPONT DE NEMOURS, INC.
BOSTON, MASS
FACILITY DECOMMISSIONING BUILDING 123
DETAILED COST BREAKDOWN

CONSUMABLES		Unit							
Item No.	Description	Quantity	Cost	Amount	Overhead	G & A	Cost	Profit	Price
1	Personnel Clothing	299	7.50	2,243	0	348	2,590	518	3,108
2	Cotton Rags	116	1.50	174	0	27	201	40	241
3	Utility Cleaner	23	25.00	575	0	89	664	133	797
4	Anti-C Gloves	299	0.85	254	0	39	294	59	352
5	Respirator Cartridges	25	6.00	156	0	24	180	36	216
6	Safety Boots	13	70.00	910	0	141	1,051	210	1,261
7	Safety Glasses	26	5.00	130	0	20	150	30	180
8	Hard Hats	13	8.50	111	0	17	128	26	153
9	Safety Signs/Rope	1	50.00	50	0	8	58	12	69
10	Misc Tools	1	500.00	500	0	78	578	116	693
11	Duct Tape	25	150.00	3,750	0	581	4,331	866	5,198
12	Plastic	15	55.00	825	0	128	953	191	1,143
13	Urine Sample Bottles	40	4.50	180	0	28	208	42	249
14	Leather Palm Gloves	65	2.50	163	0	25	188	38	225
15	Misc Office Supplies	1	250.00	250	0	39	289	58	347
16	First Aid Kits	1	35.00	35	0	5	40	8	49
17	Gator Ade	5	41.00	205	0	32	237	47	284
18	Water Cooler	1	55.00	55	0	9	64	13	76
19	Ice	23	1.25	29	0	4	33	7	40
20	Push Brooms	2	15.00	30	0	5	35	7	42
21	Mops Heads	5	27.50	138	0	21	159	32	191
22	Mop Bucket	2	47.50	95	0	15	110	22	132
23	Mop Wringer	2	62.50	125	0	19	144	29	173
24	Misc Cleaning Supplies	1	600.00	600	0	93	693	139	832
25	Extension Cords	4	35.00	140	0	22	162	32	194
26	Fire Extinguishers	2	18.54	37	0	6	43	9	51
27	Coffee	5	9.49	47	0	7	55	11	66
28	Survey Meter Repair Part	1	250.00	250	0	39	289	58	347
29	55 Gallon Drums	8	45.00	360	0	56	416	83	499
30	Drum Liners	8	2.50	20	0	3	23	5	28
31	Plastic Bags	115	0.70	81	0	12	93	19	112
32	Maslin	5	65.00	325	0	50	375	75	450
33	Smears	18,224	0.20	3,645	0	565	4,210	842	5,052
34	Smear Cocktail	104	85.00	8,840	0	1,370	10,210	2,042	12,252
35	Vials	18,224	0.18	3,280	0	508	3,789	758	4,547
36	Oil Dry	8	4.75	38	0	6	44	9	53
37	Lumber	1	750.00	750	0	116	866	173	1,040
38	Lab Coats	100	1.50	150	0	23	173	35	208
39	Electrical Tape	1	45.00	45	0	7	52	10	62
40	Airline Kit	0	0.00	0	0	0	0	0	0
41	Harnessess	0	0.00	0	0	0	0	0	0
42	Rope (nylon)	1,000	0.40	400	0	62	462	92	554

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Title: E. I. DUPONT DE NEMOURS, INC.
 BOSTON, MASS
 FACILITY DECOMMISSIONING BUILDING 123
 DETAILED COST BREAKDOWN

43 Spray Adhesive	7	28.50	200	0	31	230	46	277
44 M-43-20 Replacement Windows	25	30.00	750	0	116	866	173	1,040
45 M44-9 Replacement Windows	25	90.00	2,250	0	349	2,599	520	3,119
46 Oxygen/Acetylene	1	750.00	750	0	116	866	173	1,040
47 L.P. Fuel	1	400.00	400	0	62	462	92	554
48 Batteries (D-cell)	40	2.50	100	0	16	116	23	139
49 P-10 Gas	1	300.00	300	0	47	347	69	416
TOTAL CONSUMABLES			34,739	0	5,384	40,123	8,025	48,148

Diversified Scientific Services Inc.
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July 10, 1990

Title: E. I. DUPONT DE NEMOURS, INC.
 BOSTON, MASS
 FACILITY DECOMMISSIONING BUILDING 123
 DETAILED COST BREAKDOWN

EQUIPMENT RENTAL

Days in Use: 33

Item No.	Description	Quantity	Rate	Amount	Overhead	& A	Total Cost	Profit	Price
1	HEPA Vacuums	2	4.88	322			322		322
2	Model 3 Survey Meter	15	1.43	708			708		708
3	Model 44-9 Probe	15	0.90	446			446		446
4	Pallet Jack	2	1.95	129			129		129
5	Drum Cart	1	0.91	30			30		30
6	Roll Around Cart	1	0.62	20			20		20
7	Skill Saw	2	0.62	41			41		41
8	Ladders	4	0.74	98			98		98
9	Typewriter	1	1.83	60			60		60
10	PC/Printer/Software	1	20.31	670			670		670
11	File Cabinet	3	0.71	70			70		70
12	Coffee Maker	2	0.62	41			41		41
13	Sawz-all	2	0.90	59			59		59
14	Respirators (Full)	10	0.71	234			234		234
15	Respirators (1/2 Face)	15	0.14	69			69		69
16	Negative Air Machine	2	8.13	537			537		537
17	Copy Machine	1	10.15	335			335		335
18	Air Line (1/4")	3	0.15	15			15		15
19	Air Hammer (Small)	8	0.62	164			164		164
20	Needle Gun	2	0.82	54			54		54
21	Air Stapler	1	1.02	34			34		34
22	FAX Machine	1	10.15	335			335		335
23	Compressor	2	6.50	429			429		429
24	Fork Lift	1	64.99	2,145			2,145		2,145
25	Demolition Saw	1	3.25	107			107		107
26	Floor Tile Machine	1	2.54	84			84		84
27	Floor Scabber	1	36.15	1,193			1,193		1,193
28	Air Hammer (Large)	1	1.63	54			54		54
29	Model 43-20 Probe	10	1.53	505			505		505
30	Temporary Lighting	5	1.02	168			168		168
31	Portable Heaters	10	0.51	168			168		168
32	Model 239-17 Floor Monitor	1	11.38	376			376		376
33	Job Truck	1	32.50	1,073			1,073		1,073
				10,772		0	10,772	0	10,772

Diversified Scientific Services Inc.
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 Kingston, Tennessee 37763

July 10, 1990

Title: E. I. DUPONT DE NEMOURS, INC.
 BOSTON, MASS
 FACILITY DECOMMISSIONING BUILDING 123
 DETAILED COST BREAKDOWN

SUBCONTRACTED ITEMS

Item No.	Description	Quantity	Rate	Amount	Overhead	G & A	Total Cost	Profit	Price
1	Health Exams	13	280.00	3,640		564	4,204	841	5,045
2	Instrument Calibration	11	275.00	3,025		469	3,494	699	4,193
3	Equipment Shipment	1	1,250.00	1,250		194	1,444	289	1,733
4	Federal Express	5	50.00	250		39	289	58	347
5	Urinalysis	18	60.00	1,080		167	1,247	249	1,497
6	Whole Body Counts	13	350.00	4,550		705	5,255	1,051	6,306
				13,195		2,138	15,933	3,187	19,120

Diversified Scientific Services Inc.
 P.O.Box 863
 Kingston, Tennessee 37763

July 10, 1990

Title: E. I. DUPONT DE NEMOURS, INC.
 BOSTON, MASS
 FACILITY DECOMMISSIONING BUILDING 123
 DETAILED COST BREAKDOWN

Diversified Scientific Services Inc. Rate Table

Labor Grade	Salary Rate	Benefited Rate
Corporate Management	40.50	53.46
Corporate RESO	32.50	42.90
Mgr. Field Operation	27.76	36.64
Project Mgr	25.25	33.33
Health & Safety Mgr.	22.75	30.03
Clerk	9.50	12.54
Shift Supervisor	13.50	17.82
HP Foreman	13.00	17.16
Decon Foreman	13.00	17.16
HP Tech	10.50	13.86
Decon Tech	10.50	13.86
Plumber	13.00	17.16
Electrician	13.00	17.16

Fringe Benefit Rate	32.0%	
Material Overhead	0.0%	
Labor Overhead	160.0%	(Used for some calculations)
G & A	15.5%	15.5%
Profit	20.0%	0.0%
Airfare (KI)	0.0%	
Per Diem "A"	0.0%	
Per Diem "B"	0.0%	
Per Diem "C"	0.0%	
Car Rental	0.0%	

APPENDIX 4

*FACILITY DECOMMISSIONING
BUILDING 575
DETAILED COST BREAKDOWN*

Diversified Scientific Services Inc.
 P.O.Box 863
 Kingston, Tennessee 37763

July 10, 1990

Title:

E. I. DUPONT DE NEMOURS, INC.
 BOSTON, MASS
 FACILITY DECOMMISSIONING BUILDING 575
 DETAILED COST BREAKDOWN

PROPOSAL RECAP	Total
Labor Hours	17,798
Direct Labor	302,160
Labor Overhead	483,456
Consumables	131,010
Material Acquisition	0
T S & L	304,636
Subcontracted items	19,765
Total Direct Costs	1,241,027
G & A	192,359
Total Costs	1,433,386
Equipment Rental	45,372
Profit	286,677
Contingency	0
Price	1,765,436

Diversified Scientific Services Inc.
 P.O.Box 863
 Kingston, Tennessee 37763

July 10, 1990

Title: E. I. DUPONT DE NEMOURS, INC.
 BOSTON, MASS
 FACILITY DECOMMISSIONING BUILDING 575
 DETAILED COST BREAKDOWN

Task	Job Classification	Hours		Rate	Amount	Overhead	G & A	Total Cost	Profit	Price
		S/T	O/T							
	Corporate Management	83		53.46	4,437	7,099	1,788	13,325	2,665	15,990
	Corporate RESO	157		42.90	6,735	10,776	2,714	20,226	4,045	24,271
	Mgr. Field Operation	206		36.64	7,548	12,078	3,042	22,668	4,534	27,202
	Project Mgr	852		33.33	28,397	45,435	11,444	85,277	17,055	102,332
	Health & Safety Mgr.	822		30.03	24,685	39,495	9,948	74,128	14,826	88,954
	Clerk	792		12.54	9,932	15,891	4,002	29,825	5,965	35,790
	Shift Supervisor	822		17.82	14,648	23,437	5,903	43,988	8,798	52,786
	HP Foreman	822		17.16	14,106	22,569	5,685	42,359	8,472	50,831
	Decon Foreman	822		17.16	14,106	22,569	5,685	42,359	8,472	50,831
	HP Tech	5,814		13.86	80,582	128,931	32,475	241,988	48,398	290,385
	Decon Tech	4,962		13.86	68,773	110,037	27,716	206,526	41,305	247,832
	Plumber	822		17.16	14,106	22,569	5,685	42,359	8,472	50,831
	Electrician	822		17.16	14,106	22,569	5,685	42,359	8,472	50,831
		17,798			302,160	483,456	121,770	907,386	181,477	1,088,864
	TOTAL LABOR	17,798			302,160	483,456	121,770	907,386	181,477	1,088,864

Diversified Scientific Services Inc.
 P.O.Box 863
 Kingston, Tennessee 37763

July 10, 1990

Title: E. I. DUPONT DE NEMOURS, INC.
 BOSTON, MASS
 FACILITY DECOMMISSIONING BUILDING 575
 DETAILED COST BREAKDOWN

TRAVEL, SUBSISTANCE, AND LODGING

	Quantity	Rate	Amount	Overhead	G & A	Total Cost	Profit	Price

Airfare:								
Per Round-trip	120	800.00	96,000		14,880	110,880	22,176	133,056
Per Diem "A"								
Per Day	45	125.00	5,625		872	6,497	1,299	7,796
Per Diem "B"								
Per Day	428	75.00	32,100		4,976	37,076	7,415	44,491
Per Diem "C"								
Per Day	2,558	65.00	166,270		25,772	192,042	38,408	230,450
Personal Auto								
Per Mile	11,550	0.22	2,541		394	2,935	587	3,522
Car Rental								
Per Day	30	70.00	2,100		326	2,426	485	2,911

TOTAL TS&L			304,636		47,219	351,855	70,371	422,225
=====								

Diversified Scientific Services Inc.
P.O.Box 863
Kingston, Tennessee 37763

July 10, 1990

Title: E. I. DUPONT DE NEMOURS, INC.
BOSTON, MASS
FACILITY DECOMMISSIONING BUILDING 575
DETAILED COST BREAKDOWN

CONSUMABLES		Unit							
Item No.	Description	Quantity	Cost	Amount	Overhead	G & A	Cost	Profit	Price
1	Personnel Clothing	1,584	7.50	11,880	0	1,841	13,721	2,744	16,466
2	Cotton Rags	82	1.50	123	0	19	142	28	170
3	Utility Cleaner	16	25.00	400	0	62	462	92	554
4	Anti-C Gloves	1,584	0.85	1,346	0	209	1,555	311	1,866
5	Respirator Cartridges	32	6.00	192	0	30	222	44	266
6	Safety Boots	16	70.00	1,120	0	174	1,294	259	1,552
7	Safety Glasses	32	5.00	160	0	25	185	37	222
8	Hard Hats	16	8.50	136	0	21	157	31	188
9	Safety Signs/Rope	1	50.00	50	0	8	58	12	69
10	Misc Tools	1	500.00	500	0	78	578	116	693
11	Duct Tape	25	150.00	3,750	0	581	4,331	866	5,198
12	Plastic	15	55.00	825	0	128	953	191	1,143
13	Urine Sample Bottles	40	4.50	180	0	28	208	42	249
14	Leather Palm Gloves	320	2.50	800	0	124	924	185	1,109
15	Misc Office Supplies	1	1,000.00	1,000	0	155	1,155	231	1,386
16	First Aid Kits	1	35.00	35	0	5	40	8	49
17	Gator Ade	20	41.00	820	0	127	947	189	1,137
18	Water Cooler	1	55.00	55	0	9	64	13	76
19	Ice	99	1.25	124	0	19	143	29	172
20	Push Brooms	2	15.00	30	0	5	35	7	42
21	Mops Heads	20	27.50	550	0	85	635	127	762
22	Mop Bucket	2	47.50	95	0	15	110	22	132
23	Mop Wringer	2	62.50	125	0	19	144	29	173
24	Misc Cleaning Supplies	1	600.00	600	0	93	693	139	832
25	Extension Cords	4	35.00	140	0	22	162	32	194
26	Fire Extinguishers	2	18.54	37	0	6	43	9	51
27	Coffee	20	9.49	190	0	29	219	44	263
28	Survey Meter Repair Part	1	1,000.00	1,000	0	155	1,155	231	1,386
29	55 Gallon Drums	15	45.00	675	0	105	780	156	936
30	Drum Liners	15	2.50	38	0	6	43	9	52
31	Plastic Bags	495	0.70	347	0	54	400	80	480
32	Maslin	20	65.00	1,300	0	202	1,502	300	1,802
33	Smears	100,783	0.20	20,157	0	3,124	23,281	4,656	27,937
34	Smear Cocktail	576	85.00	48,960	0	7,589	56,549	11,310	67,859
35	Vials	100,783	0.18	18,141	0	2,812	20,953	4,191	25,143
36	Oil Dry	15	4.75	71	0	11	82	16	99
37	Lumber	1	750.00	750	0	116	866	173	1,040
38	Lab Coats	200	1.50	300	0	47	347	69	416
39	Electrical Tape	1	45.00	45	0	7	52	10	62
40	Airline Kit	1	150.00	150	0	23	173	35	208
41	Harnesses	6	15.00	90	0	14	104	21	125
42	Rope (nylon)	1,000	0.40	400	0	62	462	92	554

Diversified Scientific Services Inc.
 P.O.Box 863
 Kingston, Tennessee 37763

July 10, 1990

Title: E. I. DUPONT DE NEMOURS, INC.
 BOSTON, MASS
 FACILITY DECOMMISSIONING BUILDING 575
 DETAILED COST BREAKDOWN

43 Spray Adhesive	7	28.50	200	0	31	230	46	277
44 M-43-20 Replacement Windows	75	30.00	2,250	0	349	2,599	520	3,119
45 M44-9 Replacement Windows	75	90.00	6,750	0	1,046	7,796	1,559	9,356
46 Oxygen/Acetylene	1	2,000.00	2,000	0	310	2,310	462	2,772
47 L.P. Fuel	1	900.00	900	0	140	1,040	208	1,247
48 Batteries (D-cell)	90	2.50	225	0	35	260	52	312
49 P-10 Gas	1	1,000.00	1,000	0	155	1,155	231	1,386
TOTAL CONSUMABLES			131,010	0	20,307	151,317	30,263	181,580

Diversified Scientific Services Inc.

P.O.Box 863

Kingston, Tennessee 37763

July 10, 1990

Title:

E. I. DUPONT DE NEMOURS, INC.

BOSTON, MASS

FACILITY DECOMMISSIONING BUILDING 575

DETAILED COST BREAKDOWN

EQUIPMENT RENTAL

Days in Use: 139

Item No.	Description	Quantity	Rate	Amount	Overhead	G & A	Total Cost	Profit	Price
1	HEPA Vacuums	2	4.88	1,357			1,357		1,357
2	Model 3 Survey Meter	15	1.43	2,982			2,982		2,982
3	Model 44-9 Probe	15	0.90	1,877			1,877		1,877
4	Pallet Jack	2	1.95	542			542		542
5	Drum Cart	1	0.91	126			126		126
6	Roll Around Cart	1	0.62	86			86		86
7	Skill Saw	2	0.62	172			172		172
8	Ladders	4	0.74	411			411		411
9	Typewriter	1	1.83	254			254		254
10	PC/Printer/Software	1	20.31	2,823			2,823		2,823
11	File Cabinet	3	0.71	296			296		296
12	Coffee Maker	2	0.62	172			172		172
13	Sawz-all	2	0.90	250			250		250
14	Respirators (Full)	10	0.71	987			987		987
15	Respirators (1/2 Face)	15	0.14	292			292		292
16	Negative Air Machine	2	8.13	2,260			2,260		2,260
17	Copy Machine	1	10.15	1,411			1,411		1,411
18	Air Line (1/4")	3	0.15	63			63		63
19	Air Hammer (Small)	8	0.62	689			689		689
20	Needle Gun	2	0.82	228			228		228
21	Air Stapler	1	1.02	142			142		142
22	FAX Machine	1	10.15	1,411			1,411		1,411
23	Compressor	2	6.50	1,807			1,807		1,807
24	Fork Lift	1	64.99	9,034			9,034		9,034
25	Demolition Saw	1	3.25	452			452		452
26	Floor Tile Machine	1	2.54	353			353		353
27	Floor Scabbler	1	36.15	5,025			5,025		5,025
28	Air Hammer (Large)	1	1.63	227			227		227
29	Model 43-20 Probe	10	1.53	2,127			2,127		2,127
30	Temporary Lighting	5	1.02	709			709		709
31	Portable Heaters	10	0.51	709			709		709
32	Model 239-17 Floor Monitor	1	11.38	1,582			1,582		1,582
33	Job Truck	1	32.50	4,518			4,518		4,518
				45,372		0	45,372	0	45,372

Diversified Scientific Services Inc.
 P.O.Box 863
 Kingston, Tennessee 37763

July 10, 1990

Title: E. I. DUPONT DE NEMOURS, INC.
 BOSTON, MASS
 FACILITY DECOMMISSIONING BUILDING 575
 DETAILED COST BREAKDOWN

SUBCONTRACTED ITEMS

Item No.	Description	Quantity	Rate	Amount	Overhead	G & A	Total Cost	Profit	Price
1	Health Exams	13	280.00	3,640		564	4,204	841	5,045
2	Instrument Calibration	11	275.00	3,025		469	3,494	699	4,193
3	Equipment Shipment	1	1,250.00	1,250		194	1,444	289	1,733
4	Federal Express	20	50.00	1,000		155	1,155	231	1,386
5	Urinalysis	105	60.00	6,300		977	7,277	1,455	8,732
6	Whole Body Counts	13	350.00	4,550		705	5,255	1,051	6,306
				19,765		3,064	22,829	4,566	27,394

Diversified Scientific Services Inc.
 P.O.Box 863
 Kingston, Tennessee 37763

July 10, 1990

Title: E. I. DUPONT DE NEMOURS, INC.
 BOSTON, MASS
 FACILITY DECOMMISSIONING BUILDING 575
 DETAILED COST BREAKDOWN

Diversified Scientific Services Inc. Rate Table

Labor Grade	Salary Rate	Benefited Rate
Corporate Management	40.50	53.46
Corporate RESO	32.50	42.90
Mgr. Field Operation	27.76	36.64
Project Mgr	25.25	33.33
Health & Safety Mgr.	22.75	30.03
Clerk	9.50	12.54
Shift Supervisor	13.50	17.82
HP Foreman	13.00	17.16
Decon Foreman	13.00	17.16
HP Tech	10.50	13.86
Decon Tech	10.50	13.86
Plumber	13.00	17.16
Electrician	13.00	17.16

Fringe Benefit Rate	32.0%	
Material Overhead	0.0%	
Labor Overhead	160.0%	(Used for some calculations)
G & A	15.5%	15.5%
Profit	20.0%	0.0%
Airfare (RT)	0.0%	
Per Diem "A"	0.0%	
Per Diem "B"	0.0%	
Per Diem "C"	0.0%	
Car Rental	0.0%	



E.I. DU PONT DE NEMOURS & CO. (INC.)
 MEDICAL PRODUCTS DEPARTMENT

RECEIVED

July 30, 1990

United States Nuclear Regulatory Commission
 Region I
 475 Allendale Road
 King of Prussia, PA 19406

Attn: John D. Kinneman, Chief
 Nuclear Materials Safety Section B
 Division of Radiation Safety and Safeguards

RECEIVED
 90 AUG -6 P3:46
 U.S. NRC
 NUCLEAR MATERIALS SAFETY SECTION B

Reference: Materials License No. 20-00320-21

Gentlemen:

This is written in conformance with the regulatory requirements of Title 10 CFR Part 30, Section 30.35(c)(2).

Citibank, N.A. has established a Letter of Credit No. NY-0881-30007170 for the Du Pont Greater Boston Area site. This Letter of Credit is in the amount of \$12,000,000.00 and is submitted to your office as a certification of financial assurance for decommissioning.

In order to meet the deadline, Citibank faxed the Letter of Credit and appendices to the Region I offices at Fax No. 215-337-5269 on Friday July 27, 1990.

A copy of the Letter of Credit and appendices is attached to this request for a license amendment.

A Decommissioning Funding Plan is being compiled for us by an outside contractor and is the source of the initial estimate of the cost of decommissioning of approximately \$12,000,000.00. The final Decommissioning Funding Plan will be submitted with our request for license renewal for the Materials License 20-00320-21 with an expiration date of November 30, 1990.

Enclosed you will find the payment for the amendment processing fee of \$180.00 as specified for License Fee Category 3A in the regulations of 10 CFR Part 170, Section 170.31.

Please contact me if you require any additional information.

Sincerely,

Francis E. Roy Jr.
 Francis E. Roy Jr.
 Health Physicist

Telephone: (508) 671-8242

Log	Aug 13 I
Remitter	
Check No.	04287510 and 04287512
Amount	\$120 and \$120
Fee Category	3A 3N
Type of Fee	and
Date Check Rec'd.	8/6/90
Date Completed	8/9/90
By:	AK

* Referred \$240 per IN 90-38.

MEDICAL PRODUCTS DEPARTMENT
 331 Treble Cove Road, No. Billerica, MA 01862 Telephone 508-667-9531

HARD COPY
 JUL 31 1990

OFFICIAL RECORD COPY ML 10

RECONTROLLED
 VOIDED 9/19/90
 #3067 113360

NORTH AMERICAN FINANCE GROUP - TRADE FINANCIAL SERVICES
 SORT # 5878
 111 WALL STREET NEW YORK, NY 10043

JULY 26, 1990

U.S. NUCLEAR REGULATORY
 COMMISSION
 WASHINGTON, DC 20555

REF: IRREVOCABLE LETTER OF CREDIT NO. NY-0881-30007170

GENTLEMEN:

WE HEREBY ESTABLISH OUR IRREVOCABLE STANDBY LETTER OF CREDIT NO. NY-0881-30007170 IN YOUR FAVOR, AT THE REQUEST AND FOR THE ACCOUNT OF E. I. DU PONT DE NEMOURS & COMPANY ("DU PONT"), GREATER BOSTON AREA SITE, LICENSE #20-00320-21 UP TO THE AGGREGATE AMOUNT OF TWELVE MILLION U.S. DOLLARS, \$12,000,000.00, AVAILABLE UPON PRESENTATION OF:

- (1) YOUR SIGHT DRAFT, BEARING REFERENCE TO THIS LETTER OF CREDIT NO. NY-0881-30007170, AND
- (2) YOUR SIGNED STATEMENT READING AS FOLLOWS: "I CERTIFY THAT THE AMOUNT OF THE DRAFT IS PAYABLE PURSUANT TO REGULATIONS ISSUED UNDER AUTHORITY OF U.S. NRC."

THIS LETTER OF CREDIT IS ISSUED IN ACCORDANCE WITH REGULATIONS ISSUED UNDER THE AUTHORITY OF THE U.S. NUCLEAR REGULATORY COMMISSION (NRC), AN AGENCY OF THE U.S. GOVERNMENT, PURSUANT TO THE ATOMIC ENERGY ACT OF 1954, AS AMENDED, AND THE ENERGY REORGANIZATION ACT OF 1974. THE NRC HAS PROMULGATED REGULATIONS IN TITLE 10, CHAPTER 1 OF THE CODE OF FEDERAL REGULATIONS, PART 30, WHICH REQUIRE THAT A HOLDER OF, OR AN APPLICANT FOR, A LICENSE ISSUED UNDER 10 CFR PART 30 PROVIDE ASSURANCE THAT FUNDS WILL BE AVAILABLE WHEN NEEDED FOR DECOMMISSIONING.

THIS LETTER OF CREDIT IS EFFECTIVE AS OF JULY 27, 1990 AND SHALL EXPIRE ON JULY 27, 1991, BUT SUCH EXPIRATION DATE SHALL BE AUTOMATICALLY EXTENDED FOR A PERIOD OF AT LEAST ONE YEAR ON JULY 27, 1991 AND ON EACH SUCCESSIVE EXPIRATION DATE, UNLESS, AT LEAST 90 DAYS BEFORE THE CURRENT EXPIRATION DATE, WE NOTIFY BOTH YOU AND DU PONT, GREATER BOSTON AREA SITE, AS SHOWN ON THE SIGNED RETURN RECEIPTS, IF DU PONT, GREATER BOSTON AREA SITE IS UNABLE TO SECURE ALTERNATIVE FINANCIAL ASSURANCE TO REPLACE THE LETTER OF CREDIT WITHIN 30 DAYS OF NOTIFICATION OF CANCELLATION THE NRC MAY DRAW UPON THE FULL VALUE OF THIS LETTER OF CREDIT PRIOR TO CANCELLATION. THE BANK SHALL GIVE IMMEDIATE NOTICE TO THE APPLICANT AND THE NRC OF ANY NOTICE RECEIVED OR ACTION FILED ALLEGING (1) THE INSOLVENCY OR BANKRUPTCY OF THE FINANCIAL

OFFICIAL RECORD CO.

JUL 27 1990

113007
 113360

JUL 27 1990

SEE NEXT PAGE

INSTITUTION OR (2) ANY VIOLATIONS OF REGULATORY REQUIREMENTS THAT COULD RESULT IN SUSPENSION OR REVOCATION OF THE BANK'S CHARTER LICENSE TO DO BUSINESS. THE FINANCIAL INSTITUTION ALSO SHALL GIVE IMMEDIATE NOTICE IF THE BANK, FOR ANY REASON, BECOMES UNABLE TO FULFILL ITS OBLIGATIONS UNDER THE LETTER OF CREDIT.

WHENEVER THIS LETTER OF CREDIT IS DRAWN ON AND IN COMPLIANCE WITH THE TERMS OF THIS LETTER OF CREDIT, WE SHALL DULY HONOR SUCH DRAFT UPON ITS PRESENTATION TO US WITHIN 30 DAYS, AND WE SHALL DEPOSIT THE AMOUNT OF THE DRAFT DIRECTLY INTO THE STANDBY TRUST FUND OF DU PONT, GREATER BOSTON AREA SITE IN ACCORDANCE WITH YOUR INSTRUCTIONS.

EACH DRAFT MUST BEAR ON ITS FACE THE CLAUSE: "DRAWN UNDER LETTER OF CREDIT NO. NY-0881-30007170, DATED JULY 26, 1990, AND THE TOTAL OF THIS DRAFT AND ALL OTHER DRAFTS PREVIOUSLY DRAWN UNDER THIS LETTER OF CREDIT DOES NOT EXCEED TWELVE MILLION U.S. DOLLARS, \$12,000,000.00."

EXCEPT AS FAR AS OTHERWISE EXPRESSLY STATED HEREIN, THIS LETTER OF CREDIT IS SUBJECT TO THE UNIFORM CUSTOMS AND PRACTICE FOR DOCUMENTARY CREDITS (1983 REVISION) INTERNATIONAL CHAMBER OF COMMERCE PUBLICATIONS NO. 400

CITIBANK N.A.

James LeVay
AUTHORIZED SIGNATURE

JAMES LeVAY, S. B. O.
North American Trade Services
111 Wall St./3rd FL./Zone 11
(212) 657-9422

IRREVOCABLE STANDBY LETTER OF CREDIT NO.

This Credit Expires July 27, 1991

Issued to: U.S. Nuclear Regulatory Commission; Washington, DC 20555

Dear Sir or Madam:

We hereby establish our Irrevocable Standby Letter of Credit No. _____ in your favor, at the request and for the account of E. I. du Pont de Nemours & Company ("Du Pont"), Greater Boston Area Site, License #20-00320-21 up to the aggregate amount of Twelve Million U.S. Dollars, \$12,000,000.00 available upon presentation of:

- (1) your sight draft, bearing reference to this Letter of Credit No. _____, and
- (2) your signed statement reading as follows: "I certify that the amount of the draft is payable pursuant to regulations issued under authority of U.S. NRC."

This letter of credit is issued in accordance with regulations issued under the authority of the U.S. Nuclear Regulatory Commission (NRC), an agency of the U.S. Government, pursuant to the Atomic Energy Act of 1954, as amended, and the Energy Reorganization Act of 1974. The NRC has promulgated regulations in Title 10, Chapter I of the Code of Federal Regulations, Part 30, which require that a holder of, or an applicant for, a license issued under 10 CFR Part 30 provide assurance that funds will be available when needed for decommissioning.

This letter of credit is effective as of July 27, 1990 and shall expire on July 27, 1991, but such expiration date shall be automatically extended for a period of at least one year on July 27, 1991 and on each successive expiration date, unless, at least 90 days before the current expiration date, we notify both you and Du Pont, Greater Boston Area Site, as shown on the signed return receipts. If Du Pont, Greater Boston Area Site is unable to secure alternative financial assurance to replace this letter of credit within 30 days of notification of cancellation the NRC may draw upon the full value of this letter of credit prior to cancellation. The bank shall give immediate notice to the applicant and the NRC of any notice received or action filed alleging (1) the insolvency or bankruptcy of the financial institution or (2) any violations of regulatory requirements that could result in suspension or revocation of the bank's charter license to do business. The financial institution also shall give immediate notice if the bank, for any reason, becomes unable to fulfill its obligation under the letter of credit.

Exhibit - A

Irrevocable Standby Letter of Credit (Continued)

Whenever this letter of credit is drawn on under and in compliance with the terms of this letter of credit, we shall duly honor such draft upon its presentation to us within 30 days, and we shall deposit the amount of the draft directly into the standby trust fund of Du Pont, Greater Boston Area Site in accordance with your instructions.

Each draft must bear on its face the clause: "Drawn under Letter of Credit No. _____, dated _____, and the total of this draft and all other drafts previously drawn under this letter of credit does not exceed Twelve Million U.S. Dollars, \$12,000,000.00.

[Signature(s) and title(s) of officials(s) of issuing institution]

[Date]

This credit is subject to the Uniform Customs and Practice for Documentary Credits, (1983 Revision) published by the International Chamber of Commerce, (Publication Number 400).

Citibank, N.A.

NORTH AMERICAN FINANCE GROUP - TRADE FINANCIAL SERVICES
SORT # 5878
111 WALL STREET NEW YORK, NY 10043

JULY 26, 1990

U.S. NUCLEAR REGULATORY
COMMISSION
WASHINGTON, DC 20555

REF: IRREVOCABLE LETTER OF CREDIT NO. NY-0881-30007170

GENTLEMEN:

WE HEREBY ESTABLISH OUR IRREVOCABLE STANDBY LETTER OF CREDIT NO. NY-0881-30007170 IN YOUR FAVOR, AT THE REQUEST AND FOR THE ACCOUNT OF E.I. DU PONT DE NEMOURS & COMPANY ("DU PONT"), GREATER BOSTON AREA SITE, LICENSE #20-00320-21 UP TO THE AGGREGATE AMOUNT OF TWELVE MILLION U.S. DOLLARS, \$12,000,000.00, AVAILABLE UPON PRESENTATION OF:

- (1) YOUR SIGHT DRAFT, BEARING REFERENCE TO THIS LETTER OF CREDIT NO. NY-0881-30007170, AND
- (2) YOUR SIGNED STATEMENT READING AS FOLLOWS: "I CERTIFY THAT THE AMOUNT OF THE DRAFT IS PAYABLE PURSUANT TO REGULATIONS ISSUED UNDER AUTHORITY OF U.S. NRC."

THIS LETTER OF CREDIT IS ISSUED IN ACCORDANCE WITH REGULATIONS ISSUED UNDER THE AUTHORITY OF THE U.S. NUCLEAR REGULATORY COMMISSION (NRC), AN AGENCY OF THE U.S. GOVERNMENT, PURSUANT TO THE ATOMIC ENERGY ACT OF 1954, AS AMENDED, AND THE ENERGY REORGANIZATION ACT OF 1974. THE NRC HAS PROMULGATED REGULATIONS IN TITLE 10, CHAPTER 1 OF THE CODE OF FEDERAL REGULATIONS, PART 30, WHICH REQUIRE THAT A HOLDER OF, OR AN APPLICANT FOR, A LICENSE ISSUED UNDER 10 CFR PART 30 PROVIDE ASSURANCE THAT FUNDS WILL BE AVAILABLE WHEN NEEDED FOR DECOMMISSIONING.

THIS LETTER OF CREDIT IS EFFECTIVE AS OF JULY 27, 1990 AND SHALL EXPIRE ON JULY 27, 1991, BUT SUCH EXPIRATION DATE SHALL BE AUTOMATICALLY EXTENDED FOR A PERIOD OF AT LEAST ONE YEAR ON JULY 27, 1991 AND ON EACH SUCCESSIVE EXPIRATION DATE, UNLESS, AT LEAST 90 DAYS BEFORE THE CURRENT EXPIRATION DATE, WE NOTIFY BOTH YOU AND DU PONT, GREATER BOSTON AREA SITE, AS SHOWN ON THE SIGNED RETURN RECEIPTS, IF DU PONT, GREATER BOSTON AREA SITE IS UNABLE TO SECURE ALTERNATIVE FINANCIAL ASSURANCE TO REPLACE THE LETTER OF CREDIT WITHIN 30 DAYS OF NOTIFICATION OF CANCELLATION THE NRC MAY DRAW UPON THE FULL VALUE OF THIS LETTER OF CREDIT PRIOR TO CANCELLATION. THE BANK SHALL GIVE IMMEDIATE NOTICE TO THE APPLICANT AND THE NRC OF ANY NOTICE RECEIVED OR ACTION FILED ALLEGING (1) THE INSOLVENCY OR BANKRUPTCY OF THE FINANCIAL

SEE NEXT PAGE

INSTITUTION OR (2) ANY VIOLATIONS OF REGULATORY REQUIREMENTS THAT COULD RESULT IN SUSPENSION OR REVOCATION OF THE BANK'S CHARTER LICENSE TO DO BUSINESS. THE FINANCIAL INSTITUTION ALSO SHALL GIVE IMMEDIATE NOTICE IF THE BANK, FOR ANY REASON, BECOMES UNABLE TO FULFILL ITS OBLIGATIONS UNDER THE LETTER OF CREDIT.

WHENEVER THIS LETTER OF CREDIT IS DRAWN ON AND IN COMPLIANCE WITH THE TERMS OF THIS LETTER OF CREDIT, WE SHALL DULY HONOR SUCH DRAFT UPON ITS PRESENTATION TO US WITHIN 30 DAYS, AND WE SHALL DEPOSIT THE AMOUNT OF THE DRAFT DIRECTLY INTO THE STANDBY TRUST FUND OF DU PONT, GREATER BOSTON AREA SITE IN ACCORDANCE WITH YOUR INSTRUCTIONS.

EACH DRAFT MUST BEAR ON ITS FACE THE CLAUSE: "DRAWN UNDER LETTER OF CREDIT NO. NY-0281-30007170, DATED JULY 26, 1990, AND THE TOTAL OF THIS DRAFT AND ALL OTHER DRAFTS PREVIOUSLY DRAWN UNDER THIS LETTER OF CREDIT DOES NOT EXCEED TWELVE MILLION U.S. DOLLARS, \$12,000,000.00."

EXCEPT AS FAR AS OTHERWISE EXPRESSLY STATED HEREIN, THIS LETTER OF CREDIT IS SUBJECT TO THE UNIFORM CUSTOMS AND PRACTICE FOR DOCUMENTARY CREDITS (1983 REVISION) INTERNATIONAL CHAMBER OF COMMERCE PUBLICATIONS NO. 400

CITIBANK N.A.

James LeVay
AUTHORIZED SIGNATURE.

JAMES LEVAY, S. J. O.
North American Trade Services
11 West 61st Street
(212) 512-3422

[Handwritten mark]

IRREVOCABLE STANDBY LETTER OF CREDIT NO.

This Credit Expires July 27, 1991

Issued to: U.S. Nuclear Regulatory Commission; Washington, DC 20555

Dear Sir or Madam:

We hereby establish our Irrevocable Standby Letter of Credit No. _____ in your favor, at the request and for the account of E. I. du Pont de Nemours & Company ("Du Pont"), Greater Boston Area Site, License #20-00320-21, up to the aggregate amount of Twelve Million U.S. Dollars, \$12,000,000.00 available upon presentation of:

- (1) your sight draft, bearing reference to this Letter of Credit No. _____, and
- (2) your signed statement reading as follows: "I certify that the amount of the draft is payable pursuant to regulations issued under authority of U.S. NRC."

This letter of credit is issued in accordance with regulations issued under the authority of the U.S. Nuclear Regulatory Commission (NRC), an agency of the U.S. Government, pursuant to the Atomic Energy Act of 1954, as amended, and the Energy Reorganization Act of 1974. The NRC has promulgated regulations in Title 10, Chapter I of the Code of Federal Regulations, Part 30, which require that a holder of, or an applicant for, a license issued under 10 CFR Part 30 provide assurance that funds will be available when needed for decommissioning.

This letter of credit is effective as of July 27, 1990 and shall expire on July 27, 1991, but such expiration date shall be automatically extended for a period of at least one year on July 27, 1991 and on each successive expiration date, unless, at least 90 days before the current expiration date, we notify both you and Du Pont, Greater Boston Area Site, as shown on the signed return receipts. If Du Pont, Greater Boston Area Site is unable to secure alternative financial assurance to replace this letter of credit within 30 days of notification of cancellation the NRC may draw upon the full value of this letter of credit prior to cancellation. The bank shall give immediate notice to the applicant and the NRC of any notice received or action filed alleging (1) the insolvency or bankruptcy of the financial institution or (2) any violations of regulatory requirements that could result in suspension or revocation of the bank's charter license to do business. The financial institution also shall give immediate notice if the bank, for any reason, becomes unable to fulfill its obligation under the letter of credit.

Irrevocable Standby Letter of Credit (Continued)

Whenever this letter of credit is drawn on under and in compliance with the terms of this letter of credit, we shall duly honor such draft upon its presentation to us within 30 days, and we shall deposit the amount of the draft directly into the standby trust fund of Du Pont, Greater Boston Area Site in accordance with your instructions.

Each draft must bear on its face the clause: "Drawn under Letter of Credit No. _____, dated _____, and the total of this draft and all other drafts previously drawn under this letter of credit does not exceed Twelve Million U.S. Dollars, \$12,000,000.00."

[Signature(s) and title(s) of official(s) of issuing institution]

[Date]

This credit is subject to the Uniform Customs and Practice for Documentary Credits, (1983 Revision) published by the International Chamber of Commerce, (Publication Number 400).

STANDBY TRUST AGREEMENT

TRUST AGREEMENT, the Agreement entered into as of July 27, 1990 by and between E. I. du Pont de Nemours and Company ("Du Pont"), Greater Boston Area Site, herein referred to as the "Grantor," and Citibank, N.A., the "Trustee."

WHEREAS, the U.S. Nuclear Regulatory Commission (NRC), an agency of the U.S. Government, pursuant to the Atomic Energy Act of 1954, as amended, and the Energy Reorganization Act of 1974, has promulgated regulations in Title 10, Chapter I of the Code of Federal Regulations, Part 30. These regulations, applicable to the Grantor, require that a holder of, or an applicant for, a Part 30, license provide assurance that funds will be available when needed for required decommissioning activities.

WHEREAS, the Grantor has elected to use a Standby Letter of Credit to provide all of such financial assurance for the facilities identified herein; and

WHEREAS, when payment is made under a Standby Letter of Credit, this standby trust shall be used for the receipt of such payment; and

WHEREAS, the Grantor, acting through its duly authorized officers, has selected the Trustee to be the trustee under this Agreement, and the Trustee is willing to act as trustee,

NOW, THEREFORE, the Grantor and the Trustee agree as follows:

Section 1. Definitions. As used in this Agreement:

- (a) The term "Grantor" means the NRC licensee who enters into this Agreement and any successors or assigns of the Grantor.
- (b) The term "Trustee" means the trustee who enters into this Agreement and any successor Trustee.

Section 2. Cost of Decommissioning. This Agreement pertains to the costs of decommissioning the materials and activities identified in License Number 20-00320-21 issued pursuant to 10 CFR Part 30 as shown in Schedule A.

Section 3. Establishment of Fund. The Grantor and the Trustee hereby establish a standby trust fund (the Fund) for the benefit of the NRC. The Grantor and the Trustee intend that no third party have access to the Fund except as provided herein.

Section 4. Payments Constituting the Fund. Payments made to the Trustee for the Fund shall consist of cash, securities, or other liquid assets acceptable to the Trustee. The Fund is established initially as consisting of the property, which is acceptable to the Trustee, described in Schedule B attached hereto. Such property and any other property subsequently transferred

to the Trustee are referred to as the "Fund," together with all earnings and profits thereon, less any payments or distributions made by the Trustee pursuant to this Agreement. The Fund shall be held by the Trustee, IN TRUST, as hereinafter provided. The Trustee shall not be responsible nor shall it undertake any responsibility for the amount of, or adequacy of the Fund, nor any duty to collect from the Grantor, any payments necessary to discharge any liabilities of the Grantor established by the NRC.

Section 5. Payment for Required Activities Specified in the Plan.

The Trustee shall make payments from the Fund to the Grantor upon presentation to the Trustee of the following:

- a. A certificate duly executed by the Secretary of the Depositor attesting to the occurrence of the events, and in the form set forth in the attached Specimen Certificate, and
- b. A certificate attesting to the following conditions:
 - (1) that decommissioning is proceeding pursuant to an NRC-approved plan,
 - (2) that the funds withdrawn will be expended for activities undertaken pursuant to that Plan, and
 - (3) that the NRC has been given 30 days' prior notice of Du Pont's intent to withdraw funds from the escrow fund.

No withdrawal from the fund can exceed ten percent (10%) of the outstanding balance of the Fund or One Million Two Hundred Thousand Dollars (\$1,200,000), whichever is greater, unless NRC approval is attached.

In the event of the Grantor's default or inability to direct decommissioning activities, the Trustee shall make payments from the Fund as the NRC shall direct, in writing, to provide for the payment of the costs of required activities covered by this Agreement. The Trustee shall reimburse the Grantor or other persons as specified by the NRC from the Fund for expenditures for required activities in such amounts as the NRC shall direct in writing. In addition, the Trustee shall refund to the Grantor such amounts as the NRC specifies in writing. Upon refund, such funds shall no longer constitute part of the Fund as defined herein.

Section 6. Trust Management. The Trustee shall invest and reinvest the principal and income of the Fund and keep the Fund invested as a single fund, without distinction between principal and income, in accordance with general investment policies and guidelines which the Grantor may communicate in writing to the Trustee from time to time, subject, however, to the provisions of this section. In investing, reinvesting, exchanging, selling and managing the Fund, the Trustee shall discharge its duties with respect to the Fund solely in the interest of the beneficiary and with the care, skill, prudence, and diligence under the circumstances then prevailing which persons of

prudence, acting in a like capacity and familiar with such matters, would use in the conduct of an enterprise of a like character and with like aims; except that:

- (a) Securities or other obligations of the Grantor, or any other owner or operator of the facilities, or any of their affiliates as defined in the Investment Company Act of 1940, as amended (15 U.S.C. 80a-2(a)), shall not be acquired or held, unless they are securities or other obligations of the Federal or a State government;
- (b) The Trustee is authorized to invest the Fund in time or demand deposits of the Trustee, to the extent insured by an agency of the Federal government; and
- (c) For a reasonable time, not to exceed 60 days, the Trustee is authorized to hold uninvested cash, awaiting investment or distribution, without liability for the payment of interest thereon.

Section 7. Commingling and Investment. The Trustee is expressly authorized in its discretion:

- (a) To transfer from time to time any or all of the assets of the fund to any common, commingled, or collective trust fund created by the Trustee in which the Fund is eligible to participate, subject to all of the provisions thereof, to be commingled with the assets of other trusts participating therein; and
- (b) To purchase shares in any investment company registered under the Investment Company Act of 1940 (15 U.S.C. 80a-1 et seq.), including one that may be created, managed, underwritten, or to which investment advice is rendered, or the shares of which are sold by the Trustee. The Trustee may vote such shares in its discretion.

Section 8. Express Powers of Trustee. Without in any way limiting the powers and discretion conferred upon the Trustee by the other provisions of this Agreement or by law, the Trustee is expressly authorized and empowered:

- (a) To sell, exchange, convey, transfer, or otherwise dispose of any property held by it, by public or private sale, as necessary for prudent management of the Fund;
- (b) To make, execute, acknowledge, and deliver any and all documents of transfer and conveyance and any and all other instruments that may be necessary or appropriate to carry out the powers herein granted;
- (c) To register any securities held in the Fund in its own name, or in the name of a nominee, and to hold any security in bearer form or in book entry, or to combine certificates representing such securities with certificates of the same issue held by the Trustee in other fiduciary capacities, to reinvest interest payments and funds from matured and redeemed instruments, to file proper forms concerning securities held

in the Fund in a timely fashion with appropriate government agencies, or to deposit or arrange for the deposit of such securities in a qualified central depository even though, when so deposited, such securities may be merged and held in bulk in the name of the nominee or such depository with other securities deposited therein by another person, or to deposit or arrange for the deposit of any securities issued by the U.S. Government, or any agency or instrumentality thereof, with a Federal Reserve bank, but the books and records of the Trustee shall at all times show that all such securities are part of the Fund;

- (d) To deposit any cash in the Fund in interest-bearing accounts maintained or savings certificates issued by the Trustee, in its separate corporate capacity, or in any other banking institution affiliated with the Trustee, to the extent insured by an agency of the Federal government; and
- (e) To compromise or otherwise adjust all claims in favor of or against the Fund.

Section 9. Taxes and Expenses. All taxes of any kind that may be assessed or levied against or in respect of the Fund and all brokerage commissions incurred by the Fund shall be paid from the Fund. All other expenses incurred by the Trustee in connection with the administration of this Trust, including fees for legal services rendered to the Trustee, the compensation of the Trustee to the extent not paid directly by the Grantor, and all other proper charges and disbursements of the Trustee shall be paid from the Fund.

Section 10. Annual Valuation. After payment has been made into this standby trust fund, the Trustee shall annually, at least 30 days before the anniversary date of receipt of payment into the standby trust fund, furnish to the Grantor and to the NRC a statement confirming the value of the Trust. Any securities in the Fund shall be valued at market value as of no more than 60 days before the anniversary date of the establishment of the Fund. The failure of the Grantor to object in writing to the Trustee within 90 days after the statement has been furnished to the Grantor and the NRC shall constitute a conclusively binding assent by the Grantor, barring the grantor from asserting any claim or liability against the Trustee with respect to the matters disclosed in the statement.

Section 11. Advice of Counsel. The Trustee may from time to time consult with counsel with respect to any question arising as to the construction of this Agreement or any action to be taken hereunder. The Trustee shall be fully protected, to the extent permitted by law, in acting on the advice of counsel.

Section 12. Trustee Compensation. The Trustee shall be entitled to reasonable compensation for its services as agreed upon in writing with the Grantor. (See Schedule C.)

Section 13. Successor Trustee. Upon 90 days notice to the NRC, the Trustee may resign; upon 90 days notice to NRC and the Trustee, the Grantor may replace the Trustee; but such resignation or replacement shall not be effective until the Grantor has appointed a successor Trustee and this successor accepts the appointment. The successor Trustee shall have the same powers and duties as those conferred upon the Trustee hereunder. Upon the successor Trustee's acceptance of the appointment, the Trustee shall assign, transfer, and pay over to the successor Trustee the funds and properties then constituting the Fund. If for any reason the Grantor cannot or does not act in the event of the resignation of the Trustee, the Trustee may apply to a court of competent jurisdiction for the appointment of a successor Trustee or for instructions. The successor Trustee shall specify the date on which it assumes administration of the trust in a writing sent to the Grantor, the NRC and the present Trustee by certified mail 10 days before such change becomes effective. Any expenses incurred by the Trustee as a result of any of the acts contemplated by this section shall be paid as provided in Section 9.

Section 14. Instructions to the Trustee. All orders, requests, and instructions by the Grantor to the Trustee shall be in writing, signed by such persons as are signatories to this agreement or such other designees as the Grantor may designate in writing. The Trustee shall be fully protected in acting without inquiry in accordance with the grantor's orders, requests, and instructions. If the NRC issues orders, requests, or instructions to the Trustee these shall be in writing, signed by the NRC or their designees, and the Trustee shall act and shall be fully protected in acting in accordance with such orders, requests, and instructions. The Trustee shall have the right to assume, in the absence of written notice to the contrary, that no event constituting a change or a termination of the authority or any person to act on behalf of the Grantor, the NRC hereunder has occurred. The Trustee shall have no duty to act in the absence of such orders, requests, and instruction from the Grantor and/or the NRC, except as provided for herein.

Section 15. Amendment of Agreement. This Agreement may be amended by an instrument in writing executed by the Grantor, the Trustee and the NRC, or by the Trustee and the NRC, if the Grantor ceases to exist.

Section 16. Irrevocability and Termination. Subject to the right of the parties to amend this Agreement as provided in Section 15, this trust shall be irrevocable and shall continue until terminated at the written agreement of the Grantor, the Trustee, and the NRC or State agency, or by the Trustee and the NRC or State agency, if the Grantor ceases to exist. Upon termination of the trust, all remaining trust property, less final trust administration expenses, shall be delivered to the Grantor or its successor.

Section 17. Immunity and Indemnification. The Trustee shall not incur personal liability of any nature in connection with any act or omission, made in good faith, in the administration of this trust, or in carrying out any directions by the Grantor or the NRC issued in accordance with this Agreement. The Trustee shall be indemnified and saved harmless by the Grantor or from the trust fund, or both, from and against any personal liability to

which the Trustee may be subjected by reason of any act or conduct in its official capacity, including all expenses reasonably incurred in its defense in the event the Grantor fails to provide such defense.

Section 18. This Agreement shall be administered, construed, and enforced according to the laws of the State of New York.

Section 19. Interpretation and Severability. As used in this Agreement, words in the singular include the plural and words in the plural include the singular. The descriptive headings for each section of this Agreement shall not affect the interpretation or the legal efficacy of this Agreement. If any part of this agreement is invalid, it shall not affect the remaining provisions which will remain valid and enforceable.

IN WITNESS THEREOF the parties have caused this Agreement to be executed by the respective officers duly authorized and the incorporate seals to be hereunto affixed and attested as of the date first written above.

M. T. Sharples
M. T. Sharples
Vice President and Treasurer

ATTEST:

D. J. Hellmann
D. J. Hellmann
Assistant Secretary

B. R. Evancho
B. R. Evancho, Manager
Corporate Cash Management & Banking

Marey J. MacKuski Logowski
7/24/90 NOTARY

ATTEST:

Peter M. Glazik
Citibank, N.A.
PETER M. GLAZIK
Assistant Vice President

Mary LaGumina
[Title]
[Seal] Mary LaGumina
Trust Officer

STATE OF NEW YORK)
COUNTY OF KINGS) ss.

The foregoing instrument was acknowledged before me this 27 day of JULY, 1990, by PETER M. GLAZIK as ASSISTANT VICE PRES. of Citibank, N.A., a national banking association.

WITNESS my hand and official seal.

My commission expires Jan. 31/1992.

Patricia C. Tampo
Notary Public

PATRICIA C. TAMPO
Notary Public, State of New York
No. 24-01TA4859888
Qualified in Kings County
Certificate Filed in New York County
Term Expires Jan. 31, 1992

OFFICIAL RECORD COPY ML 10

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113067

TRUST AGREEMENT SCHEDULE

SCHEDULE A

This Agreement demonstrated financial assurance for the following cost estimates for the following licensed activities:

<u>U.S. Nuclear Regulatory Commission License Number</u>	<u>Name and Address of Licensee</u>	<u>Address of Licensed Activity</u>	<u>Cost Estimates for Regulatory Assurances Demonstrated by This Agreement</u>
#20-00320-21	E. I. du Pont de Nemours & Company	Greater Boston Area Site Boston, Mass.	\$12,000,000.00

TRUST AGREEMENT SCHEDULE

SCHEDULE B

AMOUNT \$ 12,000,000.

AS EVIDENCED BY Standby L/C #

CERTIFICATE OF EVENTS

Citibank N.A. Trustee
Corporate Trust/Escrow Administration
120 Wall Street, 13th Floor

Attention: Trust Division

Gentlemen:

In accordance with the terms of the Agreement with you dated _____, I, _____, Manager, E. I. du Pont de Nemours and Company, hereby certify that the following events have occurred:

1. Du Pont is required to commence the decommissioning of its facility located at the Greater Boston Area Site (hereafter called the decommissioning).
2. The plans and procedures for the commencement and conduct of the decommissioning have been approved by the United States Nuclear Regulatory Commission, or its successor, on _____ (copy of approval attached).
3. The Board of Directors of E. I. du Pont de Nemours and Company has adopted the attached resolution authorizing the payment of funds, as necessary, from the Standby Trust.

E. I. du Pont de Nemours and Company

Manager

Date: _____

CERTIFICATE OF RESOLUTION

Instructions to the Grantor:

All orders, requests and instructions by the Grantor to the Trustee shall be in writing, signed by such persons authorized in accordance with the resolution entitled "Authority for Banking and Financial Matters" adopted by the Executive Committee of E. I. du Pont de Nemours and Company on July 29, 1988, as approved by the Finance Committee on August 24, 1988 and as amended on December 1, 1988 and "Delegation of Authority for Banking and Financial Matters" approved by the Vice President and Treasurer on September 27, 1988.

Citibank, N.A.

NORTH AMERICAN FINANCE GROUP - TRADE FINANCIAL SERVICES
 SORT # 5878
 111 WALL STREET NEW YORK, NY 10043

JULY 26, 1990

U.S. NUCLEAR REGULATORY
 COMMISSION
 WASHINGTON, DC 20555

REF: IRREVOCABLE LETTER OF CREDIT NO. NY-0881-30007170

GENTLEMEN:

WE HEREBY ESTABLISH OUR IRREVOCABLE STANDBY LETTER OF CREDIT NO. NY-0881-30007170 IN YOUR FAVOR, AT THE REQUEST AND FOR THE ACCOUNT OF E. I. DU PONT DE NEMOURS & COMPANY ("DU PONT"), GREATER BOSTON AREA SITE, LICENSE #20-00320-21 UP TO THE AGGREGATE AMOUNT OF TWELVE MILLION U.S. DOLLARS, \$12,000,000.00 AVAILABLE UPON PRESENTATION OF:

(1) YOUR SIGHT DRAFT, BEARING REFERENCE TO THIS LETTER OF CREDIT NO. NY-0881-30007170, AND

(2) YOUR SIGNED STATEMENT READING AS FOLLOWS: "I CERTIFY THAT THE AMOUNT OF THE DRAFT IS PAYABLE PURSUANT TO REGULATIONS ISSUED UNDER AUTHORITY OF U.S. NRC."

THIS LETTER OF CREDIT IS ISSUED IN ACCORDANCE WITH REGULATIONS ISSUED UNDER THE AUTHORITY OF THE U.S. NUCLEAR REGULATORY COMMISSION (NRC), AN AGENCY OF THE U.S. GOVERNMENT, PURSUANT TO THE ATOMIC ENERGY ACT OF 1954, AS AMENDED, AND THE ENERGY REORGANIZATION ACT OF 1974. THE NRC HAS PROMULGATED REGULATIONS IN TITLE 10, CHAPTER 1 OF THE CODE OF FEDERAL REGULATIONS, PART 30, WHICH REQUIRE THAT A HOLDER OF, OR AN APPLICANT FOR, A LICENSE ISSUED UNDER 10 CFR PART 30 PROVIDE ASSURANCE THAT FUNDS WILL BE AVAILABLE WHEN NEEDED FOR DECOMMISSIONING.

THIS LETTER OF CREDIT IS EFFECTIVE AS OF JULY 27, 1990 AND SHALL EXPIRE ON JULY 27, 1991, BUT SUCH EXPIRATION DATE SHALL BE AUTOMATICALLY EXTENDED FOR A PERIOD OF AT LEAST ONE YEAR ON JULY 27, 1991 AND ON EACH SUCCESSIVE EXPIRATION DATE, UNLESS, AT LEAST 90 DAYS BEFORE THE CURRENT EXPIRATION DATE, WE NOTIFY BOTH YOU AND DU PONT, GREATER BOSTON AREA SITE, AS SHOWN ON THE SIGNED RETURN RECEIPTS, IF DU PONT, GREATER BOSTON AREA SITE IS UNABLE TO SECURE ALTERNATIVE FINANCIAL ASSURANCE TO REPLACE THE LETTER OF CREDIT WITHIN 30 DAYS OF NOTIFICATION OF CANCELLATION THE NRC MAY DRAW UPON THE FULL VALUE OF THIS LETTER OF CREDIT PRIOR TO CANCELLATION. THE BANK SHALL GIVE IMMEDIATE NOTICE TO THE APPLICANT AND THE NRC OF ANY NOTICE RECEIVED OR ACTION FILED ALLEGING (1) THE INSOLVENCY OR BANKRUPTCY OF THE FINANCIAL

Citibank, N.A.

INSTITUTION OR (2) ANY VIOLATIONS OF REGULATORY REQUIREMENTS THAT COULD RESULT IN SUSPENSION OR REVOCATION OF THE BANK'S CHARTER LICENSE TO DO BUSINESS. THE FINANCIAL INSTITUTION ALSO SHALL GIVE IMMEDIATE NOTICE IF THE BANK, FOR ANY REASON, BECOMES UNABLE TO FULFILL ITS OBLIGATIONS UNDER THE LETTER OF CREDIT.

WHENEVER THIS LETTER OF CREDIT IS DRAWN ON AND IN COMPLIANCE WITH THE TERMS OF THIS LETTER OF CREDIT, WE SHALL DULY HONOR SUCH DRAFT UPON ITS PRESENTATION TO US WITHIN 30 DAYS, AND WE SHALL DEPOSIT THE AMOUNT OF THE DRAFT DIRECTLY INTO THE STANDBY TRUST FUND OF DU PONT, GREATER BOSTON AREA SITE IN ACCORDANCE WITH YOUR INSTRUCTIONS.

EACH DRAFT MUST BEAR ON ITS FACE THE CLAUSE: "DRAWN UNDER LETTER OF CREDIT NO. NY-0891-30007170, DATED JULY 26, 1990, AND THE TOTAL OF THIS DRAFT AND ALL OTHER DRAFTS PREVIOUSLY DRAWN UNDER THIS LETTER OF CREDIT DOES NOT EXCEED TWELVE MILLION U.S. DOLLARS, \$12,000,000.00."

EXCEPT AS FAR AS OTHERWISE EXPRESSLY STATED HEREIN, THIS LETTER OF CREDIT IS SUBJECT TO THE UNIFORM CUSTOMS AND PRACTICE FOR DOCUMENTARY CREDITS (1993 REVISION) INTERNATIONAL CHAMBER OF COMMERCE PUBLICATIONS NO. 400

CITIBANK N.A.

[Handwritten Signature]
AUTHORIZED SIGNATURE.

James LeVay, R. S. O.
North America Trade Services
11 Wall Street Pl/25th Fl
(212) 57-5100

STANDBY TRUST AGREEMENT

TRUST AGREEMENT, the Agreement entered into as of July 27, 1990 by and between E. I. du Pont de Nemours and Company ("Du Pont"), Greater Boston Area Site, herein referred to as the "Grantor," and Citibank, N.A., the "Trustee."

WHEREAS, the U.S. Nuclear Regulatory Commission (NRC), and agency of the U.S. Government, pursuant to the Atomic Energy Act of 1954, as amended, and the Energy Reorganization Act of 1974, has promulgated regulations in Title 10, Chapter I of the Code of Federal Regulations, Part 30. These regulations, applicable to the Grantor, require that a holder of, or an applicant for, a Part 30, license provide assurance that funds will be available when needed for required decommissioning activities.

WHEREAS, the Grantor has elected to use a Standby Letter of Credit to provide all of such financial assurance for the facilities identified herein; and

WHEREAS, when payment is made under a Standby Letter of Credit, this standby trust shall be used for the receipt of such payment; and

WHEREAS, the Grantor, acting through its duly authorized officers, has selected the Trustee to be the trustee under this Agreement, and the Trustee is willing to act as trustee,

NOW, THEREFORE, the Grantor and the Trustee agree as follows:

Section 1. Definitions. As used in this Agreement:

- (a) The term "Grantor" means the NRC licensee who enters into this Agreement and any successors or assigns of the Grantor.
- (b) The term "Trustee" means the trustee who enters into this Agreement and any successor Trustee.

Section 2. Cost of Decommissioning. This Agreement pertains to the costs of decommissioning the materials and activities identified in License Number 20-00320-21 issued pursuant to 10 CFR Part 30 as shown in Schedule A.

Section 3. Establishment of Fund. The Grantor and the Trustee hereby establish a standby trust fund (the Fund) for the benefit of the NRC. The Grantor and the Trustee intend that no third party have access to the Fund except as provided herein.

Section 4. Payments Constituting the Fund. Payments made to the Trustee for the Fund shall consist of cash, securities, or other liquid assets acceptable to the Trustee. The Fund is established initially as consisting of the property, which is acceptable to the Trustee, described in Schedule B attached hereto. Such property and any other property subsequently transferred

to the Trustee are referred to as the "Fund," together with all earnings and profits thereon, less any payments or distributions made by the Trustee pursuant to this Agreement. The Fund shall be held by the Trustee, IN TRUST, as hereinafter provided. The Trustee shall not be responsible nor shall it undertake any responsibility for the amount of, or adequacy of the Fund, nor any duty to collect from the Grantor, any payments necessary to discharge any liabilities of the Grantor established by the NRC.

Section 5. Payment for Required Activities Specified in the Plan.

The Trustee shall make payments from the Fund to the Grantor upon presentation to the Trustee of the following:

- a. A certificate duly executed by the Secretary of the Depositor attesting to the occurrence of the events, and in the form set forth in the attached Specimen Certificate, and
- b. A certificate attesting to the following conditions:
 - (1) that decommissioning is proceeding pursuant to an NRC-approved plan,
 - (2) that the funds withdrawn will be expended for activities undertaken pursuant to that Plan, and
 - (3) that the NRC has been given 30 days' prior notice of Du Pont's intent to withdraw funds from the escrow fund.

No withdrawal from the fund can exceed ten percent (10%) of the outstanding balance of the Fund or One Million Two Hundred Thousand Dollars (\$1,200,000), whichever is greater, unless NRC approval is attached.

In the event of the Grantor's default or inability to direct decommissioning activities, the Trustee shall make payments from the Fund as the NRC shall direct, in writing, to provide for the payment of the costs of required activities covered by this Agreement. The Trustee shall reimburse the Grantor or other persons as specified by the NRC from the Fund for expenditures for required activities in such amounts as the NRC shall direct in writing. In addition, the Trustee shall refund to the Grantor such amounts as the NRC specifies in writing. Upon refund, such funds shall no longer constitute part of the Fund as defined herein.

Section 6. Trust Management. The Trustee shall invest and reinvest the principal and income of the Fund and keep the Fund invested as a single fund, without distinction between principal and income, in accordance with general investment policies and guidelines which the Grantor may communicate in writing to the Trustee from time to time, subject, however, to the provisions of this section. In investing, reinvesting, exchanging, selling and managing the Fund, the Trustee shall discharge its duties with respect to the Fund solely in the interest of the beneficiary and with the care, skill, prudence, and diligence under the circumstances then prevailing which persons of

prudence, acting in a like capacity and familiar with such matters, would use in the conduct of an enterprise of a like character and with like aims; except that:

- (a) Securities or other obligations of the Grantor, or any other owner or operator of the facilities, or any of their affiliates as defined in the Investment Company Act of 1940, as amended (15 U.S.C. 80a-2(a)), shall not be acquired or held, unless they are securities or other obligations of the Federal or a State government;
- (b) The Trustee is authorized to invest the Fund in time or demand deposits of the Trustee, to the extent insured by an agency of the Federal government; and
- (c) For a reasonable time, not to exceed 60 days, the Trustee is authorized to hold uninvested cash, awaiting investment or distribution, without liability for the payment of interest thereon.

Section 7. Commingling and Investment. The Trustee is expressly authorized in its discretion:

- (a) To transfer from time to time any or all of the assets of the fund to any common, commingled, or collective trust fund created by the Trustee in which the Fund is eligible to participate, subject to all of the provisions thereof, to be commingled with the assets of other trusts participating therein; and
- (b) To purchase shares in any investment company registered under the Investment Company Act of 1940 (15 U.S.C. 80a-1 et seq.), including one that may be created, managed, underwritten, or to which investment advice is rendered, or the shares of which are sold by the Trustee. The Trustee may vote such shares in its discretion.

Section 8. Express Powers of Trustee. Without in any way limiting the powers and discretion conferred upon the Trustee by the other provisions of this Agreement or by law, the Trustee is expressly authorized and empowered:

- (a) To sell, exchange, convey, transfer, or otherwise dispose of any property held by it, by public or private sale, as necessary for prudent management of the Fund;
- (b) To make, execute, acknowledge, and deliver any and all documents of transfer and conveyance and any and all other instruments that may be necessary or appropriate to carry out the powers herein granted;
- (c) To register any securities held in the Fund in its own name, or in the name of a nominee, and to hold any security in bearer form or in book entry, or to combine certificates representing such securities with certificates of the same issue held by the Trustee in other fiduciary capacities, to reinvest interest payments and funds from matured and redeemed instruments, to file proper forms concerning securities held

in the Fund in a timely fashion with appropriate government agencies, or to deposit or arrange for the deposit of such securities in a qualified central depository even though, when so deposited, such securities may be merged and held in bulk in the name of the nominee or such depository with other securities deposited therein by another person, or to deposit or arrange for the deposit of any securities issued by the U.S. Government, or any agency or instrumentality thereof, with a Federal Reserve bank, but the books and records of the Trustee shall at all times show that all such securities are part of the Fund;

- (d) To deposit any cash in the Fund in interest-bearing accounts maintained or savings certificates issued by the Trustee, in its separate corporate capacity, or in any other banking institution affiliated with the Trustee, to the extent insured by an agency of the Federal government; and
- (e) To compromise or otherwise adjust all claims in favor of or against the Fund.

Section 9. Taxes and Expenses. All taxes of any kind that may be assessed or levied against or in respect of the Fund and all brokerage commissions incurred by the Fund shall be paid from the Fund. All other expenses incurred by the Trustee in connection with the administration of this Trust, including fees for legal services rendered to the Trustee, the compensation of the Trustee to the extent not paid directly by the Grantor, and all other proper charges and disbursements of the Trustee shall be paid from the Fund.

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Section 14. Instructions to the Trustee. All orders, requests, and instructions by the Grantor to the Trustee shall be in writing, signed by such persons as are signatories to this agreement or such other designees as the Grantor may designate in writing. The Trustee shall be fully protected in acting without inquiry in accordance with the grantor's orders, requests, and instructions. If the NRC issues orders, requests, or instructions to the Trustee these shall be in writing, signed by the NRC or their designees, and the Trustee shall act and shall be fully protected in acting in accordance with such orders, requests, and instructions. The Trustee shall have the right to assume, in the absence of written notice to the contrary, that no event constituting a change or a termination of the authority of any person to act on behalf of the Grantor, the NRC hereunder has occurred. The Trustee shall have no duty to act in the absence of such orders, requests, and instruction from the Grantor and/or the NRC, except as provided for herein.

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Section 16. Irrevocability and Termination. Subject to the right of the parties to amend this Agreement as provided in Section 15, this trust shall be irrevocable and shall continue until terminated at the written agreement of the Grantor, the Trustee, and the NRC or State agency, or by the Trustee and the NRC or State agency, if the Grantor ceases to exist. Upon termination of the trust, all remaining trust property, less final trust administration expenses, shall be delivered to the Grantor or its successor.

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which the Trustee may be subjected by reason of any act or conduct in its official capacity, including all expenses reasonably incurred in its defense in the event the Grantor fails to provide such defense.

Section 18. This Agreement shall be administered, construed, and enforced according to the laws of the State of New York.

Section 19. Interpretation and Severability. As used in this Agreement, words in the singular include the plural and words in the plural include the singular. The descriptive headings for each section of this Agreement shall not affect the interpretation or the legal efficacy of this Agreement. If any part of this agreement is invalid, it shall not affect the remaining provisions which will remain valid and enforceable.

IN WITNESS THEREOF the parties have caused this Agreement to be executed by the respective officers duly authorized and the incorporate seals to be hereunto affixed and attested as of the date first written above.

M. T. Sharples
M. T. Sharples
Vice President and Treasurer

ATTEST:

D. J. Hellmann
D. J. Hellmann
Assistant Secretary

B. R. Evancho
B. R. Evancho, Manager
Corporate Cash Management & Banking

Marek J. Maczulski
Marek J. Maczulski
7/27/90 NOTARY

ATTEST:

Peter M. Glazik
Citibank, N.A.
PETER M. GLAZIK
Assistant Vice President

Mary LaChumbe
[Title]
[Seal] Mary LaChumbe
Trust Officer

STATE OF NEW YORK)
)
COUNTY OF KINGS) ss.

The foregoing instrument was acknowledged before me this 27 day of JULY, 1990, by PETER M. GLAZIK as ASSISTANT VICE PRES. of Citibank, N.A., a national banking association.

WITNESS my hand and official seal.

My commission expires Jan. 31/1992.

Patricia C. Tawrol
Notary Public

PATRICIA C. TAWROL
Notary Public State of New York
No. 24-017A4658988
Qualified in Kings County
Certificate Filed in New York County
Term Expires Jan. 31, 1992

TRUST AGREEMENT SCHEDULE

SCHEDULE A

This Agreement demonstrated financial assurance for the following cost estimates for the following licensed activities:

<u>U.S. Nuclear Regulatory Commission License Number</u>	<u>Name and Address of Licensee</u>	<u>Address of Licensed Activity</u>	<u>Cost Estimates for Regulatory Assurances Demonstrated by This Agreement</u>
#20-00320-21	E. I. du Pont de Nemours & Company	Greater Boston Area Site Boston, Mass.	\$12,000,000.00

2123198022

SENT BY: CITIBANK WCG CHEMICALS 7-27-90 : 3:45PM :

21231082-

215 337 5289;#13

TRUST AGREEMENT SCHEDULE

SCHEDULE B

AMOUNT \$ 12,000,000.

AS EVIDENCED BY Standby L/C #

CERTIFICATE OF EVENTS

Citibank N.A. Trustee
Corporate Trust/Escrow Administration
120 Wall Street, 13th Floor

Attention: Trust Division

Gentlemen:

In accordance with the terms of the Agreement with you dated _____, I, _____, Manager, E. I. du Pont de Nemours and Company, hereby certify that the following events have occurred:

1. Du Pont is required to commence the decommissioning of its facility located at the Greater Boston Area Site (hereafter called the decommissioning).
2. The plans and procedures for the commencement and conduct of the decommissioning have been approved by the United States Nuclear Regulatory Commission, or its successor, on _____ (copy of approval attached).
3. The Board of Directors of E. I. du Pont de Nemours and Company has adopted the attached resolution authorizing the payment of funds, as necessary, from the Standby Trust.

E. I. du Pont de Nemours and Company

Manager

Date: _____

2123198082

SENT BY:CITIBANK WCG CHEMICALS; 7-27-90 : 3:46PM :

2123198082

215 337 5269:#20

CERTIFICATE OF RESOLUTION

Instructions to the Grantor:

All orders, requests and instructions by the Grantor to the Trustee shall be in writing, signed by such persons authorized in accordance with the resolution entitled "Authority for Banking and Financial Matters" adopted by the Executive Committee of E. I. du Pont de Nemours and Company on July 29, 1988, as approved by the Finance Committee on August 24, 1988 and as amended on December 1, 1988 and "Delegation of Authority for Banking and Financial Matters" approved by the Vice President and Treasurer on September 27, 1988.

193777
FOR SK-1070STANDBY TRUST AGREEMENT

TRUST AGREEMENT, the Agreement entered into as of July 27, 1990 by and between E. I. du Pont de Nemours and Company ("Du Pont"), Greater Boston Area Site, herein referred to as the "Grantor," and Citibank, N.A., the "Trustee."

WHEREAS, the U.S. Nuclear Regulatory Commission (NRC), an agency of the U.S. Government, pursuant to the Atomic Energy Act of 1954, as amended, and the Energy Reorganization Act of 1974, has promulgated regulations in Title 10, Chapter I of the Code of Federal Regulations, Part 30. These regulations, applicable to the Grantor, require that a holder of, or an applicant for, a Part 30, license provide assurance that funds will be available when needed for required decommissioning activities.

WHEREAS, the Grantor has elected to use a Standby Letter of Credit to provide all of such financial assurance for the facilities identified herein; and

WHEREAS, when payment is made under a Standby Letter of Credit, this standby trust shall be used for the receipt of such payment; and

WHEREAS, the Grantor, acting through its duly authorized officers, has selected the Trustee to be the trustee under this Agreement, and the Trustee is willing to act as trustee,

NOW, THEREFORE, the Grantor and the Trustee agree as follows:

Section 1. Definitions. As used in this Agreement:

- (a) The term "Grantor" means the NRC licensee who enters into this Agreement and any successors or assigns of the Grantor.
- (b) The term "Trustee" means the trustee who enters into this Agreement and any successor Trustee.

Section 2. Cost of Decommissioning. This Agreement pertains to the costs of decommissioning the materials and activities identified in License Number 20-00320-21 issued pursuant to 10 CFR Part 30 as shown in Schedule A.

Section 3. Establishment of Fund. The Grantor and the Trustee hereby establish a standby trust fund (the Fund) for the benefit of the NRC. The Grantor and the Trustee intend that no third party have access to the Fund except as provided herein.

Section 4. Payments Constituting the Fund. Payments made to the Trustee for the Fund shall consist of cash, securities, or other liquid assets acceptable to the Trustee. The Fund is established initially as consisting of the property, which is acceptable to the Trustee, described in Schedule B attached hereto. Such property and any other property subsequently transferred

to the Trustee are referred to as the "Fund," together with all earnings and profits thereon, less any payments or distributions made by the Trustee pursuant to this Agreement. The Fund shall be held by the Trustee, IN TRUST, as hereinafter provided. The Trustee shall not be responsible nor shall it undertake any responsibility for the amount of, or adequacy of the Fund, nor any duty to collect from the Grantor, any payments necessary to discharge any liabilities of the Grantor established by the NRC.

Section 5. Payment for Required Activities Specified in the Plan.
The Trustee shall make payments from the Fund to the Grantor upon presentation to the Trustee of the following:

- a. A certificate duly executed by the Secretary of the Depositor attesting to the occurrence of the events, and in the form set forth in the attached Specimen Certificate, and
- b. A certificate attesting to the following conditions:
 - (1) that decommissioning is proceeding pursuant to an NRC-approved plan,
 - (2) that the funds withdrawn will be expended for activities undertaken pursuant to that Plan, and
 - (3) that the NRC has been given 30 days' prior notice of Du Pont's intent to withdraw funds from the escrow fund.

No withdrawal from the fund can exceed ten percent (10%) of the outstanding balance of the Fund or One Million Two Hundred Thousand Dollars (\$1,200,000), whichever is greater, unless NRC approval is attached.

In the event of the Grantor's default or inability to direct decommissioning activities, the Trustee shall make payments from the Fund as the NRC shall direct, in writing, to provide for the payment of the costs of required activities covered by this Agreement. The Trustee shall reimburse the Grantor or other persons as specified by the NRC from the Fund for expenditures for required activities in such amounts as the NRC shall direct in writing. In addition, the Trustee shall refund to the Grantor such amounts as the NRC specifies in writing. Upon refund, such funds shall no longer constitute part of the Fund as defined herein.

Section 6. Trust Management. The Trustee shall invest and reinvest the principal and income of the Fund and keep the Fund invested as a single fund, without distinction between principal and income, in accordance with general investment policies and guidelines which the Grantor may communicate in writing to the Trustee from time to time, subject, however, to the provisions of this section. In investing, reinvesting, exchanging, selling and managing the Fund, the Trustee shall discharge its duties with respect to the Fund solely in the interest of the beneficiary and with the care, skill, prudence, and diligence under the circumstances then prevailing which persons of

prudence, acting in a like capacity and familiar with such matters, would use in the conduct of an enterprise of a like character and with like aims; except that:

- (a) Securities or other obligations of the Grantor, or any other owner or operator of the facilities, or any of their affiliates as defined in the Investment Company Act of 1940, as amended (15 U.S.C. 80a-2(a)), shall not be acquired or held, unless they are securities or other obligations of the Federal or a State government;
- (b) The Trustee is authorized to invest the Fund in time or demand deposits of the Trustee, to the extent insured by an agency of the Federal government; and
- (c) For a reasonable time, not to exceed 60 days, the Trustee is authorized to hold uninvested cash, awaiting investment or distribution, without liability for the payment of interest thereon.

Section 7. Commingling and Investment. The Trustee is expressly authorized in its discretion:

- (a) To transfer from time to time any or all of the assets of the fund to any common, commingled, or collective trust fund created by the Trustee in which the Fund is eligible to participate, subject to all of the provisions thereof, to be commingled with the assets of other trusts participating therein; and
- (b) To purchase shares in any investment company registered under the Investment Company Act of 1940 (15 U.S.C. 80a-1 et seq.), including one that may be created, managed, underwritten, or to which investment advice is rendered, or the shares of which are sold by the Trustee. The Trustee may vote such shares in its discretion.

Section 8. Express Powers of Trustee. Without in any way limiting the powers and discretion conferred upon the Trustee by the other provisions of this Agreement or by law, the Trustee is expressly authorized and empowered:

- (a) To sell, exchange, convey, transfer, or otherwise dispose of any property held by it, by public or private sale, as necessary for prudent management of the Fund;
- (b) To make, execute, acknowledge, and deliver any and all documents of transfer and conveyance and any and all other instruments that may be necessary or appropriate to carry out the powers herein granted;
- (c) To register any securities held in the Fund in its own name, or in the name of a nominee, and to hold any security in bearer form or in book entry, or to combine certificates representing such securities with certificates of the same issue held by the Trustee in other fiduciary capacities, to reinvest interest payments and funds from matured and redeemed instruments, to file proper forms concerning securities held

in the Fund in a timely fashion with appropriate government agencies, or to deposit or arrange for the deposit of such securities in a qualified central depository even though, when so deposited, such securities may be merged and held in bulk in the name of the nominee or such depository with other securities deposited therein by another person, or to deposit or arrange for the deposit of any securities issued by the U.S. Government, or any agency or instrumentality thereof, with a Federal Reserve bank, but the books and records of the Trustee shall at all times show that all such securities are part of the Fund;

- (d) To deposit any cash in the Fund in interest-bearing accounts maintained or savings certificates issued by the Trustee, in its separate corporate capacity, or in any other banking institution affiliated with the Trustee, to the extent insured by an agency of the Federal government; and
- (e) To compromise or otherwise adjust all claims in favor of or against the Fund.

Section 9. Taxes and Expenses. All taxes of any kind that may be assessed or levied against or in respect of the Fund and all brokerage commissions incurred by the Fund shall be paid from the Fund. All other expenses incurred by the Trustee in connection with the administration of this Trust, including fees for legal services rendered to the Trustee, the compensation of the Trustee to the extent not paid directly by the Grantor, and all other proper charges and disbursements of the Trustee shall be paid from the Fund.

Section 10. Annual Valuation. After payment has been made into this standby trust fund, the Trustee shall annually, at least 30 days before the anniversary date of receipt of payment into the standby trust fund, furnish to the Grantor and to the NRC a statement confirming the value of the Trust. Any securities in the Fund shall be valued at market value as of no more than 60 days before the anniversary date of the establishment of the Fund. The failure of the Grantor to object in writing to the Trustee within 90 days after the statement has been furnished to the Grantor and the NRC shall constitute a conclusively binding assent by the Grantor, barring the grantor from asserting any claim or liability against the Trustee with respect to the matters disclosed in the statement.

Section 11. Advice of Counsel. The Trustee may from time to time consult with counsel with respect to any question arising as to the construction of this Agreement or any action to be taken hereunder. The Trustee shall be fully protected, to the extent permitted by law, in acting on the advice of counsel.

Section 12. Trustee Compensation. The Trustee shall be entitled to reasonable compensation for its services as agreed upon in writing with the Grantor. (See Schedule C.)

Section 13. Successor Trustee. Upon 90 days notice to the NRC, the Trustee may resign; upon 90 days notice to NRC and the Trustee, the Grantor may replace the Trustee; but such resignation or replacement shall not be effective until the Grantor has appointed a successor Trustee and this successor accepts the appointment. The successor Trustee shall have the same powers and duties as those conferred upon the Trustee hereunder. Upon the successor Trustee's acceptance of the appointment, the Trustee shall assign, transfer, and pay over to the successor Trustee the funds and properties then constituting the Fund. If for any reason the Grantor cannot or does not act in the event of the resignation of the Trustee, the Trustee may apply to a court of competent jurisdiction for the appointment of a successor Trustee or for instructions. The successor Trustee shall specify the date on which it assumes administration of the trust in a writing sent to the Grantor, the NRC and the present Trustee by certified mail 10 days before such change becomes effective. Any expenses incurred by the Trustee as a result of any of the acts contemplated by this section shall be paid as provided in Section 9.

Section 14. Instructions to the Trustee. All orders, requests, and instructions by the Grantor to the Trustee shall be in writing, signed by such persons as are signatories to this agreement or such other designees as the Grantor may designate in writing. The Trustee shall be fully protected in acting without inquiry in accordance with the grantor's orders, requests, and instructions. If the NRC issues orders, requests, or instructions to the Trustee these shall be in writing, signed by the NRC or their designees, and the Trustee shall act and shall be fully protected in acting in accordance with such orders, requests, and instructions. The Trustee shall have the right to assume, in the absence of written notice to the contrary, that no event constituting a change or a termination of the authority or any person to act on behalf of the Grantor, the NRC hereunder has occurred. The Trustee shall have no duty to act in the absence of such orders, requests, and instruction from the Grantor and/or the NRC, except as provided for herein.

Section 15. Amendment of Agreement. This Agreement may be amended by an instrument in writing executed by the Grantor, the Trustee and the NRC, or by the Trustee and the NRC, if the Grantor ceases to exist.

Section 16. Irrevocability and Termination. Subject to the right of the parties to amend this Agreement as provided in Section 15, this trust shall be irrevocable and shall continue until terminated at the written agreement of the Grantor, the Trustee, and the NRC or State agency, or by the Trustee and the NRC or State agency, if the Grantor ceases to exist. Upon termination of the trust, all remaining trust property, less final trust administration expenses, shall be delivered to the Grantor or its successor.

Section 17. Immunity and Indemnification. The Trustee shall not incur personal liability of any nature in connection with any act or omission, made in good faith, in the administration of this trust, or in carrying out any directions by the Grantor or the NRC issued in accordance with this Agreement. The Trustee shall be indemnified and saved harmless by the Grantor or from the trust fund, or both, from and against any personal liability to

which the Trustee may be subjected by reason of any act or conduct in its official capacity, including all expenses reasonably incurred in its defense in the event the Grantor fails to provide such defense.

Section 18. This Agreement shall be administered, construed, and enforced according to the laws of the State of New York.

Section 19. Interpretation and Severability. As used in this Agreement, words in the singular include the plural and words in the plural include the singular. The descriptive headings for each section of this Agreement shall not affect the interpretation or the legal efficacy of this Agreement. If any part of this agreement is invalid, it shall not affect the remaining provisions which will remain valid and enforceable.

IN WITNESS THEREOF the parties have caused this Agreement to be executed by the respective officers duly authorized and the incorporate seals to be hereunto affixed and attested as of the date first written above.

M. T. Sharples
M. T. Sharples
Vice President and Treasurer

ATTEST:

D. J. Hellmann
D. J. Hellmann
Assistant Secretary

B. R. Evancho
B. R. Evancho, Manager
Corporate Cash Management & Banking

Karey Paschulski Lagowski
7/24/90 NOTARY

ATTEST:

Peter M. Glazik
Citibank, N.A.
PETER M. GLAZIK
Assistant Vice President

Mary LeGendre
[Title]
[Seal] Mary LeGendre
Trust Officer

STATE OF New York)
) ss.
COUNTY OF Putnam)

The foregoing instrument was acknowledged before me this 27 day of July, 1980, by ESTER M. CLAZIK as Assistant Cashier of Citibank, N.A., a national banking association.

WITNESS my hand and official seal.

My commission expires Jan. 31/1992.

Patricia C. Tampo
Notary Public

PATRICIA C. TAMPO
Notary Public, State of New York
No. 24-01TA463888
Qualified in Kings County
Certificate Filed in New York County
Term Expires Jan. 31, 1992

TRUST AGREEMENT SCHEDULESCHEDULE A

This Agreement demonstrated financial assurance for the following cost estimates for the following licensed activities:

<u>U.S. Nuclear Regulatory Commission License Number</u>	<u>Name and Address of Licensee</u>	<u>Address of Licensed Activity</u>	<u>Cost Estimates for Regulatory Assurances Demonstrated by This Agreement</u>
#20-00320-21	E. I. du Pont de Nemours & Company	Greater Boston Area Site Boston, Mass.	\$12,000,000.00

212319-92

SENT BY: CITIBANK WCG CHEMICALS; 7-27-90 ; 3:52PM ;

212319082*

215 337 5269: #29

TRUST AGREEMENT SCHEDULE

SCHEDULE B

AMOUNT \$ 12,000,000.

AS EVIDENCED BY Standby L/C #

CERTIFICATE OF EVENTS

Citibank N.A. Trustee
Corporate Trust/Escrow Administration
120 Wall Street, 13th Floor

Attention: Trust Division

Gentlemen:

In accordance with the terms of the Agreement with you dated _____, I, _____, Manager, E. I. du Pont de Nemours and Company, hereby certify that the following events have occurred:

1. Du Pont is required to commence the decommissioning of its facility located at the Greater Boston Area Site (hereafter called the decommissioning).
2. The plans and procedures for the commencement and conduct of the decommissioning have been approved by the United States Nuclear Regulatory Commission, or its successor, on _____ (copy of approval attached).
3. The Board of Directors of E. I. du Pont de Nemours and Company has adopted the attached resolution authorizing the payment of funds, as necessary, from the Standby Trust.

E. I. du Pont de Nemours and Company

Manager

Date: _____

212319082

SENT BY: CITIBANK WCC CHEMICALS 7-27-88 4:30:50PM :

212319089

215 337 5288:W31

CERTIFICATE OF RESOLUTION

Instructions to the Grantor:

All orders, requests and instructions by the Grantor to the Trustee shall be in writing, signed by such persons authorized in accordance with the resolution entitled "Authority for Banking and Financial Matters" adopted by the Executive Committee of E. I. du Pont de Nemours and Company on July 29, 1988, as approved by the Finance Committee on August 24, 1988 and as amended on December 1, 1988 and "Delegation of Authority for Banking and Financial Matters" approved by the Vice President and Treasurer on September 27, 1988.

212319882

SENT BY: CITIBANK WCG CHEMICALS 7-27-90 3:33PM

2123 8082

215 337 5269 # 1

CITICORP CITIBANK

Citibank N.A.
A subsidiary of
Citicorp
399 Park Avenue
New York, NY
10043

TELEFAX COVER SHEET

NAME:

TO
MATERIALS LICENSING

COMPANY:

ATTN: JOHN KUNNEMAN

ADDRESS:

LICENSE # 07-0045502

TELEPHONE NUMBER:

215-337-5269

FAX NUMBER:

FROM

NAME:

Teronne J. Jeter

COMPANY:

CITIBANK, N.A.

ADDRESS:

399 PARK AVENUE

CHEMICALS DEPARTMENT/8TH FLOOR/ZONE 5

NEW YORK, NY 10043

TELEPHONE NUMBER:

(212) 559-3318

FAX NUMBER:

(212) 319-8082

TOTAL PAGES NOT INCLUDING COVER:

~~28~~ 29

(FOR LFMS USE)
INFORMATION FROM LTS

BETWEEN:

LICENSE FEE MANAGEMENT BRANCH, ARM
AND
REGIONAL LICENSING SECTIONS

PROGRAM CODE: 03214
STATUS CODE: 0
FEE CATEGORY: 3P
EXP. DATE: 19930331
FEE COMMENTS: 3P OK 10/8/87 NOTE TO FILE

LICENSE FEE TRANSMITTAL

A. REGION I

1. APPLICATION ATTACHED

APPLICANT/LICENSEE: E. I. DU PONT DE NEMOURS & CO., INC
RECEIVED DATE: 900727
DOCKET NO: 3013288
CONTROL NO.: 113067
LICENSE NO.: 20-00320-19
ACTION TYPE: AMENDMENT

*License should have
been the -21.*

2. FEE ATTACHED

AMOUNT: 04287512 = 120.00
CHECK NO.: 04287510 = 120.00

*Fee sheet being
sent down from
R.I. See below.*

3. COMMENTS

SIGNED R. J. Brown
DATE 8-2-88

B. LICENSE FEE MANAGEMENT BRANCH (CHECK WHEN MILESTONE Q3 IS ENTERED)

1. FEE CATEGORY AND AMOUNT: 3P

*Revised
240 See
113360*

2. CORRECT FEE PAID. APPLICATION MAY BE PROCESSED FOR:

AMENDMENT
RENEWAL _____
LICENSE _____

3. OTHER _____

SIGNED _____
DATE _____

*Recontrolled
under
113360.
-21 lic.*

(FOR LFMS USE)
INFORMATION FROM LTS

BETWEEN:

LICENSE FEE MANAGEMENT BRANCH, ARM
AND
REGIONAL LICENSING SECTIONS

PROGRAM CODE: 03211
STATUS CODE: 0
FEE CATEGORY: 3A 3N
EXP. DATE: 19901130
FEE COMMENTS: I

LICENSE FEE TRANSMITTAL

A. REGION

1. APPLICATION ATTACHED

APPLICANT/LICENSEE: E. I. DU PONT DE NEMOURS & CO., INC
RECEIVED DATE: 900731
DOCKET NO: 3028902
CONTROL NO.: 113360
LICENSE NO.: 20-00320-21
ACTION TYPE: AMENDMENT

VOID?

2. FEE ATTACHED

AMOUNT: -----
CHECK NO.: -----

3. COMMENTS

SIGNED *Justa M. Haverkamp*
DATE *7/24/90*

B. LICENSE FEE MANAGEMENT BRANCH (CHECK WHEN MILESTONE 03 IS ENTERED)

1. FEE CATEGORY AND AMOUNT: *3A 3N* ----- *Refunded 240*
See fee sheet for 113067

2. CORRECT FEE PAID. APPLICATION MAY BE PROCESSED FOR:

AMENDMENT -----
RENEWAL -----
LICENSE -----

3. OTHER -----

SIGNED -----
DATE -----

U.S. N. I.
FEE MGMT. BRANCH

90 SEP 26 P2:39

RECEIVED
AK
12/13/90