

MAY - 4 1994

License No. 20-07446-01
Docket No. 030-00787
Control No. 112964

University of Massachusetts Lowell
ATTN: Dr. William T. Hogan
Chancellor
One University Avenue
Lowell, Massachusetts 01854

Dear Dr. Hogan:

Subject: Financial Assurance

This is in reference to your submittals dated May 14, 1990, January 3, 1991, January 9, 1992 and April 6, 1994 with attached Decommissioning Funding Plan and Statement of Intent to establish financial assurance for NRC License No. 20-07446-01. We have reviewed your submittals and within the scope of our review, no further deficiencies were identified.

Based on our review of your submittals, you are now in compliance with the requirements of 10 CFR 30.35. Please note that financial assurance certification and all associated documentation are required to be updated with significant changes in your operation and with each application for license renewal.

If you have any questions regarding this letter, please call David Everhart at (610) 337-6936. Thank you for your cooperation in this matter.

Sincerely,

Original Signed By:
Mohamed M. Shanbaky

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

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University of Massachusetts Lowell

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bcc:

M. Shanbaky, RI

D. Everhart, RI

DRSS:RI
Everhart

5/4/94

DRSS:RI
Shanbaky

5/4/94

NOTE TO DMB:

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

LICENSE NUMBER: 20-07446-01

DOCKET NUMBER: 030-00787

CONTROL NUMBER: 112964

THIS SHEET MAY BE DISCARDED AFTER PROCESSING.

THANK YOU!

University of Massachusetts Lowell
Radiation Laboratory
1 University Avenue
Lowell, Massachusetts, 01854

MS 16
K-2

April 6, 1994

U.S. Nuclear Regulatory Commission
475 Allendale Road
King of Prussia, Pa 19406-1415

License No. 20-07446-01
Docket No. 030-00787
Control No. 112964

Dear Sirs,

This is in response to your letter of March 11, 1994 requesting further information regarding our decommissioning funding plan for license numbers 20-07446-01, 02 and SNM 714. We have taken this opportunity to review and update our plan (attached). The following is a point by point response to the items listed in your letter.

- 1.a Our funding plan update revises the estimated waste disposal costs to \$35,000 for class B wastes and \$68,000 for class A wastes. The class A wastes consists of 6.8m³ of dry uncompacted wastes. The class B wastes consists of two large sealed sources (150Ci Co-60 and 50Ci Cs-137) and other sealed sources described in Attachment I. (Status of Radioisotope Laboratories and Radiation Source Storage areas.)
- 1.b Attachment I contains a description of the various University laboratories where radioisotopes are being or have been used or stored. This attachment also lists the types and amounts of radioactivity used or stored and a summary of the contamination history for these areas. This information was used in the preparation of our decommissioning funding plan.
- 1.c The decontamination of floors, walls and ducts are included in Table 3 under Task# 7.

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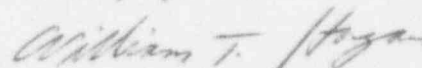
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112964
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2.0 Attached is a copy of a "letter of intent" and attachments from the President and Treasurer of the University of Massachusetts Lowell. This letter covers the University of Mass. Lowell for decommissioning costs up to \$750,000.00.

If you have any questions regarding this response please direct them to Warren Church our Radiation Safety Officer (508)934-3372.

Sincerely yours,



William T. Hogan,
Chancellor

Attachment I
U. Mass. Lowell
Decommissioning Funding Plan Update
March, 1994

Status of Radioisotope Laboratories and Radiation Source Storage areas.

Biology Laboratories:

There are five laboratories that are presently using radioisotopes (OL-601, 603, 607 and 613). Microcurie amounts of low energy beta emitters (H-3, C-14, S-35) are used as tracers in graduate student research projects. Monthly swipe surveys have shown no detectable contamination in work areas, hoods and sinks. One lab. OL-617 was once used for similar activities. A decommissioning survey including extensive swipe tests failed to reveal any contamination. Another lab OL-605 is currently only storing radioisotopes (< 10m Ci of H-3 and C-14). Routine swipe surveys which were made when radioisotope were being used showed no significant contamination.

Because of the small amounts of isotopes used and the combined record of minimal contamination it is expected that very little remedial work will be needed in these labs. The decommissioning activities would be primarily limited to the decommissioning survey and the removal of any remaining radioactive stock solutions and wastes. One laboratory drain may need to be decontaminated or removed as radioactive waste since μCi amounts of tritium was inadvertently dumped down this drain in 1992.

The chemistry building (Olney) currently has only one active radioisotope laboratory (OH-428B) which uses microcurie amounts of H-3, C-14, S-35, I-125 (labeled compounds) and P-32. Routine swipe surveys have occasionally picked up some localized contamination (<500 dpm/100cm² β,γ) on a laboratory bench. Three other laboratories have discontinued use of radioactive materials. Decommissioning surveys have shown no significant contamination in any of these laboratories.

The Clinical Laboratory Science Department (Weed 303) has been conducting ongoing research using I-131 and I-125 iodinations. The iodinations are conducted in a glove box which contains a charcoal filter and is vented to a hood. The output to the hood is monitored. The glove box and filter would need to be disposed of as low level waste in the event of decommissioning. Monitoring has shown little or no contamination in the hood and associated duct work. The lab also works with microcurie amounts of C-14 and H-3. Routine surveys have shown minimal contamination in work areas. Waste from these projects are stored for decay (I-131 and I-125) in a small storage area in the basement of Weed

Hall. To date routine surveys have shown no residual contamination in these areas.

The Radiation Laboratory contains several facilities in which radioactive materials have been used or stored. The "Source Room" (PI-109A) is an area where radiation sources are both stored and handled. This room was extensively utilized in the early 1980's to prepare B disk sources in a hood. This project utilized up to 5 mCi of Th-204, Tc-99, Sr-90, Pr-147. The hood along with its associated HEPA filter and approximately 10' of 6" circular duct are contaminated and would need to be disposed of as LLW. A sink and associated drain (est. 50') is also contaminated and would need to be disposed of as LLW. Routine surveys have shown small areas (<5ft²) of linolium tile to be contaminated.

A 150 Ci Co-60 irradiator is stored in the source room. The cost of recycling this irradiation which is currently not operable is estimated at \$15,000.

There are two active radioisotope laboratories in the radiation laboratory. Room 202 is a radiochemistry laboratory where small quantities nanocurie amounts of β,γ emitters are used in a radiochemistry course laboratory. It contains two sinks and two hoods. Routine swipe surveys have shown little or no contamination. For decommissioning funding purposes it is assumed that both of the sinks drain lines are contaminated (estimated length 50' each) and would need to be disposed of as LLW. A portion (25%) of the hoods may require decontamination or disposal. It is unlikely that there is significant contamination in the hood ducts since the hood filters have not shown significant activity on them.

Radon and thoron emanations are performed within filtered glove boxes in the other laboratory. Routine sampling of the hood has shown no significant contamination. One small area less than one square foot of the floor has some β,γ fixed contamination from previous activities in the laboratory.

A third laboratory (PI-219) is presently inactive and is used as an instrumentation lab. The hood shows no residual contamination.

There is also an environmental laboratory (PI-213) in the Radiation Laboratory. No significant residual contamination is expected.

The basement of the Radiation Lab. contains a radiation waste preparation and storage area. Fifty five gallon drums containing class A dry waste for decay are store in a 5' x 5' area. Another area 10' x 20' has been reserved for the storage of long lived waste (up to 15 drums). A number of sealed Cs-137 and Co-60 source are stored in this area. Ten Pu-Be sources are also stored in this area. A small household type compactor which is expected to be contaminated is stored in this area. Small area (<10 ft²) of the concrete floor may be contaminated although routine surveys show no removable contamination. The top of a wooden work table (4' x 8') has been contaminated with Sr-90. The contamination has been covered with plywood.

Decommissioning would require the transfer/disposal of the sealed sources which consist of (2) Co-60 sources = 9 m Ci each, four Cs-137 sources ranging from 9 m Ci to 6 m Ci and 6 tritium targets ranging from 0.2 to 2 curies. There are also 5-2 Ci and 5 Ci PuBe sources and a 3 Ci Cf-252 source all on loan from DOE being stored in this area. The cost of transferring/removal of these sources along with Cs-137 CD calibration source (50-Ci) and Sr-90 eye applicator source (3 Ci) is estimated to be \$20,000.

One remaining area needs to be considered in a decommissioning funding plan. This is the 5.5 MeV Van de Graaff Accelerator where H-3 targets were used in the early 1970's. Before the use of H-3 targets was discontinued the integrity of one of these targets was breached resulting in some H-3 contamination of the target room floor. While cleanup operations have cleaned up all removable activity there may be significant fixed H-3 contamination in the concrete floor.

The following Table represents a summary of various projected decommissioning activities in each area.

Area	Type	Possible areas needing Decontamination ft ²	Possible Class A Waste ft ³ 50% compact.	Comments
Olsen	Biology Labs (5)	40	20	possibility of contaminated drain.
Olney	Chem. Labs. (3)	20	20	
Weed	Laboratory (1)	10	20	
Radiation Lab.	Laboratory (3)	40	20	
Radiation Lab.	Source Room	20	40	
Radiation Lab.	Waste Area	20	100	sealed sources* need to be disposed of.
Radiation Lab.	Accelerator	-	20	
Total		140	240	

*Estimated cost of sealed source disposal or transfer = \$35,000.00.

APPENDIX F

COST ESTIMATING TABLES

1. Planning and Preparation

March, 1994

Table 1

<u>Task</u>	<u>Supervisor</u>	<u>Work Days</u>		<u>Clerical</u>	<u>Total</u>	<u>Total Cost</u>
		<u>Foreman</u>	<u>H.P.</u>			
1. Preparation of Documentation for Regulatory Agencies	_____	_____	_____	_____	_____	_____
2. Submittal of Decommissioning Plan to NRC when required by 10 CFR 30.36(c)(2), 40.42(c)(2), or 70.38(c)(2)*	<u>3</u>	_____	<u>5</u>	<u>2</u>	_____	_____
3. Development of Work Plans	_____	<u>1</u>	<u>3</u>	_____	_____	_____
4. Procuring of Special Equipment	_____	_____	<u>1</u>	_____	_____	_____
5. Staff Training	_____	<u>1</u>	<u>3</u>	<u>1</u>	_____	_____
6. Characterization of Radiological Condition of the Facility (Including soil and tailings analysis or ground-water analysis, if applicable)	_____	_____	_____	_____	_____	_____
7. Other	_____	_____	_____	_____	_____	_____
8. Total	<u>3</u> \$1200	<u>2</u> \$468	<u>12</u> \$3615	<u>3</u> \$300	_____	<u>\$5,583</u>

* For assistance in preparation of cost estimate for 10 CFR Part 72, consult NRC Office of Nuclear Material Safety and Safeguards.

APPENDIX F (Continued)
COST ESTIMATING TABLES

Table 2

Position	Unit Cost for Workers		Worker \$/Day
	Basic Salaries (\$/yr)	Overhead Rate (%)	
Supervisor	\$60,000	50	400
Foreman	\$35,000	50	234
Craftsman	\$30,000	50	200
Technician	\$30,000	50	200
Health Physicist	\$45,000	50	301
Laborer	\$26,000	50	134
Clerical	\$15,000	50	100
Other			

2. Decontamination and/or Dismantling of Radioactive Facility Components*

	No.	Dimensions		No.	Dimensions	
50% decon	2	.8 (m ³)	Amount of Floor Space	12	(m ²)	Decon 90%
	4	2 (m ³)	Ventilation Ductwork	2	15 (m)	
		(m ³)	Amount of Wall Space		2 (m ²)	Decon 90%
50% decon	4	2 (m)	Other			
	3	0 (m)				

Table 3

Work Days

Task	Super- visor	Fore- man	Tech- nicians	H.P.	Crafts- men	La- borer	Total	Total Cost
1. Decon/Dis- mantle Major Components and/or Proc- essing and Storage Tanks	1	2	1	1	2	10	17	\$3106
2. Decon/Dis- mantle Laboratories, Fume Hoods, Glove Boxes, Benches, etc.	1	2	2	2	2	20	29	\$4981

*Indicate whether component is to be decontaminated to unrestricted release levels or packaged and disposed of at a low-level waste site.

APPENDIX F (Continued)
 COST ESTIMATING TABLES

Table 3 (continued)

Work Days

<u>Task</u>	<u>Super- visor</u>	<u>Fore- man</u>	<u>Tech- nicians</u>	<u>H.P.</u>	<u>Crafts- men</u>	<u>La- borer</u>	<u>Total</u>	<u>Total Cost</u>
3. Decon/Dis- mantle Waste Areas	<u>1/2</u>	<u>1</u>	<u>4</u>	<u>1</u>	<u>1</u>	<u>10</u>	<u>17.5</u>	<u>3073</u>
- Radwaste Areas								
- Scrap Recovery Areas								
- Other								
4. Decon/Dis- mantle Service Facilities	-----	-----	-----	-----	-----	-----	-----	-----
- Maintenance Shop								
- Decontamination Areas								
- Ventilation Systems								
- Other								
5. Decon/Dis- mantle Waste Treatment Facilities and Storage Areas on the Site (Including exhume and package contaminated soil and tail- ings, if any)	-----	-----	-----	-----	-----	-----	-----	-----
- Fluoride Lagoons								
- Nitrate Lagoons								
- CaF2 Waste Recovery								
- Ground Water Restoration								
- Other								

APPENDIX F (Continued)
COST ESTIMATING TABLES

Table 3 (continued)

Work Days

Task	Super- visor	Fore- man	Tech- nicians	H.P.	Crafts- men	La- borer	Total	Total Cost
6. Monitor for compliance, reclean and remonitor, if necessary	1/2	1	5	5	-	3		\$4341
7. Other (e.g., contractor fees)	3	6	30	20	5	40	104	\$2189 21,990
Decontamination of floors, walls, and duct work.								

Table 4

Equipment/Supply	Quantity	Cost
Decon Equipment & supplies		\$5000
Radiation Meters & detectors		\$10,000

3. Packaging, Shipping, and Disposal of Radioactive Wastes

Table 5

Waste Type	Volume (m ³)	No. of Containers	Type of Containers	Unit Cost of Container	Cost of Container
Total					

Table 6

Waste Type	No. of Shipments	Unit Cost for Shipping	Distance Shipped	Surcharge	Transportation Cost
			(miles)		
				(\$/mile/truckload)	
				(\$/mile)	
				(\$/mile)	
Total					

APPENDIX F (Continued)
COST ESTIMATING TABLES

Total cost of waste drums, transportation Table 7
disposal and surcharges

Burial Charges	_____	(\$/m ³)	(uncompacted)
Surcharges	_____	(\$)	Class A = \$10,000 /m ³
Per container	_____	(\$/m ³)	Class B = \$35,000 for all
Disposal	_____	(\$/m ³)	

Class B Large source 100 Ci \$15000

Waste Type	Burial Volume	Unit Cost of Burial	Surcharge	Burial Cost
B Sealed Sources				\$35,000
A	6.8 m ³			\$68,000
Total				\$103,000

4. Restoration of Contaminated Areas on Facility Ground

Table 8

Task	Supervisor	Work Days			Total	Total Cost
		Foreman	H.P.	Clerical		
Backfill and Restore Site	_____	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____	_____

5. Final Radiation Survey

Table 9

Task	Supervisor	Work Days			Total	Total Cost
		Foreman	H.P.	Clerical		
	2	20	10	3		\$8112
	_____	_____	_____	_____	_____	_____
Total	2	20	10	3		\$8112

APPENDIX F (Continued)
 COST ESTIMATING TABLES

6. Site Stabilization, Long-Term Surveillance (if applicable)

Table 10

<u>Task</u>	<u>Supervisor</u>	<u>Work Days</u>			<u>Total</u>	<u>Total Cost</u>
		<u>Foreman</u>	<u>H.P.</u>	<u>Clerical</u>		
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____

Total Decommissioning Costs

1.	Planning and preparation	\$5583
2.	Decommissioning Work	\$375000
3.	Waste Disposal	\$103000
4.	Final Survey	\$8112
5.	Equipment	\$15000

\$169,210

Contingencies (25%)

\$ 42,303

Total

\$211,512

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Rese W. Chasick



UNIVERSITY OF MASSACHUSETTS
AMHERST • BOSTON • DARTMOUTH • LOWELL • WORCESTER

THE PRESIDENT'S OFFICE
18 TREMONT STREET, SUITE 800
BOSTON, MASSACHUSETTS 02108
(617) 287-7000
FAX (617) 287-7044

February 15, 1994

Mohamed M. Shanbaky, Chief
Research and Development Section
Division of Radiation Safety and Safeguards
U.S. Nuclear Regulatory Commission
475 Allendale Road
King of Prussia, PA 19406-1415

Subject: Financial Assurance for Decommissioning Under 10 CFR Part 30.35

- (1) License No. 20-00882-03
Docket No. 030-00761 - Control No. 112353
University of Massachusetts at Amherst
- (2) License No. 20-15242-02
Docket No. 030-12409 - Control No. 113202
University of Massachusetts at Boston

Dear Mr. Shanbaky:

This letter is in response to your recent letters to the Chancellors of the Amherst and Boston campuses with regard to financial assurance for decommissioning. We understand that the Nuclear Regulatory Commission has made or plans to make similar requests to the campuses of the University of Massachusetts at Dartmouth and at Lowell. In accordance with the request of David Everhart, we are providing a single response with respect to all campuses of the University that possess NRC licenses.

This letter of intent provides the necessary financial assurance as prescribed by 10 CFR Part 30.35[d] in the amount of \$750,000 for each campus. These funds will be made available in the event decommissioning becomes necessary. This assurance applies to all facilities under the jurisdiction of the University of Massachusetts and as set forth in our NRC licenses.

The undersigned are duly authorized by the University of Massachusetts Board of Trustees, the governing body of the University, to act in behalf of the University in this matter. Documentation to this effect is enclosed. We have also enclosed pertinent provisions of the Massachusetts General Laws that set forth the functions of the Board of Trustees.

We understand that 10 CFR 30.35 is to ensure that funding will be available should the licensee be unable to supply funding for decommissioning of the facility, and that you have asked that the statement of intent be signed by an entity other than the licensee.

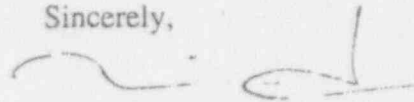
10 CFR 30.35(b)(2) states that each applicant shall "submit a certification that financial assurance for decommissioning has been provided . . . using one of the methods described in paragraph (f) . . ." Subparagraph 4 of (f) states that one method of financial assurance in the case of state government licensees is "a statement of intent containing a cost estimate . . . and indicating that funds for decommissioning will be obtained when necessary." The University of Massachusetts, while a state entity, receives only approximately 22% of its total annual revenue from the state legislature; other revenue is generated by gifts, grants, contracts, fees and auxiliary income directly under the control of the University's Board of Trustees. The President and Treasurer, by vote of the Board, are authorized to contract on behalf of the University.

Although the Massachusetts legislature provides some 22% of the University's annual revenue through appropriation, it would be in violation of the Massachusetts Constitution for any member of the legislative or executive branches (including the Governor) to execute a Statement of Intent which purports to require future legislatures to appropriate funds under certain circumstances. It is settled law in Massachusetts that no official may bind future legislatures to such specific appropriations.

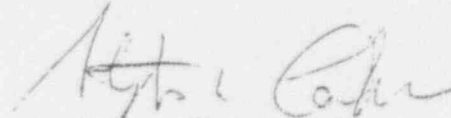
In light of these unique circumstances we trust that this statement, together with the attachments, will satisfy the legal requirements of 10 CFR 30.35(b)(2).

Each campus will provide any specific information that you have requested. If you need more information with respect to the Statement of Intent, please advise the undersigned. Otherwise we will assume that we have properly complied with the regulatory requirements that apply to this matter.

Sincerely,



Michael K. Hooker
President



Stephen W. Lenhardt
Treasurer

cc: Campus Chancellors

EXTRACT FROM THE RECORDS OF
UNIVERSITY OF MASSACHUSETTS

I, Cynthia A. Fontaine, Certifying Officer of the University of Massachusetts, authorized certifying officer of the University, do hereby certify that the following is a true and complete copy of a vote duly adopted by the Board of Trustees of the University of Massachusetts at a meeting duly called and held on the third day of June, nineteen hundred and ninety-two in the Chancellor's Conference Room, Quinn Administration Building, University of Massachusetts, Boston, Massachusetts:

VOTED:

To delegate to the President, each Chancellor, the Vice President for Management and Fiscal Affairs/Treasurer, the Vice Chancellors for Administration and Finance, and the Controllers and their designees, the authority to authorize payments on the University systems on behalf of the University consistent with Doc. T92-031.

To delegate to the President of the University and the Chancellors the following purchasing authority for University-wide or President's Office matters and campus matters, respectively, with authority to redelegate to the Treasurer, purchasing directors and such other officers as they see fit:

- (a) Authority to sign purchase orders irrespective of type or amount.
- (b) Authority to enter into leases of equipment for periods which do not exceed one year, irrespective of amount.
- (c) Authority to enter into contracts for labor and materials and contracts for services under \$25,000.

I further certify that said vote is in full force and effect as of the date hereof and that Stephen W. Lenhardt is Vice President for Management and Fiscal Affairs and University Treasurer of the University of Massachusetts, with its University Administration Office located at 18 Tremont Street, Boston, County of Suffolk in the Commonwealth of Massachusetts.

February 16, 1994
Date

Cynthia A. Fontaine
Cynthia A. Fontaine
Certifying Officer

CHAPTER 75.

UNIVERSITY OF MASSACHUSETTS.

75:1. University of Massachusetts; status; governing body.

Section 1. The state university shall be the University of Massachusetts, consisting of campuses to be maintained at Amherst, Boston, Dartmouth, Lowell, and Worcester, which shall continue as a public institution of higher learning within the system of public higher education and shall be governed by the board of trustees established herein. In addition to the authority, responsibility, powers and duties specifically conferred by this chapter, the board of trustees shall have all authority, responsibility, rights, privileges, powers and duties customarily and traditionally exercised by governing boards of institutions of higher learning. In exercising such authority, responsibility, powers and duties said board shall not in the management of the affairs of the university be subject to, or superseded by, any other state agency, board, bureau, commission, department or officer, except as provided in sections thirty-eight A 1/2 to forty-three I, inclusive, of chapter seven, chapter fifteen, chapter fifteen A or in this chapter. This chapter shall be liberally construed to effectuate its purposes.

75:1A. Board of trustees; membership; qualifications; tenure; vacancies; powers and duties; indemnification.

Section 1A. There shall be a board of trustees for University of Massachusetts consisting of nineteen voting members. Two members shall be full-time students from said institution, and seventeen members shall be appointed by the governor, at least five of whom shall be alumni of said institution, and one of whom shall be a representative of organized labor who shall be appointed by the governor from a list of not less than two nor more than five names, representing different unions submitted by the Massachusetts Trades Building Council. If no such list of names is submitted within sixty days after a vacancy occurs, the governor may appoint any representative of organized labor of his own choosing to the board. Of the alumni appointed to the University board, one shall be a graduate of the Amherst campus; one shall be graduate of the Boston campus; one shall be a graduate of the Dartmouth campus; one shall be a graduate of the Lowell campus; and one shall be a graduate of the Worcester campus. The student members shall be elected annually, and each shall be selected on a rotating basis in order by the student body of the Amherst, Boston, Dartmouth, Lowell, and Worcester campuses. In any given year, the elected student representatives of the three campuses without a vote shall be ex officio non-voting members of the board; provided, however, that said members may only participate in open meetings of the full board of trustees. The secretary of education shall be an ex officio non-voting member of the board.

The term of office of each elected student member shall be one year and shall commence on July first following her election and shall terminate on June thirtieth of the following year. If at any time during the elected term of office said student member ceases to be a full-time student or fails to maintain satisfactory academic progress, the membership of said student shall be terminated and the office of

the elected student member shall be deemed vacant. A vacancy in
the office of an elected student member prior to the expiration of a
term shall be filled for the remainder of the term in the same manner
as an election to a full term.

Members shall be appointed to serve for five year terms, but no
member shall be appointed for more than two consecutive terms. A
vacancy in the appointed membership prior to the expiration of a term
shall be filled for the remainder of the term by the governor.
Membership on the board of trustees shall terminate if a member
ceases to be qualified for appointment. If any member, either elected
or appointed, is absent from four regular meetings in any calendar
year, exclusive of July and August, his office as member of said
board shall be deemed vacant. The chairperson shall forthwith notify
the governor when any vacancy exists. Said vacancy shall be filled
by the governor according to the provisions of section eighteen B of
chapter six.

All members of the board shall be elected or appointed for their
interests in, and their ability to contribute to, the fulfillment of the
purposes of the board. The members appointed by the governor shall
include representatives from each region of the commonwealth. All
members shall be deemed members-at-large, charged with the respon-
sibility of serving the best interests of the university. No more than
one-third of the voting members of the board of trustees shall be
principally employed by the commonwealth. Members of the board
shall serve without compensation but shall be reimbursed for all
expenses reasonably incurred in the performance of their duties. The
board of trustees shall elect a chair. No chair shall serve for more
than three consecutive years.

The board of trustees shall be responsible for establishing those
policies necessary for the administrative management of personnel,
staff services and the general business of the university. The board
shall: (a) cause to be prepared and submit to the higher education
coordinating council estimates of maintenance and capital outlay
budgets for the university; (b) establish all fees at said institution,
subject to guidelines established by the council. The board shall
submit recommendations for fee guidelines to the council. Said fees
shall include fines and penalties collected pursuant to the enforcement
of traffic and parking rules and regulations. Said rules and regula-
tions shall be enforced by persons in the employ of the institution who
throughout the property of the institution shall have the powers of
police officers, except as to the service of civil process. Said fees
established under the provisions of this section shall be retained by
the board of trustees in a revolving fund or funds, and shall be
expended as the board of the institution may direct; provided that the
foregoing shall not authorize any action in contravention of the

requirements of Section 1 of Article LXIII of the Amendments to the Constitution. Said fund or funds shall be subject to annual audit by the state auditor; (c) appoint, transfer, dismiss, promote and award tenure to all personnel of the university; (d) manage and keep in repair all property, real and personal, owned or occupied by the university; (e) seek, accept and administer for faculty research, programmatic and institutional purposes grants, gifts and trusts from private foundations, corporations, federal agencies, alumni and other sources, which shall be administered under the provisions of section two C of chapter twenty-nine and may be disbursed at the direction of the board of trustees pursuant to its authority; (f) implement and evaluate affirmative action policies and programs; (g) establish, implement and evaluate student services and policies; (h) with approval of the higher education coordinating council, establish admission standards and instructional programs for the university, including all major and degree programs; provided, however, that said admission standard shall comply with the provisions of section thirty of chapter fifteen A; (i) have authority to transfer funds within and among subsidiary accounts allocated to the university; (j) establish and operate programs, including summer and evening programs, in accordance with the degree authority conferred under the provisions of this chapter; (k) with the approval of the council, award degrees in fields, either independently or in conjunction with other institutions; and (l) submit a five year master plan to the council, which plan shall be updated annually on or before the first Wednesday of December in each year; (m) submit financial data and an annual institutional spending plan to the council for review. Said plan shall include an account of spending from all revenue sources including but not limited to trust funds; (n) develop a mission statement for each campus, as well as a statement for the university, consistent with identified missions of the system of public higher education as a whole. Said mission statements shall be forwarded to the council for its approval. The board of trustees shall, after their approval, make said mission statements available to the public; (o) submit an institutional self-assessment report to the council, which the board of trustees shall make public and available at the institution. Said assessment report shall be used to foster improvement at the institution by the board of trustees and shall include information relative to the institution's progress in fulfilling its mission, as approved by the council. Said report shall be submitted, initially, by January first, nineteen hundred and ninety-three and every two years thereafter; (p) submit recommendations to the council for approval for tuition rates at the university.	75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117
The board of trustees may delegate to the president of the university any of the powers and responsibilities herein enumerated.	118 119

MAR 11 1994

License No. 20-07446-01
Docket No. 030-00787
Control No. 112964

University of Massachusetts Lowell
ATTN: Dr. William T. Hogan
Chancellor
One University Avenue
Lowell, Massachusetts 01854

Dear Dr. Hogan:

Subject: Financial Assurance

This is in reference to your letter dated January 9, 1992, letters dated January 3, 1991 and letter dated May 14, 1990 with attached Decommissioning Funding Plans and Statements of Intent to provide financial assurance for license No. 20-07446-01. We have reviewed your submittals and request that you modify your submissions to address the specific matters described below:

1. You included all major decommissioning activities in your cost estimate and itemized the cost estimate by major decommissioning activities using the tables from Appendix F to *Regulatory Guide 3.66, "Standard Format and Content of Financial Assurance Mechanisms Required for Decommissioning Under 10 CFR Parts 30, 40, 70 and 72.* However, your submission does not provide sufficient information to support the decommissioning cost estimates in the following areas:
 - a. The estimate of the waste costs for decontamination of the facility in Table 7 of your submission is \$30,000 for Type "B" waste and \$25,000 for Type "A" waste. There is no further delineation of the type or volume of waste. The NRC has no way to determine whether the waste costs are reasonable. Please supply details regarding waste generation, i.e., estimated number of barrels, compaction and costs per barrel for disposal. You may estimate the cost using the current cost assuming that a waste site is available. Note, however, that if waste costs change significantly, you must, as stated in your letter dated January 9, 1992, revise the decommissioning cost estimate and Letter of Intent.

- b. Item 2 of Table 2 of Appendix F submitted with the letter dated January 9, 1992, itemizes components to be decontaminated and/or dismantled. Confirm that this is an inclusive list of all components that reasonably may be contaminated in your facility. Please provide a diagram of the laboratories or a "standard laboratory" diagram and indicate the total number of labs. Include a description of the type and amount of activity of NRC licensed radioactive material used in each lab and the average and maximum contamination found during surveys.
 - c. Your estimate does not appear to include the labor costs for decontaminating floors, walls, and ductwork. This information will enable the NRC to evaluate the submitted cost estimate. Please either substantiate the estimates of the costs for decommissioning or, revise the estimates and, subsequently the total decommissioning cost estimate.
2. You submitted Statements of Intent dated January 9, 1992, January 3, 1991 and May 14, 1990 signed by yourself, the Chancellor of the University of Massachusetts Lowell. The purpose of the Statement of Intent as found in *Regulatory Guide 3.66*, is to make the funding bodies aware of the decommissioning requirements and costs and the possibility of the eventual need for funding. The purpose for financial assurance for decommissioning as required by 10CFR 30.35 is to ensure that funding will be available should the licensee be unable to supply funding for decommissioning for their facility. As such, funding for a Statement of Intent must be assured by an entity other than the licensee. Please supply either a Statement of Intent or a statement authorizing the signatory of the Statement of Intent signed by an official of the Commonwealth of Massachusetts, authorized to disburse the Commonwealth's funds to guarantee that adequate funds will be made available in the event decommissioning is required for the licensee. Include all the information included in the submitted Statement of Intent, including the license number, a description of the facilities for which financial assurance is being provided (addresses) and the amount of financial assurance required. You may review the recommendations for a Statement of Intent found on pages 3-25 and 3-26 of *Regulatory Guide 3.66*.

Regulatory Guide 3.66 does not contain recommended wording for a Statement of Intent, however, "Suggested Wording" is enclosed with this letter. You may use this wording or supply similar wording which contains the recommended information.

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. 112964. If you have any technical questions regarding this deficiency letter please call David Everhart at (215) 337-6936.

Since your license requires financial assurance, we request that you submit your response to this letter within 30 calendar days from the date of this letter.

Sincerely,

Original Signed By:
Mohamed M. Shanbaky

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

Enclosures:
Regulatory Guide 3.66
Suggested Wording for Statements of Intent

bcc:
M. Shanbaky, RI
D. Everhart, RI

DRSS:RI
Everhart

3/8/94

DRSS:RI
Shanbaky

ms
3/8/94

Suggested Wording for a Statement of Intent for a Government Licensee

TO: U. S. Nuclear Regulatory Commission
Region I
Division of Radiation Safety and Safeguards
Nuclear Materials Safety Branch
475 Allendale Road
King of Prussia, PA 19406

STATEMENT OF INTENT

As _____ [Title] _____ of _____ [Licensee Name] _____,
I exercise express authority and responsibility to approve funding for decommissioning
activities associated with operations authorized by U. S. Nuclear Regulatory Commission
Material License No. _____ [License Number] _____. This authority is established by _____ [Name
of Document(s) Governing Control of Funds] _____. Within this authority, I intend to have funds
made available when necessary in an amount up to _____ [Dollar Amount] _____ to
decommission _____ [Description of Facilities] _____. I intend to request and obtain these
funds sufficiently in advance of decommissioning to prevent delay of required activities.

A copy of _____ [Name of Documents] _____ is attached as evidence that I am authorized
to represent _____ [Licensee Name] _____ in this transaction.

Sincerely,

[SIGNATURE NAME]
[TITLE]

Attachment:
As stated



UNIVERSITY OF MASSACHUSETTS K-2
 AMHERST • BOSTON • DARTMOUTH • LOWELL • WORCESTER

THE PRESIDENT'S OFFICE
 18 TREMONT STREET, SUITE 800
 BOSTON, MASSACHUSETTS 02108
 (617) 287-7000
 FAX (617) 287-7044

February 15, 1994

Mohamed M. Shanbaky, Chief
 Research and Development Section
 Division of Radiation Safety and Safeguards
 U.S. Nuclear Regulatory Commission
 475 Allendale Road
 King of Prussia, PA 19406-1415

Subject: Financial Assurance for Decommissioning Under 10 CFR Part 30.35

- (1) License No. 20-00882-03
 Docket No. 030-00761 - Control No. 112353
 University of Massachusetts at Amherst
- (2) License No. 20-15242-02 *20-07446-01*
 Docket No. 030-12409 - Control No. 113202
 University of Massachusetts at Boston

Dear Mr. Shanbaky:

This letter is in response to your recent letters to the Chancellors of the Amherst and Boston campuses with regard to financial assurance for decommissioning. We understand that the Nuclear Regulatory Commission has made or plans to make similar requests to the campuses of the University of Massachusetts at Dartmouth and at Lowell. In accordance with the request of David Everhart, we are providing a single response with respect to all campuses of the University that possess NRC licenses.

This letter of intent provides the necessary financial assurance as prescribed by 10 CFR Part 30.35[d] in the amount of \$750,000 for each campus. These funds will be made available in the event decommissioning becomes necessary. This assurance applies to all facilities under the jurisdiction of the University of Massachusetts and as set forth in our NRC licenses.

The undersigned are duly authorized by the University of Massachusetts Board of Trustees, the governing body of the University, to act in behalf of the University in this matter. Documentation to this effect is enclosed. We have also enclosed pertinent provisions of the Massachusetts General Laws that set forth the functions of the Board of Trustees.

We understand that 10 CFR 30.35 is to ensure that funding will be available should the licensee be unable to supply funding for decommissioning of the facility, and that you have asked that the statement of intent be signed by an entity other than the licensee.

10 CFR 30.35(b)(2) states that each applicant shall "submit a certification that financial assurance for decommissioning has been provided . . . using one of the methods described in paragraph (f) . . ." Subparagraph 4 of (f) states that one method of financial assurance in the case of state government licensees is "a statement of intent containing a cost estimate . . . and indicating that funds for decommissioning will be obtained when necessary." The University of Massachusetts, while a state entity, receives only approximately 22% of its total annual revenue from the state legislature; other revenue is generated by gifts, grants, contracts, fees and auxiliary income directly under the control of the University's Board of Trustees. The President and Treasurer, by vote of the Board, are authorized to contract on behalf of the University.

Although the Massachusetts legislature provides some 22% of the University's annual revenue through appropriation, it would be in violation of the Massachusetts Constitution for any member of the legislative or executive branches (including the Governor) to execute a Statement of Intent which purports to require future legislatures to appropriate funds under certain circumstances. It is settled law in Massachusetts that no official may bind future legislatures to such specific appropriations.

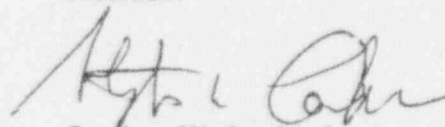
In light of these unique circumstances we trust that this statement, together with the attachments, will satisfy the legal requirements of 10 CFR 30.35(b)(2).

Each campus will provide any specific information that you have requested. If you need more information with respect to the Statement of Intent, please advise the undersigned. Otherwise we will assume that we have properly complied with the regulatory requirements that apply to this matter.

Sincerely,



Michael K. Hooker
President



Stephen W. Lenhardt
Treasurer

cc: Campus Chancellors

EXTRACT FROM THE RECORDS OF
UNIVERSITY OF MASSACHUSETTS

I, Cynthia A. Fontaine, Certifying Officer of the University of Massachusetts, authorized certifying officer of the University, do hereby certify that the following is a true and complete copy of a vote duly adopted by the Board of Trustees of the University of Massachusetts at a meeting duly called and held on the third day of June, nineteen hundred and ninety-two in the Chancellor's Conference Room, Quinn Administration Building, University of Massachusetts, Boston, Massachusetts:

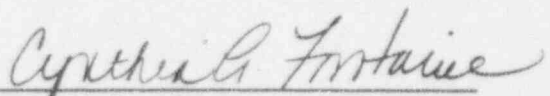
VOTED: To delegate to the President, each Chancellor, the Vice President for Management and Fiscal Affairs/Treasurer, the Vice Chancellors for Administration and Finance, and the Controllers and their designees, the authority to authorize payments on the University systems on behalf of the University consistent with Doc. T92-031.

To delegate to the President of the University and the Chancellors the following purchasing authority for University-wide or President's Office matters and campus matters, respectively, with authority to redelegate to the Treasurer, purchasing directors and such other officers as they see fit:

- (a) Authority to sign purchase orders irrespective of type or amount.
- (b) Authority to enter into leases of equipment for periods which do not exceed one year, irrespective of amount.
- (c) Authority to enter into contracts for labor and materials and contracts for services under \$25,000.

I further certify that said vote is in full force and effect as of the date hereof and that Stephen W. Lenhardt is Vice President for Management and Fiscal Affairs and University Treasurer of the University of Massachusetts, with its University Administration Office located at 18 Tremont Street, Boston, County of Suffolk in the Commonwealth of Massachusetts.

February 16, 1994
Date


Cynthia A. Fontaine
Certifying Officer

CHAPTER 75.

UNIVERSITY OF MASSACHUSETTS.

75:1. University of Massachusetts; status; governing body.

Section 1. The state university shall be the University of Massachusetts, consisting of campuses to be maintained at Amherst, Boston, Dartmouth, Lowell, and Worcester, which shall continue as a public institution of higher learning within the system of public higher education and shall be governed by the board of trustees established herein. In addition to the authority, responsibility, powers and duties specifically conferred by this chapter, the board of trustees shall have all authority, responsibility, rights, privileges, powers and duties customarily and traditionally exercised by governing boards of institutions of higher learning. In exercising such authority, responsibility, powers and duties said board shall not in the management of the affairs of the university be subject to, or superseded by, any other state agency, board, bureau, commission, department or officer, except as provided in sections thirty-eight A 1/2 to forty-three I, inclusive, of chapter seven, chapter fifteen, chapter fifteen A or in this chapter. This chapter shall be liberally construed to effectuate its purposes.

75:1A. Board of trustees; membership; qualifications; tenure; vacancies; powers and duties; indemnification.

Section 1A. There shall be a board of trustees for University of Massachusetts consisting of nineteen voting members. Two members shall be full-time students from said institution, and seventeen members shall be appointed by the governor, at least five of whom shall be alumni of said institution, and one of whom shall be a representative of organized labor who shall be appointed by the governor from a list of not less than two nor more than five names, representing different unions submitted by the Massachusetts Trades Building Council. If no such list of names is submitted within sixty days after a vacancy occurs, the governor may appoint any representative of organized labor of his own choosing to the board. Of the alumni appointed to the University board, one shall be a graduate of the Amherst campus; one shall be graduate of the Boston campus; one shall be a graduate of the Dartmouth campus; one shall be a graduate of the Lowell campus; and one shall be a graduate of the Worcester campus. The student members shall be elected annually, and each shall be selected on a rotating basis in order by the student body of the Amherst, Boston, Dartmouth, Lowell, and Worcester campuses. In any given year, the elected student representatives of the three campuses without a vote shall be ex officio non-voting members of the board; provided, however, that said members may only participate in open meetings of the full board of trustees. The secretary of education shall be an ex officio non-voting member of the board.

The term of office of each elected student member shall be one year and shall commence on July first following her election and shall terminate on June thirtieth of the following year. If at any time during the elected term of office said student member ceases to be a full-time student or fails to maintain satisfactory academic progress, the membership of said student shall be terminated and the office of

the elected student member shall be deemed vacant. A vacancy in the office of an elected student member prior to the expiration of a term shall be filled for the remainder of the term in the same manner as an election to a full term.

Members shall be appointed to serve for five year terms, but no member shall be appointed for more than two consecutive terms. A vacancy in the appointed membership prior to the expiration of a term shall be filled for the remainder of the term by the governor. Membership on the board of trustees shall terminate if a member ceases to be qualified for appointment. If any member, either elected or appointed, is absent from four regular meetings in any calendar year, exclusive of July and August, his office as member of said board shall be deemed vacant. The chairperson shall forthwith notify the governor when any vacancy exists. Said vacancy shall be filled by the governor according to the provisions of section eighteen B of chapter six.

All members of the board shall be elected or appointed for their interests in, and their ability to contribute to, the fulfillment of the purposes of the board. The members appointed by the governor shall include representatives from each region of the commonwealth. All members shall be deemed members-at-large, charged with the responsibility of serving the best interests of the university. No more than one-third of the voting members of the board of trustees shall be principally employed by the commonwealth. Members of the board shall serve without compensation but shall be reimbursed for all expenses reasonably incurred in the performance of their duties. The board of trustees shall elect a chair. No chair shall serve for more than three consecutive years.

The board of trustees shall be responsible for establishing those policies necessary for the administrative management of personnel, staff services and the general business of the university. The board shall: (a) cause to be prepared and submit to the higher education coordinating council estimates of maintenance and capital outlay budgets for the university; (b) establish all fees at said institution, subject to guidelines established by the council. The board shall submit recommendations for fee guidelines to the council. Said fees shall include fines and penalties collected pursuant to the enforcement of traffic and parking rules and regulations. Said rules and regulations shall be enforced by persons in the employ of the institution who throughout the property of the institution shall have the powers of police officers, except as to the service of civil process. Said fees established under the provisions of this section shall be retained by the board of trustees in a revolving fund or funds, and shall be expended as the board of the institution may direct; provided that the foregoing shall not authorize any action in contravention of the

requirements of Section 1 of Article LXIII of the Amendments to the Constitution. Said fund or funds shall be subject to annual audit by the state auditor; (c) appoint, transfer, dismiss, promote and award tenure to all personnel of the university; (d) manage and keep in repair all property, real and personal, owned or occupied by the university; (e) seek, accept and administer for faculty research, programmatic and institutional purposes grants, gifts and trusts from private foundations, corporations, federal agencies, alumni and other sources, which shall be administered under the provisions of section two C of chapter twenty-nine and may be disbursed at the direction of the board of trustees pursuant to its authority; (f) implement and evaluate affirmative action policies and programs; (g) establish, implement and evaluate student services and policies; (h) with approval of the higher education coordinating council, establish admission standards and instructional programs for the university, including all major and degree programs; provided, however, that said admission standard shall comply with the provisions of section thirty of chapter fifteen A; (i) have authority to transfer funds within and among subsidiary accounts allocated to the university; (j) establish and operate programs, including summer and evening programs, in accordance with the degree authority conferred under the provisions of this chapter, (k) with the approval of the council, award degrees in fields, either independently or in conjunction with other institutions; and (l) submit a five year master plan to the council, which plan shall be updated annually on or before the first Wednesday of December in each year; (m) submit financial data and an annual institutional spending plan to the council for review. Said plan shall include an account of spending from all revenue sources including but not limited to, trust funds; (n) develop a mission statement for each campus, as well as a statement for the university, consistent with identified missions of the system of public higher education as a whole. Said mission statements shall be forwarded to the council for its approval. The board of trustees shall, after their approval, make said mission statements available to the public; (o) submit an institutional self-assessment report to the council, which the board of trustees shall make public and available at the institution. Said assessment report shall be used to foster improvement at the institution by the board of trustees and shall include information relative to the institution's progress in fulfilling its mission, as approved by the council. Said report shall be submitted, initially, by January first, nineteen hundred and ninety-three and every two years thereafter; (p) submit recommendations to the council for approval for tuition rates at the university.

The board of trustees may delegate to the president of the university any of the powers and responsibilities herein enumerated.

● ●

University of Massachusetts Lowell
Radiation Laboratory
1 University Avenue
Lowell, Massachusetts, 01854
508 934-3372

January 9, 1992

License No. 20-7446-01
Docket No. 030-00787
Control No. 112 964
Nuclear Regulatory Commission
475 Allendale Road
King of Prussia, Pennsylvania 19406

Gentlemen;

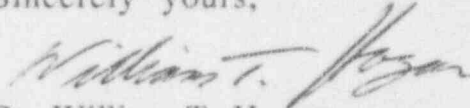
The following statements are made to satisfy the University of Massachusetts Lowell's requirements to provide a mechanism to assure funds will be available in the event that it is necessary for the University to decommission its facilities and equipment under NRC License 20-7446-01.

We have estimated that the total present day costs of decommissioning the above license at \$92,000. If the University finds it necessary to decommission the above license it will petition the Legislature of the Commonwealth of Massachusetts to pass a bill to cover these expenses since the Commonwealth would assume the ultimate responsibility for such costs. This petition will be made sufficiently in advance of decommissioning activities.

It is our understanding that, since the University of Massachusetts Lowell is a State institution, the above statements will satisfy the financial assurance requirements of 10 CFR Parts 30.

As Chancellor of this University I have the responsibility and authority to prepare the budget including any decommissioning costs and submit it through the President to the Legislature.

Sincerely yours,


Dr. William T. Hogan,
Chancellor

OFFICIAL RECORD COPY ML 10

112964
JAN 22 1992

University of Massachusetts Lowell

Radiation Laboratory

1 University Avenue
Lowell, Massachusetts, 01854
508 934-3372

January 9, 1992

License No. 20-07446-01
Docket No. 030-00787
Control No. 112 964
Nuclear Regulatory Commission
Attn: John D. Kinneman
475 Allendale Road
King of Prussia, Pennsylvania 19406-1415

Gentlemen:

This is in reference to your letter dated December 17, 1991 requesting further information regarding financial assurance for License No. 20-07446-07. Please note that since our last correspondence the University has undergone a name change - from the "University of Lowell" to "University of Massachusetts Lowell (UML)". This response is itemized in accordance with the December 17 letter.

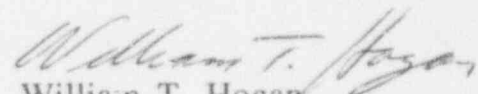
1. Our decommissioning cost estimates have been revised using a 25% contingency factor. (See attached cost estimate tables). The total decommissioning cost is now estimated at \$92,000.
2. Our decommissioning costs estimates have taken no credit for the potential sale of assets after decommissioning.
3. UML plans on updating our decommissioning cost estimates at the time of license renewal or when the amounts and type of licensed material change significantly.
4. The attached cost estimates are based on a 225 day work year for each type of worker.

5. The revised cost estimates have been checked for possible calculation errors.

6. Enclosed is an updated "Letter of Intent" where I have stipulated that as Chancellor I have the authority to petition the State Legislation for funding including any decommissioning costs.

I hope the above information will satisfactorily meet your request. If you have any questions or wish further information please contact Warren Church our Radiation Safety Officer at (508) 934-3372.

Sincerely yours,


William T. Hogan,
Chancellor

APPENDIX F

COST ESTIMATING TABLES

January 1992

1. Planning and Preparation

Table 1

Task	Supervisor	Work Days			Total	Total Cost
		Foreman	H.P.	Clerical		
1. Preparation of Documentation for Regulatory Agencies	_____	_____	_____	_____	_____	_____
2. Submittal of Decommissioning Plan to NRC when required by 10 CFR 30.36(c)(2), 40.42(c)(2), or 70.38(c)(2)*	<u>3</u>	_____	<u>5</u>	<u>2</u>	_____	_____
3. Development of Work Plans	_____	<u>1</u>	<u>1</u>	_____	_____	_____
4. Procuring of Special Equipment	_____	_____	<u>1</u>	_____	_____	_____
5. Staff Training	_____	<u>1</u>	<u>3</u>	<u>1</u>	_____	_____
6. Characterization of Radiological Condition of the Facility (Including soil and tailings analysis or ground-water analysis, if applicable)	_____	_____	_____	_____	_____	_____
7. Other	_____	_____	_____	_____	_____	_____
8. Total	<u>3</u> \$ 960	<u>2</u> \$ 374	<u>10</u> \$ 2130	<u>3</u> \$ 240	_____	\$ 3704

* For assistance in preparation of cost estimate for 10 CFR Part 72, consult NRC Office of Nuclear Material Safety and Safeguards.

APPENDIX F (Continued)
COST ESTIMATING TABLES

Table 2

Position	Unit Cost for Workers		Worker Cost/year	\$/day
	Basic Salaries (\$/yr)	Overhead Rate (%)		
Supervisor	60,000	20	72.	320
Foreman	35,000	20	42.0	187
Craftsman	30,000	20	36.0	160
Technician	25,000	20	30.0	133
Health Physicist	40,000	20	48.0	213
Laborer	26,000	20	24.0	107
Clerical	15,000	20	18.0	80
Other				

2. Decontamination and/or Dismantling of Radioactive Facility Components*

	No.	Dimensions		No.	Dimensions	
Glove Boxes	2	.8 (m ³)	Amount of Floor Space	1	10 (m ²)	Decon
Fume Hood	2	2 (m ³)	Ventilation Ductwork		(m)	
Hot Cells		(m ³)	Amount of Wall Space	1	10 (m ²)	Decon
Lab Benches	2	2 (m) 2	Other			
Sink and Drain	3	2 (m) 3				

Table 3

Work Days

Task	Super- visor	Fore- man	Tech- nicians	H.P.	Crafts- men	La- borer	Total	Total Cost
1. Decon/Dis- mantle Major Components and/or Proc- essing and Storage Tanks	1	2	1	1	2	10	17	\$ 2430
2. Decon/Dis- mantle Laboratories, Fume Hoods, Glove Boxes, Benches, etc.	1	2	1	1	2	10	17	\$ 2430

*Indicate whether component is to be decontaminated to unrestricted release levels or packaged and disposed of at a low-level waste site.

APPENDIX F (Continued)
 COST ESTIMATING TABLES

Table 3 (continued)

Task	Work Days						Total	Total Cost
	Super- visor	Fore- man	Tech- nicians	H.P.	Crafts- men	La- borer		
3. Decon/Dis- mantle Waste Areas	1/2	1	2	1	1	5	10 1/2	\$1521
- Radwaste Areas								
- Scrap Recovery Areas								
- Other								
4. Decon/Dis- mantle Service Facilities								
- Maintenance Shop								
- Decontamination Areas								
- Ventilation Systems								
- Other								
5. Decon/Dis- mantle Waste Treatment Facilities and Storage Areas on the Site (Including exhume and package contaminated soil and tail- ings, if any)								
- Fluoride Lagoons								
- Nitrate Lagoons								
- CaF2 Waste Recovery								
- Ground Water Restoration								
- Other								

APPENDIX F (Continued)
COST ESTIMATING TABLES

Table 3 (continued)

Task	Work Days						Total	Total Cost
	Super-visor	Fore-man	Tech-nicians	H.P.	Crafts-men	La-borer		
6. Monitor for compliance, reclean and remonitor, if necessary	1/2	1	5	2	-	3		\$1759
7. Other (e.g., contractor fees)	3	6	9	5	5	28	56	\$8140

Table 4

Equipment/Supply	Quantity	Cost
Decon Equipment & Supplies		\$5000

3. Packaging, Shipping, and Disposal of Radioactive Wastes

Table 5

Waste Type	Volume (m ³)	No. of Containers	Type of Containers	Unit Cost of Container	Cost of Container
Total					

Table 6

Waste Type	No. of Shipments	Unit Cost for Shipping	Distance Shipped	Surcharge	Transportation Cost
			(miles)		
Total					

APPENDIX F (Continued)
COST ESTIMATING TABLES

Table 7

Burial Charges					
Surcharges					_____ (\$/m ³)
Per container					_____ (\$)
Disposal					_____ (\$/m ³)

Waste Type	Burial Volume	Unit Cost of Burial	Surcharge	Burial Cost	Total Disposal
B Sealed Sources	_____	_____	_____	\$30,000	_____
A	10	_____	_____	\$25,000	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
Total	_____	_____	_____	_____	_____

4. Restoration of Contaminated Areas on Facility Ground NONE

Table 8

Task	Supervisor	Work Days			Total	Total Cost
		Foreman	H.P.	Clerical		
Backfill and Restore Site	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____

5. Final Radiation Survey

Table 9

Task	Supervisor	Work Days			Total	Total Cost
		Foreman	H.P.	Clerical		
_____	1	_____	5	3	_____	_____
_____	_____	_____	_____	_____	_____	_____
Total	1	_____	5	3	_____	_____
	\$ 320		\$ 1065	\$ 240		\$ 1625

APPENDIX F (Continued)
 COST ESTIMATING TABLES

6. Site Stabilization, Long-Term Surveillance (if applicable)

Table 10

<u>Task</u>	<u>Supervisor</u>	<u>Work Days</u>			<u>Clerical</u>	<u>Total</u>	<u>Total Cost</u>
		<u>Foreman</u>	<u>H.P.</u>				
_____	_____	_____	_____	_____	_____	_____	
_____	_____	_____	_____	_____	_____	_____	
_____	_____	_____	_____	_____	_____	_____	

Total Decommissioning Costs

1. Planning and Preparation	\$ 3704
2. Decommissioning Work	\$ 8140
3. Waste Disposal	\$ 55000
4. Final Survey	\$ 1625
5. Equipment	\$ 5000

Contingencies (25%) \$ 18365

Total \$ 91,836

112964

DEC 17 1991

License No. 20-07446-01
Docket No. 030-00787
Control No. 112964

University of Lowell
ATTN: William T. Hogan
President
One University Avenue
Lowell, Massachusetts 01854

Dear Mr. Hogan:

This is in reference to your two letters dated January 3, 1991, which responded to our letter dated December 27, 1990, to provide financial assurance for License No. 20-07446-01. In order to continue our review, we need the following additional information:

1. Please incorporate a contingency factor (see page 1-10 of Regulatory Guide 3.66 (enclosed)) into your decommissioning cost estimate. NUREG/CR-1754 uses a contingency factor of 25%. This factor should be used unless justification can be provided for a lower number.
2. Please confirm that no credit was taken in your cost estimate for any salvage value that may be realized with the sale of potential assets after decommissioning (see page 1-10 of Regulatory Guide 3.66).
3. Please provide the method you will use to adjust your cost estimate and funding level over the life of the facility. Regulatory Guide 3.66 suggests that adjustments be made for inflation and for site-specific factors at the time of license renewal, or when the amounts/types of material at the facility change.
4. You used a daily work rate for supervisors that is based on a 250 day work year. For other workers, you used a 300 day work year. Please clarify the difference between the number of workdays per year for supervisors and other workers, and make adjustments to the number of workdays per year, daily labor rate, and labor costs for various types of workers.
5. You added in \$1,200 as the estimated cost of the final radiation survey for your facility, but had specifically estimated the cost at \$1,280. You also made an addition error in summing the costs of each component of the overall decommissioning plan. As a result of these two errors, you calculated the total estimated decommissioning cost as \$70,580. The actual total estimate should be \$70,720. In addition to these calculation errors, you rounded the total decommissioning cost estimate down to \$70,000 rather than rounding it up to \$71,000. Please correct these errors in your decommissioning cost estimate.

6. Please provide evidence that the state assumes ultimate responsibility for decommissioning the University's licensed activities. This evidence should specifically refer to the licensed facility and its decommissioning costs, and should come from an authorized state representative (the authority of the representative should be documented in the submission, as suggested in Regulatory Guide 3.66 on page 3-26).

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. 112964. The reviewer for this licensing action is Eric H. Reber. If you have questions regarding this action please call the reviewer at (215) 337-5276.

Satisfactory financial assurance is required for your license, therefore, we request that you respond within 30 calendar days of the date of this letter

For your information, financial assurance is not required for License Nos. 20-07446-02 and SNM-714. This is because these licenses do not authorize the possession of byproduct and special nuclear material in sufficient quantities to require financial assurance.

Sincerely,

Original Signed By:
John D. Kinneman

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

Enclosure:
Regulatory Guide 3.66

bcc:
R. Reber, RI

RI:DRSS
Reber/ermc

12/12/91

RI:DRSS
Kinneman

12/ /91

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ML 541 REBER - 0002.0.0
12/11/91



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

SEP 19 1991

MS#20
L3

030-00787
20-07446-01

MEMORANDUM FOR: John D. Kinneman, Chief
Nuclear Material Safety
Section Branch

FROM: Louis M. Bykoski
Division of Low-Level Waste Management
and Decommissioning, NMSS

SUBJECT: THE OFFICE OF THE GENERAL COUNSEL AND CONTRACTOR COMMENTS
ON NONSTANDARD FINANCIAL ASSURANCE SUBMITTALS

Our contractor, ICF Incorporated (ICF), and the Office of the General Counsel (OGC) have reviewed and provided comments on three Region I nonstandard financial assurance submittals sent to us for review. The following licensees are included the mailing.

1. University of Lowell;
2. New England Medical Center Hospitals; and
3. Cambridge Neuro Science

The ICF comments are presented in two parts. The first part deals with specific recommendations to correct deficiencies. The second part (Other Issues) provides a discussion of changes to the standard wording that are acceptable and are not considered to be deficiencies. The OGC comments include additional deficiencies that need to be corrected by the licensee and comments for our internal use.

You should carefully review the comments before preparing the deficiency letter. We have enclosed more specific information to help you sort and consolidate the ICF and OGC comments.

Should you have any further questions with regard to the comments, please call me on (301) 0572.

Louis M. Bykoski

Louis M. Bykoski
Division of Low-Level Waste Management
and Decommissioning, NMSS

OFFICIAL RECORD COPY ML 10

112964
9/23/91

LIST OF INSTRUCTIONS

UNIVERSITY OF LOWELL

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.

Memo to: Louis Bykoski, NMSS

From: Michael Finkelstein, OGC

Re: Final Review of Misc. August Nonstandard Financial
Assurance Submittals

University of Lowell- DFP/Revised Statement of Intent

All ICF recommendations should be implemented, especially a certification of the State of Mass.'s commitment to fund decommissioning costs. Evidence from an authorized State official that Massachusetts will take responsibility to pay for the decommissioning should the University default on its primary obligation is warranted.



ICF INCORPORATED

August 8, 1991

To: Dr. Lou Bykoski, NMSS/NRC

From: Greg Currey, John Collier, and Craig Dean, ICF Incorporated

Subject: Review of Revised DFP and Statement of Intent Submitted by
University of Lowell

As you requested on July 8, we have reviewed the University of Lowell's decommissioning funding plan (DFP) and revised statement of intent dated January 3, 1991.¹ The submission covers decommissioning costs in the amount of \$70,000 for NRC licenses 20-07446-01, 20-07446-02, and 20-07446-03, and SNM-714 issued under 10 CFR Parts 30 and 70. In the submission, the University states its intention to "petition the Legislature of the Commonwealth of Massachusetts to pass a bill to cover these expenses." The president of the University signed the statement of intent.

Upon reviewing this submission, ICF recommends that NRC Region I require the licensee to revise the submission as follows:

- (1) Incorporate a contingency factor into the total decommissioning cost estimate and clarify that no credit was taken for salvage value;
- (2) Describe the means to be used for adjusting cost estimates and associated funding levels over the life of the facility;
- (3) Clarify difference between number of workdays per year for supervisor and for other workers;
- (4) Correct calculation of total decommissioning costs; and
- (5) Certify/demonstrate the State's commitment to funding decommissioning costs.

Each of these recommendations is discussed below.

¹ The licensee submitted a revised submission in response to a letter from John D. Kinneman of NRC Region I, dated December 27, 1990. Based on the Region's initial review of the submission, the letter requested the licensee to submit additional information about its decommissioning funding plan.

- (1) Incorporate a Contingency Factor into the Total Decommissioning Cost Estimate and Clarify that No Credit Was Taken for Salvage Value

The licensee has apparently not made any allowance in its cost estimate for contingencies. *Regulatory Guide 3.66 "Standard Format and Content of Financial Assurance Mechanisms Required for Decommissioning Under 10 CFR Parts 30, 40, 70, and 72,"* June 1990, recommends, on page 1-10, that a contingency factor be included in the decommissioning cost estimate. Incorporating a contingency factor in the cost estimate will help to ensure that the licensee is prepared for unexpected circumstances that could raise decommissioning costs. NUREG/CR-1754 uses a contingency factor of 25 percent in its cost estimates for each of six reference laboratories.² ICF recommends that the licensee incorporate a contingency factor of at least 25 percent into its decommissioning cost estimate. The licensee may choose to use a lower contingency factor if it can show why a lower factor is appropriate. Furthermore, the licensee 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 1-10 of *Regulatory Guide 3.66*).

- (2) Describe the Means to be Used for Adjusting Cost Estimates and Associated Funding Levels Over the Life of the Facility

Under 10 CFR 30.35(e) and 70.25(e), the licensee is required to describe the means it will use to adjust decommissioning cost estimates and associated funding levels over the life of the facility. The licensee does not provide such a description in its decommissioning funding plan. ICF recommends that the licensee use the method described in *Regulatory Guide 3.66* for adjusting its cost estimates. *Regulatory Guide 3.66* suggests that adjustments be made for inflation and 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 other changes in prices of goods and services, for changes in facility conditions, and for changes in expected decommissioning procedures.

- (3) Clarify Difference Between Number of Workdays Per Year for Supervisor and for Other Workers

The licensee used a daily work rate for supervisors that is based on a 250 day work year. For all other workers, the licensee used a 300 day work year. Although the effect of this inconsistency is small, NRC may wish to ask the licensee to clarify this difference between the number of workdays per year for supervisors and other workers, and make adjustments to the number of workdays per year, daily labor rate, and labor costs for various types of workers, if necessary.

² 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) Correct Calculation of Total Decommissioning Costs

The licensee made two minor errors calculating the total decommissioning costs associated with its facility. The licensee added in \$1,200 as the estimated cost of a final radiation survey for its facility, but had specifically estimated the cost at \$1,280. The licensee also made an addition error in summing the costs of each component of the overall decommissioning plan. As a result of these two errors, the licensee calculated the total estimated decommissioning cost as \$70,580. The actual total estimate should be \$70,720. In addition to these calculation errors, the licensee rounded the total decommissioning cost estimate down to \$70,000 rather than rounding it up to \$71,000. NRC may wish to have the licensee correct the total decommissioning cost estimate.

(5) Certify/Demonstrate the State's Commitment to Funding Decommissioning Costs

Under 10 CFR 30.35(f)(4) and 70.25(f)(4), a federal, state, or local government licensee may use a statement of intent to demonstrate financial assurance for decommissioning costs. The University submitted the Appendix to Chapter 75A of the Massachusetts General Laws Annotated to demonstrate that it is part of the Commonwealth of Massachusetts State University System. The President of the University described his responsibility, through the University Board of Trustees, to petition the State legislature for funds to cover the University's ongoing and capital expenditures, and he stated his intention to petition the State Legislature to pass a bill to cover decommissioning expenses. However the submission did not provide evidence that the State is likely to honor the University's petition or that the State is ultimately responsible for decommissioning costs. The statement that the University will "petition the [State] to pass a bill to cover these expenses" suggests that the State may choose not to fund the costs.

ICF recommends that NRC require the licensee to certify that the petition for funds to cover the estimated decommissioning costs would be of a type and amount that the legislature ordinarily passes on a common and routine basis. This certification, which should come from the President of the University, is necessary to affirm that the State Legislature will honor the University's "petition" for funds.

Alternatively, the licensee may choose to submit other evidence that the State assumes ultimate responsibility for decommissioning the University's licensed activities. This evidence should specifically refer to the licensed facility and its decommissioning costs, and should come from an authorized State representative (the authority of the representative should be documented in the submission, as suggested in *Regulatory Guide 3.66* on page 3-26).

Other Issues

Finally, NRC should ensure that the statement of intent submitted by the licensee is originally signed, as recommended in *Regulatory Guide 3.66*.

Because ICF does not possess the original submissions, we cannot verify compliance with this requirement.

attachments

REVIEW OF DECOMMISSIONING FUNDING PLAN (DFP)

Name of company or institution: University of Lowell
(follow-up)

Number of licenses and applicable regulations: 3 10 CFR Part 30
 10 CFR Part 40
1 10 CFR Part 70
 10 CFR Part 72

Isotopes handled and possession limits (specify units):

Total cost estimate for licenses listed above: \$ 70,000.00

General comments on DFP:
DFP submitted in response to NRC comments on original submission.

CHECKLIST FOR REVIEWING DECOMMISSIONING FUNDING PLANS (DFP's)

QUESTIONS

COMMENTS

<p>(1) Does the licensee provide supporting documentation for its cost estimates?</p> <p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p>	
<p>(2) Does the licensee use the Appendix F "Cost Estimating Tables?"</p> <p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p>	
<p>(3) Does the cost estimate include the following major cost elements?</p>	
<p>(i) Planning and Preparation?</p> <p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p>	
<p>(ii) Decontamination and/or Dismantling of Radioactive Facility Components?</p> <p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p>	
<p>(iii) Packaging, Shipping, and Disposal of Radioactive Wastes?</p> <p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p>	
<p>(iv) Restoration of Contaminated Areas on Facility Grounds?</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA</p>	<p>Not applicable according to licensee.</p>
<p>(v) Final Radiation Survey?</p> <p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p>	
<p>(vi) Site Stabilization, Long-Term Surveillance?</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA</p>	<p>Not applicable according to licensee.</p>

CHECKLIST FOR REVIEWING DFP's (continued)

QUESTIONS

COMMENTS

<p>(4) Is the total cost estimate reasonable for the type(s) and size(s) of facility licensed?</p> <p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input type="checkbox"/> Not Sure</p>	<p>Estimate contains two mathematical errors, however overall estimate is still reasonable.</p>
<p>(5) Are the cost estimates for individual facility activities and/or components reasonable?</p> <p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input type="checkbox"/> Not Sure</p>	

CHECKLIST FOR REVIEWING DFP's (continued)

QUESTIONS

COMMENTS

<p>(6) Do the computations seem correct?</p> <p>___ Yes <input checked="" type="checkbox"/> No</p>	<p>Exept for supervisor, all worker cost/day based on 300 workdays/yr.</p> <p>In final total of decommissioning costs, final survey should be \$1,280.</p>
<p>(7) Does the licensee take credit for the potential salvage value of recovered materials or decontaminated equipment?</p> <p>___ Yes <input checked="" type="checkbox"/> No</p>	<p>Licensee does not mention salvage value.</p>
<p>(8) Does the licensee include a contingency factor in the cost estimate?</p> <p>___ Yes <input checked="" type="checkbox"/> No</p>	<p>Licensee does not mention contingency.</p>
<p>(9) Does the licensee provide a description of the methods that will be used to adjust the decommissioning cost estimate periodically over the life of the facility?</p> <p>___ Yes <input checked="" type="checkbox"/> No</p>	

APPENDIX A
CHECKLIST FOR DECOMMISSIONING FINANCIAL ASSURANCE

License # 15

20-07446-01

20-07446-02

20-07466-03

SUM-714

NAME OF LICENSEE OR APPLICANT

MAILING ADDRESS

University of Lowell

One University Avenue

Lowell, MA 01854

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. 1/22/91 Date of Financial Assurance Submission
2. Public Entity
 Private Entity
3. Certification of Financial Assurance
 Decommissioning Funding Plan *Revised DFP \$70,000*
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
 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.

University of Lowell

License #15-20-07446-01

20-07446-02

20-07446-03

SWM-714

APPENDIX E

CHECKLIST FOR STATEMENT OF INTENT

A. Type of Licensee (check one):

- Federal Government Licensee
- State Government Licensee
- Local Government Licensee

B. Check Documents Submitted for Statement of Intent

- Statement Guaranteeing Decommissioning
- Description of Authority of Government Entity to Make Statement of Intent

EXHIBIT 3-9

SNM-714

CHECKLIST OF CRITERIA FOR REVIEW OF STATEMENTS OF INTENT

No

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

No

- Evidence that the statement of intent is an originally signed duplicate.

Yes

- Identification of Federal, State, or local government licensee.

No

- Description of facilities for which Statement of Intent provides financial assurance and corresponding decommissioning costs.

Yes

- Statement that funds for decommissioning will be obtained when necessary.

Yes

- Recitation of authority to sign the Statement of Intent.

Yes

- Date.

Yes

- Names and positions of signatories.

Yes

- Signatures.

MAR 04 1991

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.
Union Carbide Corporation	37-19533-01	113570
Textron Defense Systems	20-02729-05	113598
Immunobiology Research Institute	29-28265-02	113779
AT&T Network Systems	20-03527-01	113367
Department of the Army		113939
Budd Company	37-05680-04	112995
Applied Health Physics, Inc.	37-09135-01	113046
Applied Health Physics, Inc.	37-14600-01	113045
Applied Health Physics, Inc.	SNM-811	113044
Cambridge Neuroscience Research, Inc.	20-27892-01	113931
Massachusetts General Hospital	20-03814-80	112977
New England Deaconess Hospital Corp.	20-00289-07	112651
University of Lowell	20-07446-01	112964

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.

Original Signed By:
John D. Kinneman

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

cc:
J. Glenn, NMSS
R. Bellamy, RI

RI:DRSS
Villar/bj
ckb for SV
02/27/91

[Signature]
RI:DRSS
Kinneman

02/27/91
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FINANCIAL ASSURANCE MEMO/4 - 0002.0.0
02/26/91



University of Lowell

One University Avenue

Lowell, Massachusetts 01854

(508) 452-5000

MS-16

L-3

January 3, 1991

License No. 20-7446-01
Docket No. 030-00787
Control No. 112964
Nuclear Regulatory Commission
Region 1
475 Allendale Road
King of Prussia, Pennsylvania 19406

Gentlemen:

This is in response to your letter dated December 27, 1990 requesting further information regarding our financial assurance for decommissioning License No. 20-07446-01. The following is a point by point response to your request:

1. Enclosed is our "statement of intent . . ." which has been modified to indicate that sufficient decommissioning funds will be appropriated in advance so as to not cause any delay in planned activities.
2. As President of the University of Lowell it is my responsibility to petition to the State Legislature through the University's Board of Trustees and the Board of Regents for funds covering the University's Annual Budget and any capital expenditures which may be necessary.
3. Details in our decommissioning costs are contained in completed Appendix F of Regulatory Guide 3.66 (enclosed).

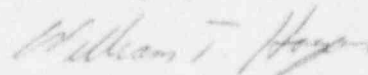
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112964
JAN 22 1991

4. Enclosed is the Appendix to Chapter 75A of the Massachusetts General Laws Annotated which shows that the University is part of the Commonwealth of Massachusetts State University System.

We would be pleased to provide any further information regarding this matter if you deem it necessary.

Sincerely yours,



William T. Hogan,
President



University of Lowell

One University Avenue

Lowell, Massachusetts 01854

(508) 452-5000

January 3, 1991

License No. 20-7446-01
Docket No. 030-00787
Control No. 112 964
Nuclear Regulatory Commission
475 Allendale Road
King of Prussia, Pennsylvania 19406

Gentlemen;

The following statements are made to satisfy the University of Lowell's requirements to provide a mechanism to assure that funds will be available in the event that it is necessary for the University to decommission its facilities and equipment under NRC Licenses 20-07446-01, 02, 03 and SNM-714.

We have estimated that the total present day costs of decommissioning the above licenses at \$70,000. If the University finds it necessary to decommission the above licenses it will petition the Legislature of the Commonwealth of Massachusetts to pass a bill to cover these expenses. This petition will be made sufficiently in advance of decommissioning so as to avoid any delays in required decommissioning activities.

It is our understanding that, since the University of Lowell is a State institution, the above statements will satisfy the financial assurance requirements of 10 CFR Parts 30 and 70.

Sincerely yours,

William T. Hogan

William T. Hogan
President

Decommissioning of U-Lowell
Radiation Facilities

USNRC License 20-07446-01, 02, 03 and SNM-714
APPENDIX F

COST ESTIMATING TABLES

May 1990

1. Planning and Preparation

Table 1

Task	Supervisor	Work Days			Total	Total Cost
		Foreman	H.P.	Clerical		
1. Preparation of Documentation for Regulatory Agencies	_____	_____	_____	_____	_____	_____
2. Submittal of Decommissioning Plan to NRC when required by 10 CFR 30.36(c)(2), 40.42(c)(2), or 70.38(c)(2)*	3	_____	5	2	_____	_____
3. Development of Work Plans	_____	1	1	_____	_____	_____
4. Procuring of Special Equipment	_____	_____	1	_____	_____	_____
5. Staff Training	_____	1	3	1	_____	_____
6. Characterization of Radiological Condition of the Facility (Including soil and tailings analysis or ground-water analysis, if applicable)	N/A	_____	_____	_____	_____	_____
7. Other	_____	_____	_____	_____	_____	_____
8. Total	3	2	10	3	_____	_____
	1000	280	1600	180	_____	\$3060

\$ Cost

* For assistance in preparation of cost estimate for 10 CFR Part 72, consult NRC Office of Nuclear Material Safety and Safeguards.

APPENDIX F (Continued)
COST ESTIMATING TABLES

Table 2

Position	Unit Cost for Workers		Worker Cost/year \$ k
	Basic Salaries (\$/yr)	Overhead Rate (%)	
Supervisor	60,000	20	72
Foreman	35,000	20	42.0
Craftsman	30,000	20	36.0
Technician	25,000	20	30.0
Health Physicist	40,000	20	48.0
Laborer	26,000	20	24.0
Clerical	15,000	20	18.0
Other			

2. Decontamination and/or Dismantling of Radioactive Facility Components*

	No.	Dimensions		No.	Dimensions
Dis Glove Boxes	2	.8 (m ³)	Amount of Floor Space	1	10 (m ²) Decon
Decon Fume Hood	2	2 (m ³)	Ventilation Ductwork		(m)
Hot Cells		(m ³)	Amount of Wall Space	1	10 (m ²) Decon
Decon Lab Benches	2	2 (m) ²	Other		
Decon Sink and Drain	3	2 (m) ³			

Table 3

Work Days

Task	Super-visor	Fore-man	Tech-nicians	H.P.	Crafts-men	La-borer	Total	Total Cost
1. Decon/Dismantle Major Components and/or Processing and Storage Tanks	1	2	1	1	2	10		
2. Decon/Dismantle Laboratories, Fume Hoods, Glove Boxes, Benches, etc.	1	2	1	1	2	10		

*Indicate whether component is to be decontaminated to unrestricted release levels or packaged and disposed of at a low-level waste site.

APPENDIX F (Continued)
COST ESTIMATING TABLES

	Sup.	Foreman	Tech.	HP.	Craftman	Labor	Total	Total cost
3. Decon/Dis- mantle Waste Areas	<u>1/2</u>	<u>1</u>	<u>2</u>	<u>1</u>	<u>1</u>	<u>5</u>	_____	_____
X Radwaste Areas								
- Scrap Recovery Areas								
- Other								
4. Decon/Dis- mantle Service Facilities	NONE						_____	_____
- Maintenance Shop								
- Decontamination Areas								
- Ventilation Systems								
- Other								
5. Decon/Dis- mantle Waste Treatment Facilities and Storage Areas on the Site (Including exhume and package contaminated soil and tail- ings, if any)	NONE						_____	_____
- Fluoride Lagoons								
- Nitrate Lagoons								
- CaF2 Waste Recovery								
- Ground Water Restoration								
- Other								
6. Monitor for compliance, reclean and remonitor, if necessary	<u>1/2</u>	<u>1</u>	<u>5</u>	<u>2</u>	<u>-</u>	<u>3</u>	_____	_____
7. Other (e.g., contractor fees) TOTAL	<u>3</u> 1000	<u>6</u> 840	<u>9</u> 900	<u>5</u> 800	<u>5</u> 600	<u>28</u> 2,240	_____	<u>\$6380</u>

APPENDIX F (Continued)
COST ESTIMATING TABLES

Table 4

<u>Equipment/Supply</u>	<u>Quantity</u>	<u>Cost</u>
Decon Equipment		5000
& Supplies		

3. Packaging, Shipping, and Disposal of Radioactive Wastes

Table 5

<u>Waste Type</u>	<u>Volume (m³)</u>	<u>No. of Containers</u>	<u>Type of Containers</u>	<u>Unit Cost of Container</u>	<u>Cost of Container</u>
Total					

Table 6

Distance Shipped		(miles)
Unit cost for shipment		(\$/mile/truckload)
Additional charges		
Overweight		(\$/mile)
Surcharges		(\$/mile)

<u>Waste Type</u>	<u>No. of Shipments</u>	<u>Unit Cost for Shipping</u>	<u>Distance Shipped</u>	<u>Surcharge</u>	<u>Transportation Cost</u>
Total					

Table 7

Burial Charges Total		(\$/m ³)
Surcharges		
Per container		(\$)
Disposal		(\$/m ³)

<u>Waste Type</u>	<u>Burial Volume m³</u>	<u>Unit Cost of Burial</u>	<u>Surcharge</u>	<u>Burial Total Disposal Cost</u>
B Sealed Sources				30,000
A	10			25,000
Total				

APPENDIX F (Continued)
COST ESTIMATING TABLES

4. Restoration of Contaminated Areas on Facility Ground NONE

Table 8

<u>Task</u>	<u>Supervisor</u>	<u>Work Days</u>			<u>Total</u>	<u>Total Cost</u>
		<u>Foreman</u>	<u>H.P.</u>	<u>Clerical</u>		
Backfill and Restore Site	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____

5. Final Radiation Survey

Table 9

<u>Task</u>	<u>Supervisor</u>	<u>Work Days</u>			<u>Total</u>	<u>Total Cost</u>
		<u>Foreman</u>	<u>H.P.</u>	<u>Clerical</u>		
_____	1	_____	5	3	_____	_____
_____	_____	_____	_____	_____	_____	_____
<u>Total</u>	1	_____	5	3	_____	_____
	300		800	180		1280

6. Site Stabilization, Long-Term Surveillance (if applicable) NONE

Table 10

<u>Task</u>	<u>Supervisor</u>	<u>Work Days</u>			<u>Total</u>	<u>Total Cost</u>
		<u>Foreman</u>	<u>H.P.</u>	<u>Clerical</u>		
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____

Total Decommissioning Costs

1. Planning and Preperation	\$ 3,060
2. Decommissioning Work	\$ 6,380
3. Waste Disposal	\$55,000
4. Final Survey	\$ 1,200
5. Equipment	\$ 5,000

_____ \$70,580

Round to \$70,000

CHAPTER 75A
UNIVERSITY OF LOWELL

Sec.

1. Purposes; status; governing body.
- 1A. Delegation of authority.
- 1B. Branch banks on institute grounds authorized.
2. Seal.
3. Approval of accounts and expenditures.
- 3A. Budget.
- 3B. Appropriations.
4. Annual audit of accounts.
5. Receipts and disbursements; annual report; monthly statements; accounting system.
6. Meetings of trustees; notice.
7. Rules and regulations.
8. Administration of special trusts, grants, etc.; contracts to promote objectives of university; trust funds.
9. Administration of special trusts, grants, etc.
- 9A. Purchases.
10. Annual report.
11. Officers and professional staff; terms of employment; tenure; salaries; annual list of positions; nonprofessional employees.
- 11A. Travel policy.
- 11B. Control, movement and parking of motor vehicles.
12. Insurance.
13. Tuition rates.
14. Evening division; courses of instruction.
15. Leaves of absence to teachers.
16. Commonwealth scholarships.
17. Scholarships provided by city of Lowell.
18. Lease of land to professors, societies, et al.
19. Approval of leases.
20. Taxation of leased land by city of Lowell.
21. Employment of students.
22. University of Lowell research foundation; establishment; purpose; powers and duties.
23. Publication of results of research, etc.

APPENDIX TO CHAPTER 75A

UNIVERSITY OF LOWELL BUILDING AUTHORITY

The section headings for Massachusetts General Laws Annotated have been editorially supplied.

St.1973, c. 1175, § 7, approved December 10, 1973, amended the General Laws by striking out former Chapter 75A entitled "Lowell Technological Institute of Massachusetts" con-

sisting of §§ 1 to 24, and inserting in place thereof the present Chapter 75A entitled "University of Lowell" consisting of §§ 1 to 23.

Sections 8 to 14 of St.1973, c. 1175, providing for the merger in 1975 of the Lowell Technological Institute of Massachusetts and the State College at Lowell into the University of Lowell created by this Act, and for the effectiveness until then and thereafter of the former and present Chapters 75A, respectively, including transitional provisions, are set out in the Historical Note under § 1 of this chapter.

DISPOSITION TABLE

Showing where the subject matter in sections of former Chapter 75A stricken out by St.1973, c. 1175, § 7, is now covered in the sections of the present Chapter 75A inserted in place thereof by the same act.

Former Sections	Present Sections	Former Sections	Present Sections
1	1	12	11
1A	1A	12A	11A
1B	1B	12B	11B
2	2	13	12
3	3	14	13
3A	3A	15	14
3B	3B	16	15
4	4	17	16
5	5	18	17
6	6	19	18
7	7	20	19
8	8, 9	21	20
9		22	21
9A	9A	23	22
10	10	24	23
11 (previously repealed)	1		

Section 9, derived from St.1953, c. 407, § 3, related to management and maintenance of property.

Cross References

- Bay State Skills Corporation Act, see c. 407, § 1 et seq.
College Student Loan Authority, see c. 15C, § 1 et seq.
New England Educational Loan Marketing Corporation Act, see c. 15B, § 1 et seq.

§ 1. Purposes; status; governing body

The University of Lowell, hereafter referred to as the university, shall be maintained by the commonwealth to provide, without discrimination, educational programs, research, extension, and continuing education services in the liberal arts, engineering and sciences.

and in the professions, and in those professional areas normally requiring either education beyond four years of undergraduate training or a basic or advanced degree beyond the bachelor's level. The University of Lowell shall offer the adult education services of the university extension program. The university shall, with the approval of the board of trustees and the board of higher education, have general authority to award any earned doctoral degrees, particularly in the sciences, the health professions and music.

The university shall be a state institution within the department of education but not under its control and shall be governed solely by the board of trustees whose authority, responsibility, rights, privileges, powers and duties specifically conferred by this chapter shall be the same as those customarily and traditionally exercised by governing boards of institutions of higher learning. In exercising such authority, responsibility, rights, privileges, powers, and duties said board shall not in the management of the affairs of the University of Lowell be subject to, or superseded in any such authority by, any other state board, bureau, department or commission. To this end, the trustees shall maintain high educational standards at the University of Lowell, and shall, subject only to such general authority in the board of higher education, have complete authority to establish, locate, support, consolidate or abolish classes, courses, curricula, departments, divisions, schools or colleges of the University of Lowell, wherever and whenever required in meeting the needs of the commonwealth in the fields of public higher education. The trustees shall establish for the University of Lowell the qualifications and standards for admission, promotion and graduation, and shall award academic degrees and diplomas and confer honors as is customary in American Universities, except to the extent any such exercise might be inconsistent with determinations of the board of higher education delineating functions and programs for institutions and segments of institutions of public higher education. The trustees may confer such honorary degrees as they deem appropriate.

Added by St.1973, c. 1175, § 7.

Historical Note

St.1973, c. 1175, § 7, adding this chapter, consisting of this section and §§ 2 to 23, was approved Dec. 10, 1973.

Sections 8 to 14 of St.1973, c. 1175, as amended, provided:

"Section 8. There shall be established a Merger Planning Board which

shall formulate plans for the consolidation of the State College at Lowell and the Lowell Technological Institute of Massachusetts between January first, nineteen hundred and seventy-five, and July first, nineteen hundred and seventy-five. Said Board shall consist of

eleven members appointed by the governor, one of whom shall be a member of the administration from the Lowell Technological Institute of Massachusetts, one of whom shall be a member of the administration from the State College at Lowell, one of whom shall be a member of the faculty from the Lowell Technological Institute of Massachusetts, one of whom shall be a student from the Lowell Technological Institute of Massachusetts, one of whom shall be a graduate of the Lowell Technological Institute of Massachusetts, one of whom shall be a graduate of the State College at Lowell, and three of whom shall be from the general public.

"The board of trustees of the University of Lowell shall not be appointed prior to the second Wednesday of January, nineteen hundred and seventy-five, and upon the appointment and qualification of said new trustees, the functions and duties of the Merger Planning Board shall terminate and the functions, duties and responsibilities shall thereafter be vested in said board of trustees. [Amended by St.1974, c. 329, § 2.]

"Section 9. There shall be established by the Merger Planning Board an unpaid planning staff which shall be composed of students, faculty, administrators, nonprofessional personnel and any persons deemed necessary to advise the Merger Planning Board on ways and means of implementing said merger. The planning staff shall assist the Merger Planning Board in formulating plans for said merger.

"Section 10. Upon completion of the merger, the board of trustees of the University of Lowell shall be vested with all the powers, rights and privileges and shall be subject to all the duties of the trustees of the Lowell Technological Institute of Massachusetts and the State College at Lowell. The Lowell Technological Institute of Massachusetts and the State College at Lowell shall thereby be consolidated into the University of Lowell which shall be deemed for all purposes a continuation of the Lowell Technological Institute of Massachusetts and the State College at Lowell. The said trustees of the Lowell

Technological Institute of Massachusetts and the State College at Lowell shall transfer to the board of trustees of the University of Lowell all property, real or personal and all rights which they hold by reason of their office as said trustees and they shall execute any deeds, contracts and assignments and institute any legal proceedings necessary to transfer such property and rights.

"The Merger Planning Board and the board of trustees shall provide adequate parking facilities to the present educational institutions without the taking of private homes. No further expansion shall be authorized by said boards unless parking facilities are provided without the taking of private homes.

"Section 11. Upon completion of the merger, the phrases 'Lowell Technological Institute' and 'the State College at Lowell' or any words connoting the same when used in any statute, ordinance, by-law, rule or regulation shall mean the University of Lowell.

"Section 12. The administrators, faculty, professional, and nonprofessional employees, on the staff of Lowell State College and Lowell Technological Institute on the effective date of this act, shall be and are hereby transferred to the staff of the University of Lowell, without loss of salary or seniority in effect at the time of the said effective date, except that in the case of personnel with similar titles and duties in each institution the board of trustees with the recommendation of the president of the University of Lowell shall have authority to reassign such personnel to comparable duties under different titles than those existing at the time of the merger. The tenure, seniority, retirement, insurance, industrial accident coverage and all other rights and benefits to which the employees of the Lowell Technological Institute of Massachusetts and the State College at Lowell are now entitled shall not be affected by the passage of this act. The president of Lowell Technological Institute as of January third, nineteen hundred and seventy-three, shall be the first tenured executive vice president and assistant to the president serving under the president of the University of Lowell. The

Historical Note

Prior Laws:

G.L. c. 75A, § 6, as added by St.1953,
c. 407, § 2.

§ 7. Rules and regulations

Notwithstanding any contrary provision of law, except as herein provided, the trustees may adopt, amend or repeal such rules and regulations for the government of the university for the management, control and administration of its affairs, for its faculty, students and employees, and for the regulation of their own body, as they deem necessary, and may impose reasonable penalties for the violation of such rules and regulations. The trustees shall publish such rules and regulations and shall file copies thereof with the governor, the executive office for administration and finance, and the joint committee on ways and means.

Added by St.1978, c. 1176, § 7.

Historical Note

Prior Laws:

G.L. c. 75A, § 7, as added by St.1953,
c. 407, § 2.
St.1953, c. 701, § 6.

§ 8. Administration of special trusts, grants, etc.; contracts to promote objectives of university; trust funds

The trustees shall administer property held in accordance with special trusts, and shall also administer grants or devises of land and gifts or bequests of personal or real property made to the commonwealth for the use of the university and execute certain trusts, investing the proceeds thereof in notes or bonds or property secured by sufficient mortgages or other securities.¹

The trustees shall have the authority to assent to federal laws designed to benefit the university and to enter into agreements or contracts with the federal government or agencies thereof, as well as into agreements or contracts with agencies of other governments, other colleges and universities, foundations, corporations, interstate compact agencies and individuals where such agreements or contracts, in the judgment of the trustees, will promote the objectives of the university. The trustees may, from time to time, establish and manage trust funds for self-amortizing projects and self-supporting

activities including, but not limited to, the operation of the student health service, research institutes and foundations, dormitories and student and faculty facilities. All income from such projects or activities shall be held in trust by the trustees and expended for the purpose for which the trust fund was established. The trustees may, for the purposes of this section, group together several or more projects and activities into one or more funds as is, in their judgment, required to best effectuate the purposes of the projects and activities and the purposes of the university. Any unrestricted balances remaining in a trust fund upon its termination shall be used as directed by the trustees for the general purposes of the university. All receipts from student activities shall be retained by the trustees in trust fund or trust funds and shall be expended as the trustees shall direct in furthering the activities from which the receipts were derived.

Added by St.1978, c. 1176, § 7.

¹ Text of first paragraph is similar to § 9 of this chapter. So in enrolled bill.

Historical Note

Prior Laws:

G.L. c. 75A, § 8, as added by St.1953,
c. 407, § 2.
St.1953, c. 701, § 7.

Law Review Commentaries

Common Investment funds of colleges and universities. Robert I. Hunneman (1967) 11 Boston Bar J. No. 11, p. 7.

Library References

Colleges and Universities 4-6(2, 5), 7. C.J.B. Colleges and Universities §§ 14, 16 et seq.

§ 9. Administration of special trusts, grants, etc.

The trustees shall administer property held in accordance with special trusts, and shall also administer grants or devises of land and gifts or bequests of personal or real property made to the commonwealth for the use of the university, and shall execute certain trusts investing the proceeds thereof in notes or bonds or property secured by sufficient mortgages or other securities.¹

Added by St.1978, c. 1176, § 7.

¹ Text of this section is similar to first paragraph of § 8 of this chapter. So in enrolled bill.

Library References

Colleges and Universities ¶9. C.J.S. Colleges and Universities § 28.

§ 17. Scholarships provided by city of Lowell

The city of Lowell may annually provide for day scholarships at the university for residents of the city of Lowell, the sum so required to be raised by taxation. The number of such scholarships shall be determined by the city council.

Added by St.1973, c. 1175, § 7. Amended by St.1974, c. 520, § 4.

Historical Note

St.1974, c. 520, § 4, approved July 11, 1974, deleted "not more than ten four-year" preceding "day" in the first sentence, and added the second sentence.

Prior Laws:
G.L. c. 75A, § 18, as added by St.1953, c. 407, § 3.

§ 18. Lease of land to professors, societies, et al.

Subject to section twenty the trustees may, in the name of and for the commonwealth, lease to any professor, instructor, teacher or employee of said university, or to any society, association or fraternity established thereat, land in the city of Lowell owned by the commonwealth, for the erection and maintenance of suitable dwellings thereon, at the sole expense of the lessee and for the lessee's use and occupancy. Not more than one half an acre shall be so leased to any one such person or organization. Such leases shall contain such written terms, conditions, restrictions and reservations as the parties agree upon.

Added by St.1973, c. 1175, § 7.

Historical Note

Prior Laws:
G.L. c. 75A, § 19, as added by St.1953, c. 407, § 8.

§ 19. Approval of leases

No lease under section nineteen¹ shall become operative until it is approved by the governor and council.

Added by St.1973, c. 1175, § 7.

¹ So in original; probably should read "eighteen".

Historical Note

Prior Laws:

G.L. c. 75A, § 20, as added by St.1953, c. 407, § 3.

§ 20. Taxation of leased land by city of Lowell

The lessee and his assignees shall be liable to taxation upon building erected on land leased under section nineteen¹ to the extent of its value as determined by the assessors of the city of Lowell.

Added by St.1973, c. 1175, § 7.

¹ So in original; probably should read "eighteen".

Historical Note

Prior Laws:

G.L. c. 75A, § 21, as added by St.1953, c. 407, § 3.

Library References

Landlord and Tenant ¶148, 149. C.J.S. Landlord and Tenant § 3
Taxation ¶88, 178, 247. seq.
C.J.S. Taxation ¶ 92, 201, 236.

§ 21. Employment of students

The trustees shall make just and reasonable provision for employment of students at the university for manual labor and train skilled labor consistent with the institute's needs.

Added by St.1973, c. 1175, § 7.

Historical Note

Prior Laws:

G.L. c. 75A, § 22, as added by St.1953, c. 407, § 8.

Library References

Colleges and Universities ¶9. C.J.S. Colleges and Universities et seq.

§ 22. University of Lowell research foundation; establish purpose; powers and duties

The university may establish and manage, under such regulations as the board of trustees may from time to time prescribe, University of Lowell Research Foundation, for the purpose of promoting research at the university by obtaining, administering or

posing of patents or inventions resulting from such research or otherwise and devoting the income therefrom to further research, beneficial to the university and to the commonwealth.

The University of Lowell Research Foundation may (1) receive and hold in separate custody gifts, bequests and devises of real or personal property; (2) receive and hold in separate custody compensation or reimbursement resulting from inventions, patents, contractual or other research, the conducting of tests for outside agencies or other funds that may be acceptable to the foundation; (3) disburse funds so acquired for purposes of instruction, research, tests, invention, discovery, development or engineering consistent herewith; (4) obtain, administer and dispose of patents, assignments, grants, licenses or other rights and hold the same in separate custody; (5) make assignments, grants, licenses, or other disposal equitably in the public interest of any rights owned, acquired or controlled by the Foundation in or to inventions, discoveries, patent applications or patents, and to charge therefor and collect and to incorporate in funds in the custody of the Foundation reasonable compensation in such form as the board of trustees may determine; and (6) execute contracts with employees or others for the purpose of carrying out the provisions hereof and permitting such employees or others to share in the net proceeds of such contracts as the board of trustees shall determine.

The foregoing shall not authorize any action in contravention of the requirements of Section 1 of Article LXIII of the Amendments to the Constitution. The funds of said Foundation shall be subject to annual audit by the state auditor. No activities, specified in the foregoing, shall be undertaken by said Foundation which in the opinion of the board of trustees will be likely to interfere with the regular, efficient and proper exercise of the functions of said university. In conducting contractual or other research, tests or similar activities, said Foundation shall give preference to citizens of and to corporations organized under the laws of the commonwealth.

The board of trustees shall prescribe and enforce such regulations as it may deem necessary, with regard to the ownership of inventions developed with the use of facilities of the institute by students, research fellows, staff members, faculty or other persons, the transfer of such inventions, or patent applications or patents resulting therefrom, to the Foundation, the amount of the respective shares of the inventor, the university, and the Foundation in the proceeds therefrom, and the arbitrating of any and all disagreements involving the same.

Added by St.1973, c. 1175, § 7.

Historical Note

Prior Laws:

G.L. c. 75A, § 23, as added by St.1953, c. 407, § 3.

United States Supreme Court

Copyright and patents, see *Kewanee Oil Co. v. Bicron Corp.*, 1975, 94 S.Ct. 1879, 416 U.S. 470, 40 L.Ed.2d 315.

Notes of Decisions

1. In general

Since Lowell Technological Institute (now University of Lowell) was an institution of higher education within the meaning of c. 151A, § 4A, and Lowell Technological Institute Research Foundation (now University of Lowell Research Foundation) had sufficient nexus with Institute so as to bring it under umbrella of Institute's status as institu-

tion of higher education, employees of research foundation were required to be covered for purposes of unemployment insurance on a reimbursing basis as provided by c. 151A, §§ 4A, 4B, rather than the payroll tax basis for employees of nonprofit organizations under c. 151A, § 14A. Op.Atty.Gen., March 24, 1972, p. 105.

§ 23. Publication of results of research, etc.

The director may from time to time publish in reports, bulletins, special circulars or otherwise, the results of special studies or research or analysis of general interest and value to the industries represented at or interested in the university.

Added by St.1973, c. 1175, § 7.

Historical Note

Prior Laws:

G.L. c. 75A, § 24, as added by St.1953, c. 407, § 3.

DEC 27 1990

License No. 20-07446-01
Docket No. 030-00787
Control No. 112964

University of Lowell
ATTN: William T. Hogan, President
One University Avenue
Lowell, Massachusetts 01854

Gentlemen:

This is in reference to your letter dated May 14, 1990 to provide financial assurance for License No. 20-07446-01. In order to continue our review, we need the following additional information:

1. Please modify your statement of intent to indicate that funds for decommissioning costs will be requested and obtained sufficiently in advance of decommissioning to prevent delay of required activities.
2. Please provide evidence that the individuals signing the statement of intent are authorized to petition the funds described.
3. Please give the details of your decommissioning cost estimate. Your cost estimate should contain a level of detail on par with that contained in Appendix F, Regulatory Guide 3.66 (enclosed).
4. Please provide information indicating that the University of Lowell is a government licensee (i.e., that you are controlled by a federal, state, or local government agency that can serve as a guarantor for decommissioning the site).

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. 112964.

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
Nuclear Materials Safety Section B
Division of Radiation Safety
and Safeguards

Enclosures:
Regulatory Guide 3.66

RI:DRSS
Reber/cmm

12/12/90

VI:DRSS
Kinneman

12/12/90

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20-07446-01

LIST OF INSTRUCTIONS

UNIVERSITY OF LOWELL

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 2 plus final paragraph.
2. All OGC comments.

All other comments and discussions are for reviewer information.

From: Michael Finkelstein, OGC/Rulemaking & Fuel Cycle

Re: Comments on ICF review Submitted Nov. 16th, 1990

For each of the submittals listed below the regional reviewers must verify that the document is a signed copy of the original and duly notarized.

University of Lowell

ICF's 2 recommendations should be implemented:

1) submittal of additional detail to support the \$70k cost estimate; and

2) demonstration that the University is eligible to use the Statement of Intent mechanism (i.e. evidence submitted that the Univ. is a government entity and that the State of Massachusetts accepts ultimate responsibility for the decommissioning costs of the licensee).

ICF's assumption on restoration, stabilization and surveillance is again premature. The regional reviewer must verify the above assumptions.



ICF INCORPORATED

November 13, 1990

To: Dr. Lou Bykoski, NMSS/NRC

From: Tom Ciaglo, Michael Berg, John Collier, and Craig Dean,
ICF Incorporated

Subject: Review of DFP/Statement of Intent Submitted by University of
Lowell

The University of Lowell submitted a statement of intent in the amount of \$70,000. The submission covers decommissioning costs for NRC licenses 20-07446-01, 20-07446-02, and 20-07446-03, and SNM-714 issued under 10 CFR Parts 30 and 70, apparently for facilities and equipment located at the University in Lowell, Massachusetts. In the submission, the University states its intention to "petition the General Legislature of the Commonwealth of Massachusetts to pass a bill to cover decommissioning expenses." The president of the University signed the statement of intent.

Upon reviewing this submission, ICF recommends that NRC Region I require the licensee to revise the submission as follows:

- (1) Submit additional detail to support the cost estimate; and
- (2) Demonstrate that the University is eligible to use a statement of intent.

Each of these recommendations is discussed below.

(1) Submit Additional Detail to Support the Cost Estimate

The licensee estimated a total decommissioning cost of \$70,000 for its three licenses under 10 CFR Part 30 and its one license under 10 CFR Part 70. However, the licensee provided no description of the work required to decommission its facilities, or of the facilities themselves. Therefore, ICF cannot evaluate whether the licensee included reasonable costs 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 estimate¹, 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) and 70.25(e), the licensee should describe the means it will use to adjust decommissioning its 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) Demonstrate that the University is Eligible to Use a Statement of Intent

Under 10 CFR 30.35(f)(4) and 70.25(f)(4), a federal, state, or local government licensee may use a statement of intent to demonstrate financial assurance for decommissioning costs. The University has not demonstrated its eligibility to use this mechanism. Its eligibility to use the statement of intent relies on its legal and financial relationship with the State of Massachusetts, a relationship that is not documented by the submission. Although the University has declared its intention to petition the State Legislature to pass a bill to cover decommissioning expenses, the University has not provided evidence that it is a State entity. In addition, the University has not shown that the State is ultimately responsible for decommissioning costs.

ICF recommends that NRC require the licensee to submit evidence of its eligibility to use a statement of intent. To demonstrate its eligibility, the University should provide evidence that the State assumes ultimate responsibility for decommissioning the University's licensed activities. This evidence of State responsibility is necessary to ensure that the Legislature will have a mandate to honor the University's "petition" for funds. The evidence should specifically refer to the licensed facility, and should come from an authorized State representative (the authority of the representative should be documented in the submission, as suggested in the draft *Regulatory Guide* on page 3-34).

Requiring the State's acceptance of responsibility for the specific decommissioning obligation is consistent with the preamble to the final decommissioning rule, which states that the "purpose of the [statement of intent] is to permit licensees to obtain a guarantee that a government agency will assume financial responsibility for decommissioning the facility. This would most likely be possible when the licensee is a State or Federal agency or a State-affiliated organization such as a university or hospital" (53 Federal Register 24037, June 27, 1988).

¹ 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.

Other Issues

Finally, NRC should ensure that the statement of intent submitted by the licensee is an originally signed duplicate, as recommended in NRC's draft *Regulatory Guide*. Because ICF does not possess the original submissions, we cannot verify compliance with this requirement.

attachments

REVIEW OF DECOMMISSIONING FUNDING PLAN (DFP)

Name of company or institution: University of Lowell

Number of licenses and applicable regulations:

<u>3</u>	10 CFR Part 30
<u> </u>	10 CFR Part 40
<u>1</u>	10 CFR Part 70
<u> </u>	10 CFR Part 72

Isotopes handled and possession limits (specify units):

<u> </u>	<u> </u>
<u> </u>	<u> </u>
<u> </u>	<u> </u>
<u> </u>	<u> </u>
<u> </u>	<u> </u>
<u> </u>	<u> </u>
<u> </u>	<u> </u>

Total cost estimate for licenses listed above: \$ 70,000.00

General comments on DFP:

1-10-81

CHECKLIST FOR REVIEWING DECOMMISSIONING FUNDING PLANS (DFF's)

QUESTIONS

COMMENTS

<p>(1) Does the licensee provide supporting documentation for its cost estimates?</p> <p>___ Yes <input checked="" type="checkbox"/> No</p>	<p><i>No information given.</i></p>
<p>(2) Does the licensee use the Appendix F "Cost Estimating Tables?"</p> <p>___ Yes <input checked="" type="checkbox"/> No</p>	
<p>(3) Does the cost estimate include the following major cost elements?</p>	<p><i>WE ASSUME THAT THE LICENSEE DOES NOT NEED TO RESTORE CONTAMINATED GROUNDS, STABILIZE ITS SITE, OR CONDUCT LONG-TERM SURVEILLANCE TO PROPERLY DECOMMISSION ITS FACILITY SINCE IT HAS NOT INCLUDED THESE ACTIVITIES IN ITS DFF.</i></p>
<p>(i) Planning and Preparation?</p> <p>___ Yes <input checked="" type="checkbox"/> No</p>	
<p>(ii) Decontamination and/or Dismantling of Radioactive Facility Components?</p> <p>___ Yes <input checked="" type="checkbox"/> No</p>	
<p>(iii) Packaging, Shipping, and Disposal of Radioactive Wastes?</p> <p>___ Yes <input checked="" type="checkbox"/> No</p>	
<p>(iv) Restoration of Contaminated Areas on Facility Grounds?</p> <p>___ Yes <input checked="" type="checkbox"/> No ___ NA</p>	
<p>(v) Final Radiation Survey?</p> <p>___ Yes <input checked="" type="checkbox"/> No</p>	
<p>(vi) Site Stabilization, Long-Term Surveillance?</p> <p>___ Yes <input checked="" type="checkbox"/> No ___ NA</p>	

CHECKLIST FOR REVIEWING DFP's (continued)

QUESTIONS

COMMENTS

<p>(4) Is the total cost estimate reasonable for the type(s) and size(s) of facility licensed?</p> <p>___ Yes ___ No</p> <p><input checked="" type="checkbox"/> Not Sure</p>	
<p>(5) Are the cost estimates for individual facility activities and/or components reasonable?</p> <p>___ Yes ___ No</p> <p><input checked="" type="checkbox"/> Not Sure</p>	

CHECKLIST FOR REVIEWING DFP's (continued)

QUESTIONS

COMMENTS

<p>(6) Do the computations seem correct?</p> <p>___ Yes ___ No</p>	<p><i>No computations.</i></p>
<p>(7) Does the licensee take credit for the potential salvage value of recovered materials or decontaminated equipment?</p> <p>___ Yes ___ No ?</p>	<p><i>Information not given.</i></p>
<p>(8) Does the licensee include a contingency factor in the cost estimate?</p> <p>___ Yes ___ No</p>	<p><i>Information not given.</i></p>
<p>(9) Does the licensee provide a description of the methods that will be used to adjust the decommissioning cost estimate periodically over the life of the facility?</p> <p>___ Yes <input checked="" type="checkbox"/> No</p>	

APPENDIX A
CHECKLIST FOR DECOMMISSIONING FINANCIAL ASSURANCE

NAME OF LICENSEE OR APPLICANT University of Lowell
 MAILING ADDRESS One University Avenue
Lowell, Massachusetts 01854

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

Statement of
Intent
covers
1.7 on CW

- 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. July 25, 1990 Date of Financial Assurance Submission *letter dated May 14, 1990*
2. Public Entity *State University*
 Private Entity
3. Certification of Financial Assurance
 Decommissioning Funding Plan
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
 Line of Credit
 Parent Company Guarantee/Financial Test^R
- (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
 Sinking Bond
 Letter of Credit
 Line of Credit
- (d) Statement of Intent (public entities only)

^RMay not be used in combination with any other instrument.

APPENDIX E

CHECKLIST FOR STATEMENT OF INTENT

A. Type of Licensee (check one):

Federal Government Licensee

State Government Licensee

Local Government Licensee

B. Check Documents Submitted for Statement of Intent

Statement Guaranteeing Decommissioning

Description of Authority of Government Entity to Make Statement of Intent

EXHIBIT 3-9

CHECKLIST OF CRITERIA FOR REVIEW OF STATEMENTS OF INTENT

- ✓ • Copy of evidence indicating that parties signing the financial instrument (for the applicant) are authorized to represent the organization in the transaction.
- ICF cannot check • Evidence that the statement of intent is an originally signed duplicate.
- ✓ • Identification of Federal, State, or local government licensee.
- Description of facilities for which Statement of Intent provides financial assurance and corresponding decommissioning costs. *too brief*
- ✓ • Statement that funds for decommissioning will be obtained when necessary.
- NO • Recitation of authority to sign the Statement of Intent.
~~_____~~
- ✓ • Date.
- ✓ • Names and positions of signatories.
- ✓ • Signatures.



University of Lowell
One University Avenue
Lowell, Massachusetts 01854

(617) 452-5000

May 14, 1990

Nuclear Regulatory Commission
475 Allendale Road
King of Prussia, Pennsylvania 19406

Gentlemen;

The following statements are made to satisfy the University of Lowell's requirements to provide a mechanism to assure that funds will be available in the event that it is necessary for the University to decommission its facilities and equipment under NRC Licenses 20-07846-01, 02, 03 and SNM-714.

We have estimated that the total present day costs of decommissioning the above licenses at \$70,000. If the University finds it necessary to decommission the above licenses it will petition the General Legislature of the Commonwealth of Massachusetts to pass a bill to cover these expenses.

It is our understanding since the University of Lowell is a State institution the above statements will satisfy the financial assurance requirements of 10 CFR Parts 30 and 70.

Sincerely yours,

William T. Hogan
William T. Hogan
President

RECEIVED
90 AUG -21 P4
U.S. MAIL
FEE NOT REQUIRED

Log	Aug-1 I
Remitter	
Check No.	
Amount	
Fee Category	3P EX(32) 2K 1D
Type of Fee	Card
Date Check Rec'd.	
Date Completed	10/10/90
By:	Per 9/30/90 Memo

FEE NOT REQUIRED

112964

JUL 25 1990

(FOR LFMS USE)
INFORMATION FROM LTS

BETWEEN:

LICENSE FEE MANAGEMENT BRANCH, ARM
AND
REGIONAL LICENSING SECTIONS

: PROGRAM CODE: 03610
: STATUS CODE: 0
: FEE CATEGORY: 3N 3P EX 3L 2C 1D
: EXP. DATE: 19940531
: FEE COMMENTS: LT SERVICE ADDED 9/24/85
:.....

LICENSE FEE TRANSMITTAL

A. REGION I

1. APPLICATION ATTACHED
APPLICANT/LICENSEE: LOWELL, UNIVERSITY OF
RECEIVED DATE: 900725
DOCKET NO: 3000787
CONTROL NO.: 112964
LICENSE NO.: 20-07446-01
ACTION TYPE: AMENDMENT

2. FEE ATTACHED
AMOUNT: -----
CHECK NO.: -----

3. COMMENTS
F/A only

SIGNED DMR
DATE 7-30-90

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

1. FEE CATEGORY AND AMOUNT: 3N 3P EX (3L) 2C 1D FEE NOT REQUIRED

2. CORRECT FEE PAID. APPLICATION MAY BE PROCESSED FOR:
AMENDMENT -----
RENEWAL -----
LICENSE -----

per 8/30/90 Memo

3. OTHER -----

SIGNED AK
DATE 10/10/90