

TITLE Toxic Materials Handling Laboratory

1. BASIS FOR REQUEST: To centralize and control hazardous procedures related to iodination and carcinogen dilution.
2. FUNDING: HEW Grant (1 C06 CA 28136-01)  
Central Administration matching funds
3. SCOPE OF PROJECT: Construct and equip two small limited access laboratories and one technicians's office, complete with fume hoods and isolated air handling

4. COST ESTIMATE:

Construction cost: \$355,334  
Total Project Cost \$465,920

Cost estimate based on grant application, not revised to date.

5. TIME SCHEDULE:

	(Dates)
Complete working drawings	April 23, 1981
Advertise for bids	May 15, 1981
Receive bids	June 9, 1981
Award contracts	June 30, 1981
Begin construction	July 1, 1981
Complete construction	May 1, 1982

6. ARCHITECT:

(if in-house: put Office of Physical Planning)

Roger Johnson/James Forberg Associates  
1409 Williw Street  
Minneapolis, Minnesota 55403

I.	FUNDS AVAILABLE . . . . .		<u>\$ 465,920</u>
II.	LAND ACQUISITION. . . . .		<u>N/A</u>
III.	BUILDING COST . . . . .		<u>355,334</u>
	A. General . . . . .	<u>141,835</u>	
	B. Mechanical. . . . .	<u>186,625</u>	
	C. Electrical. . . . .	<u>26,874</u>	
	D. Elevator. . . . .	<u>N/A</u>	
	E. Fixed Equipment . . . . .	<u>included in A</u>	
IV.	NON BUILDING COST . . . . .		<u>110,586</u>
	A. Sitework. . . . .	<u>700</u>	
	1. Landscaping . . . . .	<u>N/A</u>	
	2. Utilities . . . . .	<u>700</u>	
	B. Furnishings and Equipment . . . . .	<u>18,200</u>	
	C. Consultant's Fees . . . . .	<u>53,300</u>	
	D. Miscellaneous . . . . .	<u>38,386</u>	
	1. Contingencies . . . . .	<u>12,450</u>	
	2. Construction Supervision. . . . .	<u>7,107</u>	
	3. Soil Borings. . . . .	<u>N/A</u>	
	4. Material and Performance Testing. . . . .	<u>2,500</u>	
	5. University Engineering Services . . . . .	<u>3,550</u>	
	6. Building Activation . . . . .	<u>1,425</u>	
	7. Sewer Availability Charge . . . . .	<u>1,425</u>	
	8. Building Permit . . . . .	<u>711</u>	
	9. Incidental. & H.S.P.O. . . . .	<u>8,507</u>	
	10. Builders Risk Insurance . . . . .	<u>711</u>	
V.	TOTAL PROJECT COST. . . . .		<u>\$465,920</u>

The items listed on the reverse side under IV, Non-Building Cost, may typically be defined as follows:

- IV. A. 1. Landscaping: All exterior development such as finish grading, sod, trees, sidewalks, driveways, retaining walls, etc.
- IV. A. 2. Utilities: Water, gas, steam (including tunnels), telephone, electricity, storm and sanitary sewers, etc.
- IV. B. Furnishings and Equipment: Furnishings, sun control, graphics, custodial equipment, A-V and other technical equipment, etc.
- IV. C. Consultant's Fees: Fees for all consultants hired by the University, e.g., the architect, acoustical engineer, food service consultant, landscape architect, etc. as applicable.
- IV. D. 1. Contingencies: Funds set aside to remedy unforeseen problems which crop up during construction.
- IV. D. 2. Construction Supervision: Salary for the University's construction superintendent and other costs related thereto.
- IV. D. 3. Soil Borings: Cost of taking soil borings and filing report on same.
- IV. D. 4. Material and Performance testing: Cost to perform various standard tests on building components, e.g., concrete, welding, etc.
- IV. D. 5. University Engineering Services: Personnel costs related to various services provided by the Engineering and Construction staff.
- IV. D. 6. Building Activation: Testing and balancing air handling system, connection to Delta 2000, fire extinguishers, towel cabinets, keys preparation of 1/16" = 1' floor plans, moving.
- IV. D. 7. Sewer Availability Charge: Essentially a tax on new (additional) plumbing fixtures, paid to the Metro Waste Control Commission.
- IV. D. 8. Building Permit: 0.2% of building cost, levied by the University and payable to the State of Minnesota.
- IV. D. 9. Incidental: Printing, travel, telephone, etc.



DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE  
PUBLIC HEALTH SERVICE  
NATIONAL INSTITUTES OF HEALTH  
BETHESDA, MARYLAND 20014  
20205

NATIONAL CANCER INSTITUTE

March 13, 1979

Dr. Roger DeRoos  
W136 Boyten Health Services  
University of Minnesota  
Minneapolis, Minnesota 55455

Dear Dr. DeRoos:

Enclosed is an application kit as requested on this date, relative to a construction grant. We believe the instructions are self-evident. Applications are reviewed by the National Cancer Advisory Board three times a year. The deadlines for receipt of applications are: June 1, 1979 for January 1980 Board; October 1, 1979 for May 1980 Board and February 1, 1980 for September 1980 Board.

Effective with the February 1, 1978 submission deadline, the funding requirements were revised. The new matching fund requirement based on allowable costs is fifty per cent Federal funds and fifty per cent Grantee non-Federal funds.

I wish to emphasize that construction funds are to be used for the development of new space for cancer research. Therefore, justification for your request must be based on either an ongoing cancer research program which needs additional space, or on a proposed new research program which will require space to develop. In both situations a review and evaluation will be made by a peer scientist review group.

It is strongly urged, that whether you are considering space to enlarge an ongoing program or space to initiate a new program, you discuss your space needs with us before you file an application. Please do not hesitate to call (301) 496-7141 or write.

Sincerely yours,

Donald G. Fox, Ph.D.

Chief

Research Facilities Branch

Division of Cancer Research Resources  
and Centers

Enclosure



UNIVERSITY OF MINNESOTA  
TWIN CITIES

~~UNIVERSITY OF MINNESOTA~~ Physical Plant Operations  
Design Office  
62 Folwell Hall  
9 Pleasant Street S.E.  
Minneapolis, Minnesota 55455

(612) 373-2048

*Bonnie - for your info  
Jerry has obtained  
estimate.*

March 28, 1979

TO: Roger DeRoos  
FROM: Caron E. Carlberg  
RE: Proposed Radioiodine Labeling Laboratory  
Preliminary Cost Estimate #78-347  
Project No. 000-78-0701

The preliminary cost estimate for subject project was directed this date to Mr. Ralph Wollan. It was in the amount of \$140,000.00 including \$18,200.00 for equipment to be purchased by the user department. This left \$121,800.00 for general, mechanical and electrical construction work which included necessary architectural and engineering services required to complete the project.

In order for our Engineering and Construction Division (Physical Plant Operations Department) to prepare the necessary architectural and engineering drawings and specifications required for bidding by private contractors, we must have a type 08 authorization to fund our engineering effort.

Inasmuch as this appears to be a very meticulous project, it is conceivable that engineering costs could amount to ten or twelve percent of the cost of the project; in other words, ten thousand dollars or more.

If this project is to go ahead, I recommend that a type 08 authorization in the amount of \$5,000.00 be processed through this office at an early date to assure that it gains a favorable position in our production schedule. That authorization should include a statement that "additional funds will be provided as required" and should refer to the above project and cost estimate numbers.

After the authorization has cleared the Business Office, we will assign a job captain to the project along with a mechanical and electrical engineer. A pre-engineering meeting will be set up with our engineering team and representatives from the using department which will get the project rolling.

Please contact me on 3-2048 if you need further clarification with respect to the above.

CEC/sj

cc: Paul Kopietz

## CHEMICAL EFFECTS OF IONIZING RADIATIONS ON AQUEOUS INORGANIC SOLUTIONS<sup>1</sup>

EDWIN J. HART

Argonne National Laboratory, Lemont, Illinois

RADIATION chemistry is a rapidly expanding branch of chemistry. This growth is due in part to the post-war availability and development of powerful radiation sources and in part to its many applications to problems in chemistry, biology, and pile technology. The present paper deals specifically with the chemical changes induced in aqueous solutions under irradiation by  $\alpha$ -rays,  $\beta$ -rays, X-rays, and  $\gamma$ -rays. The mechanism of free radical formation, the principles of chemical dosimetry, the determination of primary yields of molecular products and free radicals, and the kinetics of some chemical reactions in aqueous solutions are discussed.

The broad aspects of the interaction of ionizing radiations with matter have been treated previously in THIS JOURNAL by Burton's "An Introduction to Radiation Chemistry" (1). Early work using  $\alpha$ -particles and electrons is covered by Lind (2). Recent detailed reviews on this subject may also be found in Volumes 1-7 of the *Annual Reviews of Physical Chemistry* (3). Review papers by Lefort (4) on chemical effects in aqueous solutions, and by Miller (5) on dosimetry are also recommended for additional study.

### PRIMARY PROCESSES

The ionization and dissociation processes which occur when electromagnetic radiation or charged particles interact with water have been described by Lea (6), Dainton (7), Allen (8), and Magee and Burton (9). X-rays and  $\gamma$ -rays lead to the ejection of photo- and/or Compton recoil electrons capable of producing multiple ionizations of the water. The average energy loss per cm. of track is given by Bethe and Ashkin (10) for electrons at relativistic velocities:

$$\left(\frac{-dE}{dx}\right)_{\text{electrons}} = \frac{2\pi Nc^2Z}{mv^2} \left\{ \log_2 \frac{mv^2E}{2I^2(1-\beta^2)} - \frac{1}{2} \left[ 2(1-\beta^2)^{1/2} - 1 + \beta^2 \log_2 2 + 1 - \beta^2 + \frac{1}{2}(1 - (1-\beta^2)^{1/2})^2 \right] \right\}$$

where

- $E$  = energy of the incident particle
- $m$  = mass of the electron
- $c$  = charge on the electron
- $v$  = velocity of the particle
- $c$  = velocity of light
- $\beta$  =  $v/c$
- $N$  = number of atoms/cc. of matter irradiated
- $Z$  = nuclear charge
- $I$  = average excitation potential of the atom

For protons,  $\alpha$ -rays, and other heavy particles, the rate of energy loss is much greater than for electrons.

The energy loss equation for heavy particles, usually employed at nonrelativistic energies in radiation chemistry studies, is:

$$\left(\frac{-dE}{dx}\right)_{\text{ions}} = \frac{4\pi c^2 z^2}{mv^2} NZ \log_2 \frac{2mv^2}{I}$$

where the definitions of symbols are identical to those used for electrons and  $z$  = charge on the particle. Since the velocity of heavy particles for a given energy is much less than that of electrons of this energy, the principal effect of heavy ions is to increase the energy loss parameter. Numerical values of these parameters taken from Lea (6) are given in Table 1 for electrons, protons, and  $\alpha$ -particles.

TABLE I  
 Energy Dissipation by Ionizing Particles (6)

Particle	Energy (Mev.)	ev./Å.
Electron	0.0001	3.32
"	0.001	1.23
"	0.010	0.23
"	0.050	0.067
"	0.10	0.0417
"	0.48	0.0207
Proton	1.0	2.77
"	5.0	0.816
"	10.0	0.467
$\alpha$ -Particle	1.0	26.4
"	5.0	9.38
"	10.0	5.57

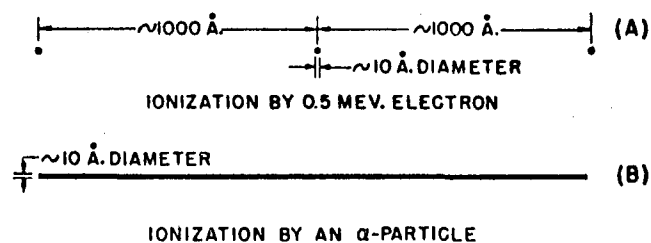


Figure 1. Relative Track Densities of Electrons and  $\alpha$ -Particles

The distance between successive ionizations in the path of a primary recoil electron produced by  $\text{Co}^{60}$   $\gamma$ -rays is of the order of 1000 Å. Consequently, a rather sparsely ionized track is obtained. At each point of ionization, secondary electrons promote further ionization of the water (reaction 2) and form a group of ion pairs. These are represented by A in Figure 1, and are postulated to have an original diameter of the order of 10 to 20 Å. (11, 12).  $\alpha$ -Particles form an essentially continuous track of ionization (B of Figure 1) resulting from overlapping spheres of

<sup>1</sup> Based on work performed under the auspices of the U. S. Atomic Energy Commission.

## Carcinogen and Highly Toxic Chemical Facility

### Use of the Facility

In most cases, carcinogens and highly toxic chemicals used in this facility will be purchased in pure or at least highly concentrated form. They will be packaged in sealed ampoules, small vials, or pressurized cylinders. In almost all cases, the most hazardous part of the laboratory procedure is opening the primary container, which can result in formation of an aerosol of pure carcinogen or highly toxic material. This operation must be performed in a hood to provide protection for the worker. The hood must be charcoal<sup>and hepa</sup> filtered to prevent escape of the aerosol to the environment.

The next step in a laboratory procedure (after opening the primary container) will involve measurement of a portion or all of the sample. This will be done either by weighing or volumetric measuring; therefore a balance dedicated to high hazard work will be kept in the hood and disposable syringers or pipettes will be used as needed. Transfer of the material from its primary container to a weighing or dilution vessel can also result in aerosol formation or in spillage. The floor of the laboratory hood must be protected with a disposable, absorbant cover to aid in cleanup if a spill occurs.

Dilution of the material will be achieved by adding a small, measured amount of the pure compound to an appropriate matrix, which could be water, an organic solvent, or even a solid such as animal feed. Mixing of pure material and diluent is another step which can result in aerosol formation, particularly if the matrix is dry, as with animal feed.

All of the above operations, which may cause aerosol formation or result in spillage, must be performed in the hood.

After the carcinogen or highly toxic material has been appropriately diluted, the diluted material may be removed from the hood. Any unused pure material will either be stored in the facility or prepared for disposal from the facility. Pure material in opened containers shall not be returned to individual laboratories.

Any waste generated during the dilution procedure (gloves, paper towels, disposable pipets, excess chemical, etc.) will be placed in a disposal container within the hood and prepared for disposal directly from the laboratory.

(A procedure for preparing cornmeal with aflatoxin B<sub>1</sub> is appended.)

Use of this facility will replace similar procedures now being carried out in a number of laboratories on campus. In the present situation, no laboratory hoods are appropriately filtered for volatile carcinogen use. Also, adequate handling of contaminated waste is difficult to achieve when the waste is generated at a variety of locations on campus and is handled by several different custodial personnel. Supervision of technicians performing the laboratory procedures and evaluation of their techniques has been very difficult for DEHS, as is keeping an adequate inventory of materials on campus. All of these problems will be considerably alleviated in a centralized carcinogen and highly toxic chemical facility.



## Description of the Facility

The radioiodine labeling laboratory is to be the facility where all radioiodine labeling of chemicals and proteins is done on the Minneapolis campus of the University of Minnesota. Iodine-125 is both a highly desirable label because of its versatility, easy preparation and easy analysis, and a potentially hazardous one because of its toxicity and volatility. This centrally located laboratory will allow radioiodine labeling to be conducted without jeopardizing the health of technicians or the safety of the environment.

The 12' by 28' laboratory will be equipped so that two labeling procedures may be conducted simultaneously. Two radioisotope fume hoods will be installed midway along the long inside (south) wall of the lab, thus effectively separating the room into two work stations. (See sketch). A work bench will extend the length of the opposite wall with common equipment, such as a bench-top centrifuge and source calibrator, stored midway along the counter, accessible to both halves of the laboratory. Two sinks will also be installed in the work bench.

The radioiodine hoods will conform to specifications for hoods for radioisotope use, including an exhaust duct with a radioisotope filter enclosure for a charcoal radioiodine filter and prefilter, non-porous surfaces, proper drainage, and adequate face velocity (100 linear feet per minute with the filter loaded). The fume hoods will be positioned back to back and will share a common exhaust duct. Instruments for monitoring the effluent air concentrations of radioiodine will be installed in the duct. Personnel breathing zone air will also be monitored. The doors to the laboratory will be as close as possible to the corners of the room to minimize air current interference with fume hood exhaust as people enter or leave the laboratory.

Storage cabinets and drawers will be provided under the work bench and along the west wall. These drawers and cabinets must lock as they will be used by 15 - 20 individual researchers storing personal equipment and materials used in labeling. An adequately

shielded, large capacity laboratory refrigerator is to be installed along the wall for storage of temperature sensitive substances.

The laboratory will be furnished and decorated with materials which allow easy decontamination. The overhead lights will be recessed into the ceiling, walls will be covered with nonporous paint, work surfaces and fume hoods will be stainless steel and the floor will be covered with vinyl asbestos.

In order to protect personnel in the labeling lab, the radiation source used for instrument calibration should be stored in a shielded facility outside of the lab. To accomplish this, a small cubicle will be built adjacent to the east wall of the laboratory opposite the work bench. The wall will have a shielded portal which, when opened, will allow a radiation beam for instrument calibration to be directed the length of and in front of the work bench. In addition to being used to calibrate the instruments for measuring radiation in this special facility, the calibration source will allow the researchers to accurately calibrate the instruments they use to monitor contamination in their own research labs. The instrument calibration source facility, a four foot square room, will be constructed with one foot thick concrete walls to prevent radiation from escaping.

The floor of Boynton Health Service where this radiation protection facility is to be built is currently used almost entirely for storage. Consequently, there are no toilet facilities. Ladies' and men's restrooms are, therefore, to be installed at an accessible location on the same floor.

#### Use of the Facility

The radioiodine labeling laboratory will allow all radioiodine labeling on the Minneapolis campus of the University of Minnesota to be done with adequate environmental controls under the supervision of the University Radiation Protection Program staff.

Currently, radioiodine labeling is done in researcher's own laboratories, often in fume hoods with inadequate filtration and ventilation. Although the Radiation Protection Officer monitors every known labeling procedure, the large number of approved  $^{125}\text{I}$  users and the spread of their locations on campus prevents complete coverage by the Radiation Protection Officer in supervising this critical procedure.

With a central labeling laboratory, the Radiation Protection program will schedule and supervise all labeling procedures. Researchers will come to the central labeling laboratory and receive the  $^{125}\text{I}$  and other needed materials from the radiation protection technician in attendance. The labeling will be carried out by the researcher or his/her staff in the radioisotope fume hood while the breathing zone air and the effluent air is sampled and measured for contamination. Upon completion of the labeling procedure, while still in the fume hood, radioiodine contaminated materials will be packaged, sealed and then removed for disposal. The relatively safe non-volatile labeled fraction of the material may then be carried with little exposure hazard back to the researcher's lab.

The Radiation Protection Program will ensure safety in these labeling procedures not only by supervising the labeling itself, but also by taking responsibility for storage and control of unused  $^{125}\text{I}$  and other stock materials. The laboratory is equipped with sufficient cabinet and refrigerator storage space to make these controls feasible.

One of the benefits of having one central facility for radioiodine labeling is the ease of measuring effluent and breathing zone air concentrations of radiation. The effectiveness of the monitoring depends upon accurate, reliable instrumentation. For this reason, an instrument calibration radiation source will

be stored in a small facility adjoining and accessible to the labeling lab. The instruments used on the premises will be calibrated regularly with the calibration source, and individual researchers will also be able to calibrate the instruments they use to monitor leakage and contamination in their own labs. The instrument calibration facility will provide crucial support for radiation protection in these procedures.

The central radioiodine labeling laboratory offers administrative convenience over the present system to the approved user's staff:

- A radiation protection technician will be available to the central labeling lab to supervise and instruct as needed, whenever radioiodine labeling is performed. He or she will monitor the affected air.
- Locking storage space will be provided approved users who perform iodination procedures. Transport of instruments or equipment will not be necessary. The radioiodine will be provided at the central lab when labeling is performed.
- Scheduling will be simplified. The need for advanced planning (other than calling ahead to ensure availability of at least one hood) and coordinating schedules of laboratory technicians with the radiation protection technician will be minimal.
- Capital expenditures for special ventilation, fume hood and/or cold room modifications will not longer be needed to control the hazards of volatile radioiodine in an individual laboratory.
- Storage of unused Iodine-125 and disposal of radioiodine contaminated waste will not longer be the responsibility of individual researchers.
  
- An autogamma counter will be available in the radioiodine labeling lab which will eliminate the need to coordinate use of counters by several users in their individual labs.

laboratory eliminate the spill and exposure hazard of transport when distributing the material to laboratories around campus.

- Breathing zone, fume hood effluent, and cold room air will be consistently monitored. Exceptional or hazardous conditions can be identified and corrected immediately.
- Improved filtration of effluent air will protect the general public.
- Radiation monitoring instruments may be calibrated in the central lab using the calibration source. Contamination surveys in individual laboratories as well as monitoring of the central facility will thus be accurate and reliable.
- The laboratory will be partly decontaminated in case of a spill.
- Radioactive waste will be packaged in the fume hood, stored under the fume hood and disposed under the supervision of Radiation Protection personnel. This contains and controls another source of potential contamination and employee or public exposure.
- The investigators will be monitored before leaving the radioiodine labeling laboratory to prevent radioactive contaminants from being carried out of the laboratory into areas where the general public or other personnel might be exposed.
- The dose rates from the labeled proteins will be determined before leaving the labeling lab, so that adequate shielding and packaging may be provided for packages with excessive radiation levels.

## PROPOSED RADIOIODINE LABELING LABORATORY

The radioiodine labeling laboratory is to be the facility where all radioiodine labeling of chemicals and proteins is done on the Minneapolis campus of the University of Minnesota. Iodine-125 is both a highly desirable label because of its sensitivity, versatility, easy preparation and analysis, and a potentially hazardous one because of its toxicity and volatility. This centrally located laboratory will allow radioiodine labeling to be conducted without jeopardizing the health of technicians or the safety of the environment.

### Description of the Facility

The 12' by 28' laboratory will be located in the Boynton Health Service building and equipped so that two labeling procedures may be conducted simultaneously. Two radioisotope fume hoods will be installed midway along the one wall of the laboratory, thus effectively separating the room into two work stations. A work bench will extend the length of the opposite wall with common equipment, such as a bench-top centrifuge and source calibrator, stored midway along the counter, accessible to both halves of the laboratory. Two sinks will also be installed in the work bench.

The radioiodine hoods will conform to specifications for hoods for radioisotope use, including an exhaust duct with a radioisotope filter enclosure for a charcoal radioiodine filter and prefilter. The fume hoods will be positioned back to back and will share a common exhaust duct. Instruments for monitoring the effluent air concentrations of radioiodine will be installed in the duct. Personnel breathing zone air will also be monitored.

Locking storage cabinets and drawers will be provided for use by 15 - 20 individual researchers storing their labeling equipment and materials. An adequately shielded, large capacity laboratory refrigerator is to be installed along the wall for storage of temperature sensitive substances. A cold room with a work bench and vertical columns for fractionation procedures will also be provided.

The cold room air will be monitored and work surfaces routinely surveyed. Construction will be such that the room can be decontaminated as needed.

Because the effectiveness of monitoring depends upon accurate, reliable instrumentation, an instrument calibration radiation source will be stored in a shielded cubicle, adjoining and accessible to the labeling laboratory. The instruments used on the premises will be calibrated regularly and individual researchers will also be able to calibrate the instruments they use to monitor leakage and contamination in their own laboratories.

#### Use of the Facility

The radioiodine labeling laboratory will allow all radioiodine labeling on the Minneapolis campus of the University of Minnesota to be done with adequate environmental controls under the supervision of the University Radiation Protection Program staff.

A Radiation Protection Program technician will schedule and supervise all labeling procedures. Researchers will come to the central labeling laboratory and receive the previously ordered  $^{125}\text{I}$  and other needed materials from the Radiation Protection technician in attendance. The labeling will be carried out by the researcher or his/her staff in the radioisotope fume hood, while the breathing zone air and the effluent air is sampled and counted for contamination. Upon completion of the labeling procedure, while still in the fume hood, radioiodine contaminated materials will be packaged, sealed and removed for disposal. Fractionation of the labeled material will also be conducted in the fume hood, or, if necessary, in the specially designed cold room adjoining the labeling laboratory. The relatively safe, non-volatile labeled fraction may then be carried back to the researcher's laboratory with little exposure hazard.

The Radiation Protection Program will take responsibility for storage and control of unused  $^{125}\text{I}$ ,  $^{131}\text{I}$  and other stock materials. The laboratory is equipped with sufficient cabinet and refrigerator storage space to make these controls feasible.



### Radiation Protection Advantages of the Facility

The central radioiodine labeling laboratory reduces the risk of employee and public exposure to ionizing radiation in several important ways:

1. Charcoal filtration of laboratory effluent air will ensure protection of the general public.
2. An adequately ventilated, spill-protective fume hood will be used for all labeling procedures. Frequent testing to ensure adequate face velocity and filter integrity will be provided.
3. Breathing zone, fume hood effluent, and cold room air will be consistently monitored and controlled to ensure radiation protection.
4. The laboratory will be designed to be easily decontaminated in case of a spill.
5. Investigators will always be monitored before leaving the radioiodine labeling laboratory to prevent radioactive contaminants from being carried out of the laboratory into areas where the general public or other personnel might be exposed.
6. Fractionation can be conducted in the controlled-access cold room when temperature sensitive materials are used. This central cold room will eliminate the need to use radioiodine in other cold rooms throughout Health Sciences.
7. Radioactive waste will be packaged in the fume hood, stored under the fume hood and disposed of under the supervision of Radiation Protection Program personnel. This contains and controls another source of potential contamination.
8. Radiation monitoring instruments will be calibrated in the central laboratory using the calibration source. Contamination surveys in the individual laboratories, as well as monitoring of the central facility, will thus be done with routinely calibrated instruments available to individual users.
9. Dose rates from the labeled proteins will be determined before leaving the labeling laboratory, so that adequate shielding and packaging may be provided for all packages.

### Administrative Advantages of the Facility

1. A radiation protection technician will be available to the central labeling laboratory to supervise and instruct as needed,

whenever radioiodine labeling is performed. He or she will also collected the required air samples.

2. Scheduling will be simplified. The need to coordinate schedules of laboratory technicians with the Radiation Protection staff will be minimal.
3. Locking storage space will be provided for approved radioisotope users who perform iodination procedures. Transport of instruments or equipment will not be necessary, and previously ordered radioiodine will be provided for each labeling procedure.
4. Storage of unused <sup>125</sup>I and disposal of radioactive waste will no longer be the responsibility of individual researchers.
5. Capital expenditures for ventilation, fume hood and/or cold room modifications will not be needed to control the hazards of volatile radioiodine in individual laboratories.



UNIVERSITY OF MINNESOTA  
TWIN CITIES

Health Sciences Planning Office  
Physical Planning  
4103 Powell Hall, Box 75  
500 Essex Street S.E.  
Minneapolis, Minnesota 55455  
(612) 373-8981

September 7, 1979

TO: George Michealson  
Environmental Health and Safety

FROM: Paul J. Maupin *Paul*  
Health Sciences Planning Coordinator

SUBJECT: Grant Application for Proposed Radiation Protection Facility

Enclosed please find a "draft" of the grant application for the proposed radiation protection facility to house the Radioiodine Labeling and Carcinogen and Highly Toxic Chemical Laboratories.

We have prepared a draft letter to NCI, a research objective paper, the HEW Form 537 completed with the estimated project costs, justification paper for the project, included a listing of the ongoing research projects with support letters for the Radioiodine Lab, a detailed floor plan of the project and a project description. This fulfills our obligation as per our original agreement with Roger DeRoos. Our design is based on the current state of the art.

It is vital to the grant that one of the leading researchers using the facility be identified as responsible for the activity. This person must be identified somewhere in the written composition of the grant. In addition, we have not received any listing of the research being done to support the Carcinogen Lab or any support letters for that facility. Your department will also have to provide the percentage of eligibility figures based upon your knowledge of the users of the facility.

We have been assured by NCI that the matching dollars for this grant presents no problem.

Please review the enclosed information for any changes that you feel need to be made. The final composition, editing and submission of the grant is the responsibility of Environmental Health and Safety. The grant application is to be in Washington, D.C. no later than October 1, 1979.

cc: Cheri Perlmutter  
Clint Hewitt  
Chet Gryger - 3-2066

PJM:jm



DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE  
PUBLIC HEALTH SERVICE  
NATIONAL INSTITUTES OF HEALTH  
BETHESDA, MARYLAND 20014

NATIONAL CANCER INSTITUTE

March 13, 1979

Dr. Roger DeRoos  
Wi36 Boyten Health Services  
University of Minnesota  
Minneapolis, Minnesota 55455

Dear Dr. DeRoos:

Enclosed is an application kit as requested on this date, relative to a construction grant. We believe the instructions are self-evident. Applications are reviewed by the National Cancer Advisory Board three times a year. The deadlines for receipt of applications are: June 1, 1979 for January 1980 Board; October 1, 1979 for May 1980 Board and February 1, 1980 for September 1980 Board.

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I wish to emphasize that construction funds are to be used for the development of new space for cancer research. Therefore, justification for your request must be based on either an ongoing cancer research program which needs additional space, or on a proposed new research program which will require space to develop. In both situations a review and evaluation will be made by a peer scientist review group.

It is strongly urged, that whether you are considering space to enlarge an ongoing program or space to initiate a new program, you discuss your space needs with us before you file an application. Please do not hesitate to call (301) 496-7141 or write.

Sincerely yours,

Donald G. Fox, Ph.D.  
Chief  
Research Facilities Branch  
Division of Cancer Research Resources  
and Centers

Enclosure

DRAFT

September 10, 1979

National Institutes of Health  
Bethesda, Maryland 20014

Re: NCI Protection Facility

Gentlemen:

Please find enclosed application for matching funds to be used to renovate existing facilities to meet NIH guidelines for a NCI Protection Facility.

The area to be renovated is currently being used as a warehouse area. The space is ideal due to its central location and easy conversion to a fully self-contained space for the radiation protection facility.

Documentation is enclosed which includes approval by the University of Minnesota Division of Environmental Health and Safety and guaranteed financial support from the University of Minnesota Central Administration.

This application includes a number of support letters by investigators stating their support and need for the facility. \_\_\_\_\_ will be the coordinator of the program.

To my knowledge there is no existing protection facility either in the Health Sciences at Minnesota or on the Twin Cities campus. We have assured Central Administration at the University of Minnesota that the unit will be made available to all the investigators at the University requiring use of the laboratories.

I believe the enclosed application meets the intent of the NIH, and we are pleased to submit the application for your consideration.

very truly yours,

\_\_\_\_\_  
\_\_\_\_\_

## RESEARCH OBJECTIVES

### NCI PROTECTION FACILITY (Radioiodine Labeling and Carcinogen and Highly Toxic Chemical Facility)

We are requesting matching funds for a National Cancer Institute Protection Facility to be developed in the Boyton Health Services building as part of the Radiation Protection Services at the University of Minnesota to facilitate studies requiring Radioiodine Labeling and handling of Carcinogen and other Highly toxic chemicals. This facility will be the first of its kind at the University of Minnesota and will be available to all investigators conducting studies requiring these procedures. In this application, we describe the proposed renovations (remodeling) required to alter an existing warehouse space into one that can be employed for a fully self-contained Radioiodine Labeling Lab and Carcinogen and Highly Toxic Chemical Lab. These procedures are currently being done in individual researchers' labs often with inadequate filtration and ventilation. The vast majority of the studies being done reflect an extension of ongoing funded research projects at the University. This facility should provide an additional dimension to the continuing research programs of the investigators involved.

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE  
WASHINGTON, D.C.

LEAVE BLANK

APPLICATION FOR FEDERAL ASSISTANCE  
FOR CONSTRUCTION OF HEALTH  
AND EDUCATIONAL FACILITIES

STATE

DHEW

Date Rec'd.

Project Number

GENERAL INFORMATION

1. LEGAL NAME OF APPLICANT

University of Minnesota  
Dept. of Environmental Health &  
Safety

2. ADDRESS OF APPLICANT (street, city, country,  
congressional district, state, zip code, and  
telephone number) Telephone 612-

University of Minnesota  
Minneapolis, Minnesota 55455  
Congressional Dist. #5

3. APPLICANT APPLIES FOR FEDERAL FUNDS FOR CONSTRUCTION UNDER THE FOLLOWING PROGRAM(S):

(A) CODE NO.      SHORT TITLE  
(See Program Instructions)

(1) Radiation Protection Facility

(2) \_\_\_\_\_

(3) \_\_\_\_\_

(4) \_\_\_\_\_

(B) GRANT AMOUNT      OTHER (IDENTIFY)

\$ 232.959      \$ \_\_\_\_\_

\$ \_\_\_\_\_      \$ \_\_\_\_\_

\$ \_\_\_\_\_      \$ \_\_\_\_\_

\$ \_\_\_\_\_      \$ \_\_\_\_\_

4. PROPOSED FACILITY AND PROJECT

(A) Name and Type  
NIC Protection Facility  
(Radioiodine Labeling & Carcinogen  
and Highly Toxic Chemical Lab)  
University of Minnesota

(B) Address (street, city, county, congressional  
district, state, zip code)

Minneapolis, Hennepin, Minnesota  
55455

Congressional District # 5

(C) Type of construction (Check all that apply)

- New facility
- Expansion of existing facility
- Remodeling
- Acquisition
- Equipment only
- Other (specify)

(D) Type of Ownership

Public       Other Nonprofit

(E) Type of operational control in other than the owner

Public       Other Nonprofit

5. APPLICANT'S REPRESENTATIVE (Name, title,  
address, telephone number)

6. PROJECT ARCHITECT (Name, address, telephone  
number)

No architectural firm has been assigned  
at this time

PROGRAM INFORMATION

- 7. APPLICANT ELIGIBILITY AND NEED FOR FACILITY - refer to Justification attached  
(See program instructions for detailed requirements for this item)
- 8. OCCUPANCY DATA - see schedule attached  
(See program instructions for detailed requirements for this item)
- 9. DESCRIPTION OF PROGRAMS TO BE CONDUCTED IN FACILITY - refer to attached detail  
(See program instructions for detailed requirements for this item)
- 10. DESCRIPTION OF FACILITY - detailed description and floor plan attached  
(See program instructions for detailed requirements for this item)

FACILITY INFORMATION

11. APPLICANT'S FINANCIAL RESOURCES APPLICABLE TO THIS FACILITY

A. Cash and negotiable and non-negotiable securities . . . . .		\$ ---
B. Pledges: Face value: \$ _____		
Discounted Value . . . . .		\$ ---
C. Contingent gifts and bequests . . . . .		\$ ----
D. Bonds authorized but not yet sold . . . . .		\$ ----
E. Mortgage . . . . .		\$ _____
F. Appropriations:		
	Available (specify date)	Anticipated (specify date)
State	\$ _____	\$ _____
Local	\$ _____	\$ _____
TOTAL . . . . .		\$ ----
G. Other (Specify) .	University of Minnesota Central Administration	\$ 232,961.00
	Immediately available upon notice of matching funds	232,961.00
H. TOTAL . . . . .		\$ 232,961.00

12. OTHER FEDERAL ASSISTANCE FOR THIS PROPOSED FACILITY

PROGRAM	FED. AGENCY	STATUS	AMOUNT	PROJECT NUMBER
A.				
B.				
C.				



13. TOTAL DEVELOPMENT COST

(Sum of items 3, 11, and 12) \$ 465,920.00

14. SITE AND IMPROVEMENTS

A. Title or Other Interest in Site is or will be Vested in:

\_\_\_\_\_ Applicant \_\_\_\_\_ Agency or institution which is to operate the facility

\_\_\_\_\_ Other (*specify*)

B. Indicate whether applicant/operator has:

\_\_\_\_\_ Fee simple title \_\_\_\_\_ Leasehold interest \_\_\_\_\_ Other (*specify*)

C. If applicant/operator has leasehold interest, give following information:

(1) Length of lease or other estate interest: \_\_\_\_\_

(2) Number of years to run: \_\_\_\_\_

(3) Is lease renewable? \_\_\_ Yes \_\_\_ No

(4) Current appraised value of land: \$ \_\_\_\_\_

(5) Annual rental: \$ \_\_\_\_\_

D. Attach an opinion from acceptable title counsel describing the interest applicant operator has in the site and certifying that the estate or interest is legal and valid.

E. Attach site survey, soil investigation reports and where applicable copies of land appraisals.

F. Where applicable attach certification from architect on the feasibility of improving existing structures.

G. Attach plot plan.

15. CONSTRUCTION SCHEDULE ESTIMATES:

A. Target dates for completion of drawings:

Schematics \_\_\_\_\_ Preliminary \_\_\_\_\_ Final \_\_\_\_\_

B. Target dates for: Bid advertising \_\_\_\_\_; Contract award \_\_\_\_\_;

Construction completed \_\_\_\_\_; Occupancy \_\_\_\_\_;

16. BUDGET INFORMATION  
ESTIMATED FACILITY BUDGET

A. Building identification: \_\_\_\_\_  
(if more than one structure)

REMODELING

B. Budget Line	C. New construction	D. Other (identify)	E. Total
1. Building work			
a. General construction	\$	\$ 141,835	\$ 141,835
b. Plumbing		47,776	47,776
c. Heating, air cond., ventilation		138,849	138,849
d. Electrical work		26,874	26,874
e. Elevators			
f. Other building work (attach list and itemization of costs)			
g. TOTAL FOR BUILDING WORK			355,334
2. Site work			
a. Site preparation			
b. Site development and parking facilities			
c. Utility connecting lines (SAC Charge)		1,425	1,425
d. Special use items Test & Balance		2,500	2,500
e. TOTAL FOR SITE WORK			3,925

ESTIMATED FACILITY BUDGET (Cont'd.)

REMODELING

B. Budget Line	C. New construction	D. Other ( <i>identify</i> )	E. Total
3. Off-site work			
a. Connecting lines to central utility plant	\$	\$	\$
b. Other items ( <i>list and itemize costs</i> )			
c. TOTAL FOR OFF-SITE WORK			
4. Central utility plant ( <i>prorata share for this structure</i> )		700.00	700
5. TOTAL-CONSTRUCTION COSTS			700
6. Built-in equipment			
7. Architectural and engineering costs			
a. Architect's basic fee		53,300	53,300
b. Supervision and inspection ( <i>project representative</i> )		17,764	17,764
c. Surveys, tests, and borings			
d. Other items ( <i>list and itemize costs</i> ) Bldg. Activation \$1,425, Permits \$711, Ins. \$711, Misc. Exp. \$1,400		4,247	4,247
e. TOTAL-ARCHITECTURAL AND ENGINEERING COST			75,311

ESTIMATED FACILITY BUDGET (Cont'd.)

REMODELING

B. Budget Line	C. New construction	D. Other ( <i>identify</i> )	E. Total
8. Movable equipment	\$	\$ 18,200	\$ 18,200
9. TOTAL COST FOR CONSTRUCTION FIXED EQUIP. A/E FEES AND MOVABLE EQUIPMENT			
10. Contingency		12,450	12,450
11. Purchase of Land			
12. Purchase of Buildings			
13. Other ( <i>list and itemize</i> )			
14. Subtotal-Lines 9 to 13 incl.		12,450	12,450
15. Works of Art			
16. TOTAL DEVELOPMENT COST	\$	\$	\$ 465,920

17. SPACE ALLOCATION BY GRANT PROGRAM

A. Building identification (if more than one structure) \_\_\_\_\_

B. Gross area in facility 1493 S.F.      C. Net area in facility 1262 S.F.

Alternate I	GRANT PROGRAMS				5) APPLICANT SPACE
	1) PROGRAM CODE	2) PROGRAM CODE	3) PROGRAM CODE	4) PROGRAM CODE	
D. Net area by program(s)	1262 SF	SF	SF	SF	SF
E. Cost allocation ratio by programs (D/C X 100—to two decimals)	%	%	%	%	%
Alternate II					
F. Gross area by program(s)	SF	SF	SF	SF	SF
G. Cost allocation ratio by programs (F/B X 100—to two decimals)	%	%	%	%	%

18. COSTS ELIGIBLE FOR FEDERAL PARTICIPATION  
(BY PROGRAMS)

A. Budget line	B. Total cost (col. E, item 16)	C. Total eligible cost	D. Amounts eligible for Federal participation (for each grant program)			
			1) Program code ____, ____ % from item 17E ___ or 17G ___	2) Program code ____, ____ % from item 17E ___ or 17G ___	3) Program code ____, ____ % from item 17E ___ or 17G ___	4) Program code ____, ____ % from item 17E ___ or 17G ___
1g. Building work	\$ 355,344	\$	\$	\$	\$	\$
2e. Site work	3,925					
3c. Off-site work						
4. Central utility plant (temporary Utilites)	700					
6. Fixed equipment						
7e. A/E costs	53,300					
8. Movable equipment	18,200					
10. Contingency	12,450					
11. Purchase of Land						
12. Purchases of Building(s)						
13. Other Bldg, ACT, Supervision, Permits, Ins. etc.	17,764 4,247					
15. Works of Art						
16. TOTALS (1g. through 15)	\$ 465,920	\$	\$	\$	\$	\$
17. Amount of Fed. Assist Requested			\$ 232,959	\$	\$	\$
18. Fed. Share Request- Percentage			50%	%	%	%

September 6, 1979

NCI RADIATION PROTECTION FACILITY

CONSTRUCTION COSTS:

General	\$141,835
Mechanical	186,625
Electrical	<u>26,874</u>

Total Construction Cost \$355,334

NON-BUILDING COSTS:

Architects Fees @ 15%	\$ 53,300
Utilities	700
Testing & Balancing	2,500
SAC Charge	1,425.
Construction Supervision	7,107
Miscellaneous Expenses	1,400
Miscellaneous Engineering	3,550
Building Activation	1,425
Building Permits @ .20%	711
Planning Consultant fees	7,107
Contingencies	12,450
Builders Risk Ins. @ .20¢ per \$100.00 per year	<u>711</u>

Total Non-building 92,386

GROUP II EQUIPMENT 18,200

TOTAL ESTIMATED PROJECT COSTS \$465,920

## 19. ASSURANCES

The following assurances are divided into two parts. Part A assurances are required for all applicants applying for construction program support including the acquisition of facilities where applicable, from the Department of Health, Education, and Welfare. Part B assurances are ones which relate only to individual construction grant or loan programs. Signature by the applicant's representative will indicate that the institution agrees to all Part A assurances and to the Part B assurances required by the program or programs to which it is applying for support.

The applicant gives assurance that:

### Part A.

1. It possesses legal authority to apply for and receive the grant or loan, and to finance and construct the proposed facilities; that a resolution, motion or similar action has been duly adopted or passed as an official act of the applicant's governing board, authorizing the filing of the application, including all understandings and assurances contained therein, and directing and authorizing the person identified as the official representative of the applicant to act in connection with the application and to provide such additional information as may be required.
2. It will comply with the provisions of the National Environmental Policy Act, PL 91-190; Executive Order 11296, relating to flood-plain elevation and necessary controls; and Executive Order 11288 relating to the prevention, control, and abatement of water pollution.
3. Sufficient funds will be available to meet the non-Federal share of the cost of constructing the facility, and that sufficient funds will be available when construction is completed to assure effective operation and maintenance of the facility for the purposes for which constructed.
4. Approval by the HEW Secretary or his designee\* of the final working drawings and specifications will be obtained before the project is advertised or placed on the market for bidding; that it will construct the project, or cause it to be constructed, to final completion in accordance with the application and approved drawings and specifications; that it will submit to the Secretary or his designee for prior approval changes that materially alter the scope or costs of the project, use of space, or functional layout; that it will not enter into a construction contract(s) for the project or a part thereof until the conditions of the construction grant or loan programs have been met.
5. Except as otherwise provided by State/local law, all contracting for construction (including the purchase and installation of built-in equipment) shall be on a lump sum fixed-price basis, and contracts will be awarded on the basis of competitive bidding with award of the contract to the lowest re-

sponsive and responsible bidder. The provision for exceptions based on State and local law will not be invoked to give local contractors or suppliers a percentage preference over non-local contractors bidding for the same contract. Such practices are precluded by this assurance.

6. Except as otherwise provided by law, all laborers and mechanics employed by contractors and subcontractors on all construction and minor remodeling projects will be paid wages at rates not less than those prevailing as determined by the Secretary of Labor in accordance with the Davis-Bacon Act, as amended (40 U.S.C. 276a-276a-5) and 29 CFR Part 1, and shall receive overtime compensation in accordance with and subject to the provisions of the Contract Work Hours Standards Act (40 U.S.C. 327-332); that such contractors and subcontractors shall comply with the provisions of 29 CFR Part 3; and that all construction contracts and subcontracts shall incorporate the contract clauses required by 29 CFR 5.5(a) and (c). Such contracts shall also include the applicable provisions of Executive Order 11246, as amended (Nondiscrimination in Construction Contract Employment), and the applicant shall otherwise comply with the requirements of section 301 of said Executive Order. The contractor shall furnish performance and payment bonds, each in the amount of the full contract price; and provide, during the life of the contract, for adequate fire, public liability, property damage, and workmen's compensation insurance.
7. It will provide and maintain competent and adequate architectural engineering supervision and inspection at the construction site to insure that the completed work conforms with the approved drawings and specifications; that it will furnish progress reports and such other information as the Secretary or his designee may require.
8. An assurance of compliance with Title VI of the Civil Rights Act of 1964 (Form HEW 441) applying to the facility described in this application was filed or is attached to this application.
9. It will maintain grant or loan accounting records (identifiable by grant or loan number), including all records relating to the receipt and expenditure of Federal grant or loan funds and to the expenditure of the non-Federal share of the cost of a project, for three years after the completion of the project if an audit is conducted by or on behalf of the Department within that period, or in the case where no audit is performed, for five years; except that should audit questions arise with respect to the grant or loan, the records will be maintained until all such questions are resolved. Representatives of the Federal Government shall have access at all reasonable times to the grantee's records and to work whenever it is in preparation or progress, and the contractor shall provide proper facilities for such access and inspection.
10. The facility will be operated and maintained in accordance with the requirements of

\*The term Secretary or his designee shall mean Commissioner of Education with respect to Office of Education programs.



applicable Federal, State and local agencies for the maintenance and operation of such facilities.

11. The applicant will require the facility to be designed to comply with the "American Standard Specifications for Making Buildings and Facilities Accessible to, and Usable by, the Physically Handicapped," Number A117.1-1961, as modified by other standards prescribed by the Secretary of HEW or the Administrator of General Services. The applicant will be responsible for conducting inspections to insure compliance with these specifications by the contractor.
12. The applicant will cause work on the project to be commenced within a reasonable time after receipt of notification from the Secretary or his designee that funds have been awarded, and that the project will be prosecuted to completion with reasonable diligence.
13. Any Federal funds received pursuant to a grant or loan will be used solely for defraying the development cost of the proposed project.

Part B.

1. Hill-Burton, Community Mental Health Centers, and Mental Retardation Facilities.

- a. That it will conform to all the applicable requirements of the appropriate State plan and the regulations pertaining thereto.
- b. That all portions and services of the entire facility for the construction of which, or in connection with which, aid is sought, will be made available without discrimination on account of creed, and no professionally qualified person will be discriminated against on account of creed with respect to the privilege of professional practice in the facility.
- c. That the facility will furnish a community service and:
  - (1) will furnish below cost or without charge a reasonable volume of services to persons unable to pay therefore; or
  - (2) will NOT furnish below cost or without charge a reasonable volume of services to persons unable to pay therefore, because of the justification which is attached.
- d. The facility will be used for the purposes for which it is constructed for not less than 20 years after the completion of the construction.

2. Community Mental Health Centers:

That the services to be provided by the facility, alone or in conjunction with other facilities owned or operated by the applicant, will be made available for a program providing principally for persons residing in a particular community or communities in or near which

such facility is to be situated, at least the essential elements of comprehensive mental health services-i.e., inpatient services, outpatient services, partial hospitalization services (including at least day care services), emergency services provided 24 hours per day, and consultation and education services available to community agencies and professional personnel.

3. Health Professions and Allied Health Professions Teaching Facilities, Nurse Training Facilities, Medical Library Facilities, and Health Research Facilities.

- a. The facility will not be used for sectarian instruction or as a place for religious worship.
- b. The Health Professions Teaching facility is intended to be used for the purpose set forth in this application.
- c. The Allied Health Professions Teaching facility or Health Research facility will be used for the purpose for which it is constructed for not less than 10 years after the completion of construction.
- d. The Nurse Training facility or Medical Library facility will be used for the purpose for which it is constructed for not less than 20 years after the completion of construction.
- e. The Health or Allied Health Professions Training facility or Nurse Training facility will provide for increased enrollment as set forth in the program instructions and in this application.

4. School Construction under P.L. 81-815:

- a. It is a local educational agency having administrative control and direction of free public elementary or secondary education in the applicant school district, or a State agency which has the responsibility for providing school facilities.
- b. It is a local educational agency created and authorized to construct and maintain school buildings under constitutional, statutory, or charter provisions; and that it may accept and disburse Federal funds to aid in financing the cost of constructing school buildings in accordance with constitutional, statutory, or charter provisions cited;

Legal Classification:

Citation:

- c. The applicant has or will have title to the site or the right to build the school facilities on the site and to maintain them on the site for at least twenty years.
- d. The applicant's school facilities will be available to the children for whose education contributions are provided with funds under Public Law 81-815, as amended, on the same terms, in accordance with the laws of the State in which applicant is situated, as they are available to other children in applicant's school district.

c. The applicant will cause due consideration to be given to excellence of architecture and design of project and to the inclusion of works of art the cost of which does not exceed one percent of the Federal share of the cost of the project.

5. Higher Education Facilities under Titles I, II, III of the Higher Education Facilities Act.

a. No part of the eligible areas included in the proposed project: (1) is intended primarily for events for which admission is to be charged to the general public; (2) is especially designed for athletic or recreational activities other than for an academic course in physical education; (3) will be used for sectarian instruction or as a place for religious worship or primarily in connection with any part of the program of a school or department of divinity (as defined in P.L. 88-204); or (4) will be used by a "school of medicine," "school of dentistry," "school of osteopathy," "school of pharmacy," "school of optometry," "school of podiatry," or "school of public health" as these terms are defined in section 724 of the Public Health Service Act, or by a "school of nursing" as defined in that Act under section 843.

b. The applicant is fully cognizant of the requirements regarding economical methods of purchase of movable equipment in accordance with sound business practice, as set forth in the applicable regulations, (45 CFR 170.4), and all movable equipment, the cost of which is to be charged to the project, will be procured in accordance with such regulations. It is understood and agreed by

the applicant that the eligible project development cost and the Federal grant or loan amount may be reduced at settlement by the Commissioner of Education based on the amount of any costs claimed under the project which are for elaborate or extravagant equipment items.

c. It is understood and agreed by the applicant that the Commissioner of Education may, from time to time, after execution of a grant or loan agreement for the project, and prior to final settlement under the grant or loan agreement, make downward amendments in the grant or loan amount to adjust to a reduction in the cost of the facilities, the identification of ineligible costs, or a reduction in the size of the project.

d. The applicant has reviewed the academic and financial requirements for operation of the facilities upon completion, and considers the plans for operation of the facilities to be practical and within the financial capabilities of the institution.

e. The facility will be used as an academic facility for not less than twenty (20) years after completion of construction (unless otherwise approved by the U.S. Commissioner of Education), or for so long as the Government holds any of the bonds pursuant to a loan from the Government, whichever is longer.

20. CERTIFICATION BY APPLICANT

The applicant hereby certifies that the foregoing information in this application (including all assurances and all attachments) are correct to the best of its knowledge and belief.

\_\_\_\_\_  
(Legal Name of Applicant)

\_\_\_\_\_  
(Address)

\_\_\_\_\_  
(Signature of Authorized Officer)

\_\_\_\_\_  
(Address if different than above)

\_\_\_\_\_  
(Typed Name and Title of Authorized Officer)

\_\_\_\_\_  
(Date of Application)

DRAFT

JUSTIFICATION FOR NCI PROTECTION FACILITY AT THE UNIVERSITY OF MINNESOTA

The University of Minnesota is a multidisciplinary campus with major programs currently ongoing in a number of important areas in cancer research. It is apparent that a number of these ongoing research studies being done are proceeding with risk to the investigator and staff members as well as the environment due to the inadequate facilities provided in each of the researchers' own lab areas.

Within the proposed NCI Protection Facility, we intend to provide two laboratories, Radioiodine Labeling Lab and Carcinogen & Highly Toxic Chemical Lab, as well as shower and toilet facilities and reception area, creating a fully self-contained unit. The Radioiodine Labeling lab is to be the facility where all labeling of chemical and proteins is done on the Minneapolis Campus at the University of Minnesota. This centrally located lab will allow Iodine Labeling to be done with the greatest degree of protection to the technician as well as to the staff and environment. Currently, researchers are conducting labeling within their own laboratory areas. Due to the large number of  $^{125}\text{I}$  users and the wide spread location on campus, complete monitoring and coverage by the Radiation Protection Officer is not possible. Use of the Carcinogen Lab will replace procedures now being carried out in a number of locations on campus as well. Typical chemicals which are presently being used are benz(a)pyrene, B-naphthylamine, aflatoxin and diisopropylfluorophosphate. In the present laboratories, none of the laboratory hoods are adequately filtered for volatile carcinogen use. In both cases, it is apparent that the laboratory procedures are being conducted under adverse conditions with some risk to the investigator as well as the staff members and the environment.

If approved, this facility will be the first of its kind on campus and will be available to all researchers using these procedures. Since there is no other facility of this kind on campus, the insuring protection for these types of procedures depends upon the approval and funding of the grant.

RENOVATION OF EXISTING WAREHOUSE AREA FOR NCI PROTECTION FACILITY:

The University of Minnesota Environmental Health and Safety Department has inspected the warehouse area sub-basement level of the Boyton Health Services building to determine its feasibility for renovation to provide NCI Protection Facility. This feasibility survey deals with the suitability and adaptability of the laboratory as related to the major laboratory design requirements. Pending modification of recommendations, this facility will fulfill the criteria for NCI Protection Facility. A complete floor plan and description of the facility is enclosed. In addition to the two laboratory areas, the space will contain washroom facility including toilet, shower and lockers which will be particularly useful for laboratory personnel. The presence of this fully self-contained facility will further reduce frequency of movement in and out of the facility thereby reducing risk to the investigators, staff members and environment. The facility will provide three holding tanks for storage of radioactive waste material creating a centrally located area for radioactive waste removal.

We have asked the Health Sciences Planning Office at the University of Minnesota to estimate the work and cost required to renovate this facility. A complete description of the proposed renovation is attached as part of this grant application.

In the following sections to the grant, we describe the specific renovations required of the existing warehouse area. We also briefly list some of the current ongoing research studies that will require use of the facility. We believe the use of the closely supervised, self-contained unit along with adequate laboratory components will reduce some of the variables in the procedures being conducted as well as enhance the evaluation of the techniques being used.

We have attached a listing of some of the research studies now being conducted along with letters of support for the facility from proposed users. All of these studies reflect extensions of ongoing funded research projects, and are therefore well within the expertise, training and technical competence of the principal investigators involved.

DRAFT:

PROPOSED NCI RADIATION PROTECTION FACILITY:

The radioiodine labeling laboratory is to be the facility where all radioiodine labeling of chemicals and proteins is accomplished on the Minneapolis Campus of the University of Minnesota. Iodine-125 is a highly desirable label because of its sensitivity, versatility, ease of preparation and analysis and is potentially hazardous because of its toxicity and volatility. The centrally located facility will allow radioiodine labeling to be conducted without jeopardizing the health of technicians or the environment.

DESCRIPTION OF FACILITIES:

Reception check in room 101 will be identified as the entry point to the radioiodine/carcinogen laboratory facility, which each investigator shall sign in and out thus giving the facilities technician a permanent record of the days activity. This space shall also serve as the facility's technician's office.

Upon signing into the facility, the investigator will enter the laboratory area via corridor 102. Proceeding down corridor 102, the investigator shall enter gown room 105, where he or she shall gown prior to entering the radioiodine or carcinogen laboratories.

The radioiodine labeling laboratory 107 and 108 will be equipped so that two labeling procedures may be conducted simultaneously. Two radioisotope fume hoods will be installed back to back midway along the south wall of the laboratory thus effectively separating the room into two work stations.

Metal laboratory casework with stainless steel countertops will extend the entire length of the north wall with movable equipment, such as a bench top centrifuge<sup>1</sup> and source calibrator, stored midway along the counter. Two stainless steel sinks will be provided in the casework components located on the east and west walls. The drains of these particular sinks will be piped directly to the holding tanks provided in room 111.

The radioiodine hoods will conform to specifications for hoods designated for radioisotope research, including the sealed stainless steel exhaust duct work which will be designed to function with a 1" fiber roughing filter and 6" charcoal radioiodine filter. Each duct will be designed to provide access points on each side of the filters whereby instrumentation can be installed for monitoring the effluent air concentrations of radioiodine. Each hood shall also be specified with a monitoring device on the sash, which will monitor the personnel breathing zone.

Metal laboratory casework will provide locked individual storage for 15 to 20 investigators. An adequately shielded, large capacity laboratory refrigerator will be provided for the storage of temperature sensitive substances.

6'-1/2" x 6'-1/2" cold room (#109) complete with metal laboratory casework and vertical columns for fractionation procedures will be installed adjacent to radioiodine labeling laboratory 108. The cold room exhaust will also be monitored, and the work surfaces routinely surveyed.

Because of the effectiveness of monitoring depends upon accurate reliable instrumentation, an instrument calibration radiation source will be installed in Room 110, which will be designed with radiation shielding to a 7'-0" height on the west and south walls. The instruments

used on the premises will be calibrated regularly by the facilities technician. The investigators will also be able to use this equipment to calibrate their monitoring instruments used back in their own laboratories.

The radioiodine labeling laboratories will allow radioiodine labeling on the Minneapolis Campus to be accomplished under the state of the art environmental controls.

Carcinogen Laboratory 106 will be designed to include on 6'-0" radioisotope fume hood, which will be provided with an identical exhaust system to that provided in the radioiodine laboratory. The north wall will provide metal laboratory casework with stainless steel countertop and stainless steel sink, again the drain systems within this laboratory will be piped directly to the holding tanks in room 111.

The use of the specialized laboratory for carcinogen and highly toxic chemical handling room 106 will be limited to experiments or procedures involving significant concentrations or pure materials. A typical procedure would involve opening a vial of a pure substance, weighing a quantity and making up a dilution of the measured material. Once these materials have been diluted, it is usually safe to use them in a somewhat less controlled laboratory setting, and therefore further procedures would be conducted back in the investigators individual laboratory.

Laboratory procedures carried on in this facility will generally be relatively simple. They may also be quite rapid, although certain dissolution techniques could require several hours of heating and stirring.

Upon completing their activity in the radioiodine or carcinogen laboratory,



the investigator will return to gown room 105 where he or she will be monitored by the facilities technician to insure that the investigator has not inadvertently contaminated him or herself. If this test proves negative, the investigator will be allowed to proceed to the reception check-in room 101 where he or she will sign out in the log book prior to leaving the facility.

#### BASIC FINISHES:

The entire facility shall receive the following finish materials, which will provide the environmental control necessary in this facility.

Walls - concrete block with surface filler and two coats of epoxy paint.

Ceiling - plaster with two coats of epoxy paint

Flooring - seamless sheet vinyl with a coved base and thermally fused-welded joints. \* Holding tank room 111 shall receive a seamless composition flooring with a coved base to 4'-0".

All exposed joints between finishes shall be sealed with a continuous bead of silicone sealer. i.e. floor to metal casework, ceiling and wall intersection, coved base to wall, etc.

(draft - leave in as is)

XXXXXX  
XXXXXX  
XXXXXX

### Radiation Protection Advantages of the Facility

The central radioiodine labeling laboratory reduces the risk of employee and public exposure to ionizing radiation in several important ways:

1. Charcoal filtration of laboratory effluent air will ensure protection of the general public.
2. An adequately ventilated, spill-protective fume hood will be used for all labeling procedures. Frequent testing to ensure adequate face velocity and filter integrity will be provided.
3. Breathing zone, fume hood effluent, and cold room air will be consistently monitored and controlled to ensure radiation protection.
4. The laboratory will be designed to be easily decontaminated in case of a spill.
5. Investigators will always be monitored before leaving the radioiodine labeling laboratory to prevent radioactive contaminants from being carried out of the laboratory into areas where the general public or other personnel might be exposed.
6. Fractionation can be conducted in the controlled-access cold room when temperature sensitive materials are used. This central cold room will eliminate the need to use radioiodine in other cold rooms throughout Health Sciences.
7. Radioactive waste will be packaged in the fume hood, stored under the fume hood and disposed of under the supervision of Radiation Protection Program personnel. This contains and controls another source of potential contamination.
8. Radiation monitoring instruments will be calibrated in the central laboratory using the calibration source. Contamination surveys in the individual laboratories, as well as monitoring of the central facility, will thus be done with routinely calibrated instruments available to individual users.
9. Dose rates from the labeled proteins will be determined before leaving the labeling laboratory, so that adequate shielding and packaging may be provided for all packages.

### Administrative Advantages of the Facility

1. A radiation protection technician will be available to the central labeling laboratory to supervise and instruct as needed,


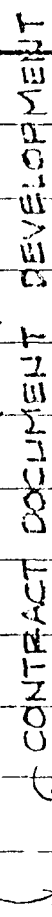






(draft - leave in as is)

~~xxxxxx~~

whenever radioiodine labeling is performed. He or she will also collected the required air samples.

2. Scheduling will be simplified. The need to coordinate schedules of laboratory technicians with the Radiation Protection staff will be minimal.
3. Locking storage space will be provided for approved radioisotope users who perform iodination procedures. Transport of instruments or equipment will not be necessary, and previously ordered radioiodine will be provided for each labeling procedure.
4. Storage of unused <sup>125</sup>I and disposal of radioactive waste will no longer be the responsibility of individual researchers.
5. Capital expenditures for ventilation, fume hood and/or cold room modifications will not be needed to control the hazards of volatile radioiodine in individual laboratories.

# RADIOIODINE LABELING LAB. - PROPOSED PROJECT SCHEDULE

1- CALENDAR YEAR												2ND, - CALENDAR YEAR												
# MONTHS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
ARCHITECTURAL / ENGINEERING	DESIGN DEVELOPMENT (3WK) 												CONTRACT DOCUMENT DEVELOPMENT (4WK) 											
U/M REVIEWS	DESIGN DEVELOPMENT REVIEW (1WK) 												CONTRACT DOCUMENT REVIEW (1WK) 											
CONTRACT (SINGLE PRIME)	BID PERIOD (2WK.) 												8 MONTH CONSTR. PERIOD 											
	FINALIZE C.D. (2WK.) 												CONTRACT AWARD (4WK.) 											

RADIOIODINE LABELING LABORATORY  
Research to be Supported by the Facility

The following cancer research projects involve radioiodine labeling procedures, and would be supported by the proposed central iodination facility:

Dr. Anthony J. Faras, Microbiology

Public Health Service - NIH N01-CP-61055

"Regulation of RNA Tumor Virus Gene Expression in Mammalian Cells"

The studies are intended to determine the level of control of the expression of RNA tumor virus genes in transformed (malignant) and retrovertant (nonmalignant) mammalian cells.

Public Health Service - NCI CA-20011

"Mechanism of Retrovirus Proviral DNA Synthesis"

The studies address the involvement of the location of the primer RNA, RNase H activity, and terminally repeated genomic nucleotide sequences in the synthesis and circularization of proviral DNA.

Public Health Service - NIH CA-18303

"RNA-directed DNA Polymerase and 70S RNA of Oncornaviruses"

By reannealing, hybridization and/or competition hybridization experiments, information should be revealed regarding the nature and location of the sequences involved in the formation of the 70S RNA, transduction and genetic recombination.

Leukemia Research Foundation, Inc.

"Molecular Mechanism of Avian Oncornavirus Induced Oncogenesis"

Study concerns the underlying mechanism by which the growth mechanism of normal cells is disturbed during the development of cancer.

The University of Minnesota Leukemia Task Force

"Nature and Mechanism of Action Molecules Responsible for Cell Transformation and Tumorigenesis"

Studies intended to determine the specific changes required to induce tumorigenicity in a tumor virus-infected animal cell model system as well as the precise changes in the molecular biology of human lymphocytes during leukemogenesis.

Public Health Service - NIH CA-25462

"Human Papilloma Virus and Malignant Disease"

Public Health Service - NIH CA-6387

"Revision of Rous-Sarcoma Virus-Transformed Cells"

Dr. Kazamiera Gajl-Peczalska, Pathology

National Institutes of Health - NCI CA-17034-04

"Immunology of Human Lymphoid Tumors"

Iodine-125 is used for labeling human immunoglobulins (IgG, IgM and IgA) used in double antibody radioimmunoassay for evaluation of suppressor or enhancing activity of lymphocytes from patients with lymphoma and leukemia.

Dr. Nelson Goldberg, Pharmacology

American Cancer Society - B166

"Cyclic GMP and Control of Cell Proliferation"

Iodine-125 is used for radioamino assays for measurement of the cyclic GMP.

Dr. Jonathan Parsons, Anatomy

American Cancer Society, University of Minnesota Institutional  
Research Grant - IN-13-R-25

"Determination of the Estrogen Binding Properties of Pituitary Tumors"

The MtTw<sub>15</sub> mammosomatotropic tumor used in these studies produces large quantities of both growth hormone (GH) and prolactin (PRL). Correlation of tumor function with tumor estrogen receptor characteristics involves, in part, the use of radioimmunoassays of both of these hormones. Ongoing use of RIA for GH and PRL is, therefore, an essential aspect of the work.

Dr. Charles Moldow, Medicine

National Cancer Institute CA-13722

"Cell Surface Receptors for Oncogenic Viruses"

The research addresses the binding of tumor receptors to cell lines.

Viral host range glycoproteins are purified, radioiodine labeled, and used in binding assays to identify cell surface receptors.

Dr. Andreas Rosenberg, Laboratory Medicine and Pathology

National Institute of Health BL16833-06

"Hemoglobin and red cell system in hemoglobinopathies"

National Science Foundation - PCM77-17689

"Systems Approach to Protein Structure"

National Institutes of Health - (in review)

"Effect of Surface Absorption on Multisubunit Proteins"

In the above research, iodination procedures are used for labeling labile mitogens, such as lectins and antigens. The labeled compounds are used in study of interactions of these compounds with surfaces, both artificial and of cellular origin.



UNIVERSITY OF MINNESOTA  
TWIN CITIES

Department of Laboratory Medicine and Pathology  
Medical School  
Box 198 Mayo Memorial Building  
420 Delaware Street S.E.  
Minneapolis, Minnesota 55455  
(612) 373-8623

July 19, 1979

Ralph O. Wollan  
Radiation Safety Officer  
Department of Environmental  
Health and Safety  
Boynton Health Service  
410 Church Street, S.E.  
Minneapolis, MN 55455

Dear Mr. Wollan:

One aspect of an ongoing research project in our laboratory is the characterization of the binding reaction of Concanavalin A to a variety of surfaces. Artificial and biological surfaces are being examined in order to classify the type of Con A binding observed. One of the more critical comparisons will be to study the binding reaction of Con A to transformed and normal cells, and to examine, within the context of our model, any differential behavior in the binding reactions which appear. In order to do this we require that the Con A be homogenous in its binding characteristics, and that the binding reaction be observable over a wide range of experimental conditions. The required sensitivity can be obtained by using radioiodinated Con A. Also, the trace iodination methods currently available are very gentle, and labeled Con A is not measurably altered in its binding characteristics when compared with native Con A.

As mentioned above, we require pure Con A. We are developing a purification/iodination protocol which will produce pure  $^{125}\text{I}$ -Con A in essentially one step, thereby increasing the efficiency of the production of our labeled reagent. The proposed facility would greatly simplify the logistics of using this new, more efficient protocol. In this regard,  $^{125}\text{I}$ -Con A is not commercially available, and even if it were, its purity would be suspect, since commercially available preparations of Con A are not pure.

The use of  $^{125}\text{I}$ -Con A allows us enhanced sensitivity in our assays, and experimental flexibility. Thus, we definitely will benefit by the establishment of a central radioiodine labeling laboratory. We feel that the handling and disposal problems which now exist would be greatly reduced

and that the risk of accidental exposure of fellow workers to the highly radioactive label ( $\text{Na}^{125}\text{I}$ ) would be eliminated. The combination of efficient handling of all aspects of the iodination procedure, from receiving the radioiodine, to the use of a specially designed cold room for chromatography, and the presence of trained personnel will greatly reduce the hazards involved in producing the  $^{125}\text{I}$ -Con A required in our investigation of the binding behavior of Con A to transformed and normal cells.

SUMMARY

We utilize iodination procedures ( $\text{I}^{125}$ ) for labelling of labile mitogens such as lectins and antigens (antigen E for example). The labelled compounds are used in study of interactions of these compounds with surfaces, both artificial and of cellular origin.

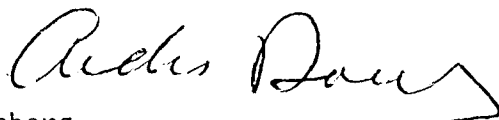
This work is supported by the following grants:

NIH 2 POI BL16833-06 1979-1984 Hemoglobin and red cell system in hemoglobinopathies. 120000 per year.

NSF PCM77-17689 Systems approach to protein structure 1979-1981 40 000 a year.

NIH Effect of Surface Adsorption on Multisubunit Proteins in Review.

Sincerely,



Andreas Rosenberg  
Professor and Director  
Research Programs

AR:pr





UNIVERSITY OF MINNESOTA  
TWIN CITIES

Department of Surgery  
Medical School  
Health Sciences Unit C  
516 Delaware Street S.E.  
Minneapolis, Minnesota 55455

August 3, 1979

Ralph O. Wollan  
Radiation Protection Officer  
Department of Environmental  
Health and Safety

Dear Mr. Wollan,

I'm writing in support of your proposal to establish a central radioiodine labeling facility. This is of particular significance to our laboratories since we have recently used radioiodine to label one of our agents in our own facility which we found severely wanting in terms of employee radiation protection. That labeling procedure was done very inefficiently because we had first to borrow or obtain several items and had to tie up our own hood space during the procedure. A central facility would save us a great deal of time and inconvenience if such were available.

The alternative to operating with these difficulties is of course to purchase commercially labeled material. This solution is most often not appropriate for us because of its added cost and because the radioiodine-labeled agents we might use are not routinely available. Furthermore, we may not need as much of the labeled material as the minimum available as a commercial product. Therefore, it remains a requirement for us, in terms of both cost and availability, to be able to label our own materials in our own facility as needed.

Our source of funding for Cancer-related research is USPHS grant CA 11605, entitled "Immunologic Reactivity in Special Circumstances". The use of radioiodine in these and other studies conducted in our laboratory is not always predictable. Though we have no current need for radioiodine-labeled material, the potential for its need is always with us as we identify agents which must be traced for their fate within a cell. While we have no plans to be the central facility's most active user, its presence is most significant to us. Without it we might be tempted to leave certain questions unresolved if an alternate means of labeling is not available or appropriate.

Sincerely yours,

Robert Nelson, Ph.D.  
for Richard L. Simmons, M.D.  
Professor of Surgery

RN:kpa



UNIVERSITY OF MINNESOTA  
TWIN CITIES

Box 609 Mayo  
University Hospitals and Clinics  
420 Delaware Street S.E.  
Minneapolis, Minnesota 55455  
(612) 376-1267

July 20, 1979

Mr. Ralph O. Wollan  
Radiation Protection Officer  
Department of Environmental Health and Safety  
Boynton Health Service  
410 Church Street SE  
Minneapolis, MN 55455

Dear Mr. Wollan:

Radioiodine labelled substances presently provide us with a highly sensitive and analytical tool for conducting our projects in cancer research. The proposed centralized labelling laboratory would represent a significant technical advancement by providing a laboratory of maximal efficiency in all aspects of the labelling procedure. Such a laboratory would encourage investigators to radioiodinate their own reagents, thereby obviating the need to purchase expensive prelabelled reagents. A central labelling laboratory would also greatly improve on radiation protection because of the proposed presence of maximal safeguard facilities and procedures.

We enthusiastically support the construction of such a facility.

Sincerely yours,

Tucker W. LeBien, Ph.D.

John H. Kersey, M.D.  
Professor of Pediatrics and  
Laboratory Medicine & Pathology

JHK/lj

RADIOIODINE LABELING LABORATORY  
Research Potentially Supported by the Facility

Cancer research which involves commercially prepared iodine-labeled compounds would potentially be supported by the central radioiodine labeling laboratory, if the principle investigator elects to prepare his/her own radioiodine labels rather than purchasing pre-labeled material. The following is a sample of such research:

Dr. John Kersey, Laboratory Medicine and Pathology

National Cancer Institute (Contract) CB-24261-31  
"Antigens of Human Lymphoid Organs: Immunodiagnosis of Leukemias and Lymphomas"

National Institutes of Health CA-25097-01  
"Differentiation of the Human Immune System: Cell Surface Antigens"

Both the above referenced grants involve the investigation of cell surface antigens present on human malignant and nonmalignant leukocytes. Iodinated reagents are used to: a) quantitate immunoglobulin production via radioimmunoassay, and b) detect monoclonal antibodies produced by hybrid cells via a radiobinding assay.

Dr. John Kersey, M.D.

In the construction grant proposal for a central radioiodine labeling facility, we will list and describe the cancer research to be supported by the facility (i.e., cancer research involving radioiodine labeled material). Please review the information below about your cancer research and correct any errors or missing information (note items with\*), so that our proposal is complete, correct, and as persuasive as possible.

Return this sheet by July 20 to Radiation Protection Program, Boynton Health Service W-140. Thank you for your help on this project.

Source of Funding: National Institutes of Health  
Grant Number: CA-25097-01  
Research Project Title: "Differentiation of the Human Immune System: Cell Surface Antigens"

\* Statement describing the research and the role of I-125/I-131:

Source of Funding: National Cancer Institute  
Grant Number: (Contract) CB-24261-31  
Research Project Title: "Antigens of Human Lymphoid Organs: Immunodiagnosis of Leukemias and Lymphomas"

\* Statement describing the research and role of I-125/I-131:

Both of the above referenced grants involve the investigation of cell surface antigens present on human malignant and nonmalignant leukocytes. Iodinated reagents are used to: a) quantitate immunoglobulin production via radioimmunoassay, and b) detect monoclonal antibodies produced by hybrid cells via a radiobinding assay. All work is done in vitro, with no work involving live animals.

Dr. Jonathan Parsons, Ph.D.

In the construction grant proposal for a central radioiodine labeling facility, we will list and describe the cancer research to be supported by the facility (i.e., cancer research involving radioiodine labeled material). Please supply the information requested below. Even if you do not have a grant at this time, describe the role of radioiodine in any cancer research in progress. We would like our proposal to be complete, correct, and as persuasive as possible.

Return this sheet by July 20 to Radiation Protection Program, Boynton Health Service - W140. Thank you for your help on this project.

Source of Funding:

Grant Number:

Research Project Title:

Statement describing research and the role of I-125/I-131:

Source: American Cancer Society, University of Minnesota Institutional Research Grant.

Grant #: ACS Grant IN-13-R-25

Title: Determination of the Estrogen Binding Properties of Pituitary Tumors.

Statement:

1A. Project description

In recent years the analysis of steroid hormone receptor populations in normal and neoplastic tissue has proven to be of considerable value. Knowledge of receptor levels in hormone responsive tumors has aided in their diagnosis and treatment. Preliminary observations in this laboratory indicate that an experimental rat pituitary tumor has measurable amounts of estrogen receptors. This project is designed to evaluate further the quantity, physiochemical characteristics, cellular distribution and localization of this receptor in tumors from several experimental treatment groups. The receptor characteristics can then be correlated with the endocrine secretory activity of the tumor. Due to the limited number of estrogen receptor studies performed on pituitary tumors and the potential for this tumor system to serve as a model to study hormonally responsive endocrine secretory tissue, this project should provide new information to the field of tumor cell biology.

B. Role of I-125/I-131

The MtTW<sub>15</sub> mammosomatotropic tumor used in these studies produces large quantities of both growth hormone (GH) and prolactin (PRL). Correlation of tumor function with tumor estrogen receptor characteristics involves, in part, the use of radioimmunoassays of both of these hormones. Ongoing use of RIA for GH and PRL is, therefore, an essential aspect of the work.

2. Helpful aspects of central labeling laboratory

Current practices require the attendance of an RP representative during our radioiodination procedures performed within our laboratory. Scheduling has been a problem occasionally. The proposed facility should obviate these problems by providing a full-time RP representative who should be able to serve at the convenience of the various radioiodine users.

3. Radiolabeled rat pituitary hormones are not generally available through commercial sources. The expense incurred by having to use "custom labeling" services would likely prove to be prohibitive.

Respectfully yours,



Jonathan A. Parsons, Ph.D.  
Associate Professor  
Department of Anatomy

JAP/bs

Faculty Support for the  
Radioiodine Labeling Laboratory

Dr. Kazamiera Gajl-Peczalska communicated her support for the facility by telephone:

1. Radioiodine labeling is a major tool in the type of research Dr. Gajl does. She would not be able to pursue her research without the radioiodine labels. Further, she would not be able to pursue the research without the ability to do the labeling at the University because pre-labeled compounds are not available commercially.
2. The central facility will be better for the safety of her laboratory staff and more economical in that it will free up space now reserved almost exclusively for iodination procedures.

AUG 8 Rec'd

Dr. Ronald Soltis, M.D.

UNIV. OF MINN.  
HEALTH SCIENCE  
PLANNING OFFICE

In the construction grant proposal for a central radioiodine labeling facility, we will list and describe the cancer research to be supported by the facility (i.e., cancer research involving radioiodine labeled material). Please supply the information requested below. Even if you do not have a grant at this time, describe the role of radioiodine in any cancer research in progress. We would like our proposal to be complete, correct and as persuasive as possible.

Return this sheet by July 20 to Radiation Protection Program, Boynton Health Service W-140. Thank you for your help on this project.

Source of Funding: USPHS-NIH  
Grant Number: 1201 AM26086-01  
Research Project Title:

STUDIES OF IN VIVO IMMUNOGLOBULIN AGGREGATION

Statement describing research and the role of I-125/I-131:

ONE PORTION OF THIS STUDY INVOLVES DETECTION OF AGGREGATED IMMUNOGLOBULIN IN CANCER PATIENTS' SERA USING RADIOIMMUNOASSAYS (125I). 40-50 PATIENT SERA WILL BE TESTED IN THESE ASSAYS.

IN RESPONSE TO YOUR SPECIFIC QUESTIONS:

- (1) THESE STUDIES WOULD NOT BE POSSIBLE WITHOUT RADIOIODINE LABELING. A CENTRALIZED LAB PROBABLY WOULDN'T CONTRIBUTE TO THE QUALITY OF THIS STUDY
- (2) THE MAIN ADVANTAGE IS THAT A CENTRAL LAB WOULD HOPEFULLY GUARANTEE RADIATION PROTECTION.
- (3) PURCHASING PRELABELED COMPOUNDS:  
NOT AVAILABLE.  
CUSTOM LABELING WOULD GREATLY INCREASE OUR EXPENSES.





UNIVERSITY OF MINNESOTA  
TWIN CITIES

Health Sciences Planning Office  
Physical Planning  
4103 Powell Hall, Box 75  
500 Essex Street S.E.  
Minneapolis, Minnesota 55455  
(612) 373-8981

August 6, 1980

TO: Clint Hewitt  
FROM: Paul J. Maupin *Paul*  
SUBJECT: Toxic Materials Handling Facility

We have reviewed the proposals submitted by the Architects for the Toxic Materials Handling Facility. Our recommendations are as follows:

1. Rodger Johnson-James, Forberg Assoc./Arch.  
Impressive experience with University and laboratory design - particularly radio-isotope labs
2. Trossen/Wright Assoc./Arch.  
good experience in hospital and labs design

Tom Kyle of my staff will attend the August 18, 1980 selection meeting along with Dr. Vessley.

PJM: jm



UNIVERSITY OF MINNESOTA  
TWIN CITIES

Health Sciences Planning Office  
Physical Planning  
4103 Powell Hall, Box 75  
500 Essex Street S.E.,  
Minneapolis, Minnesota 55455  
(612) 373-8981

August 7, 1980

TO: Clint Hewitt

FROM: Paul J. Maupin *Paul*

SUBJECT: Toxic Materials Handling System

Dr. Vessely has reviewed the proposals submitted by the Architects and concurs with our recommendations (see our memo to you dated August 6, 1980.)

Dr. Vessley will be unable to attend the selection meeting as he will be on vacation at that time. However, Mr. Kyle of my staff will represent the University and the department at this meeting.

PJM: jm



UNIVERSITY OF MINNESOTA  
TWIN CITIES

Office of the Assistant Vice President

Physical Planning  
340 Morrill Hall  
100 Church Street S.E.  
Minneapolis, Minnesota 55455

September 25, 1980

Roger Johnson/James Forberg Associates, Architects  
1409 Willow Street  
Minneapolis, Minnesota 55403

OCT 09 1980

Attn: Mr. Roger Johnson

Re: Toxic Material Handling Facility

Dear Sirs:

Attached for your signature are four copies of a standard University of Minnesota Owner/Architect Agreement with your firm regarding professional architectural services to be performed for the Toxic Material Handling Facility located on the Twin Cities Minneapolis Campus.

Please sign all copies of the agreement and return all copies to this office for execution on behalf of the University of Minnesota. A fully executed copy will be returned for your files.

If you have any concerns, questions or comments regarding this agreement, please feel free to call either me or Mr. Gary Summerville at 373-2250.

Sincerely,

Clinton N. Hewitt  
Assistant Vice President  
Physical Planning

CNH:GJS:jr

cc: Gary Summerville  
Paul Maupin



## REGENTS OF THE UNIVERSITY OF MINNESOTA

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# Owner and Architect Agreement

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THIS AGREEMENT, made this *26* day of *September* 1980, by and between the REGENTS OF THE UNIVERSITY OF MINNESOTA, hereinafter referred to as "University," as party of the first part, and Roger Johnson/James Forberg Associates, Architects, 1409 Willow Street, Minneapolis, Minnesota, 55403, hereinafter referred to as "Architect," as party of the second part, WITNESSETH:

WHEREAS, the University intends to remodel spaces in a building, hereinafter described in the Project Description and will require professional services.

NOW THEREFORE, it is hereby agreed by and between the parties hereto:

The Architect agrees to perform for the work set out in the Project Description professional and other services as hereinafter set forth in Articles I and II.

The University agrees to compensate the Architect for such services as hereinafter set forth in Articles III, IV, and V.

The parties further agree to the following conditions:

Project Description: The Project is located at the University of Minnesota Twin Cities Minneapolis Campus and shall be known as the Toxic Material Handling Facility. The Project consists of upgrading and modifying portions of the Boynton Health Service to comply with modern environmental standards, program requirements and applicable codes. The scope of the services to be provided shall include:

1. General Building Work
2. Mechanical Work
3. Electrical Work
4. Development in cooperation with the University of a design concept and construction sequence that will allow adjacent academic programs and health center functions to maintain operations during the construction process, acknowledging reasonable allowances for construction inconveniences.
5. Cost estimates and construction schedule requirements.

#### ARTICLE I - PROFESSIONAL SERVICES

The Architect shall provide for the Project complete architectural and engineering services in accordance with the best professional standards. Where qualified and competent structural, mechanical, electrical engineers, and cost consultants are not employed within the Architect's organization, such engineers or consultants shall be employed and paid for by the Architect and shall be approved by the University. In the performance of all phases of the professional services listed hereunder, the Architect and such consultants shall employ energy saving measures and techniques to the greatest extent possible. The professional services shall be divided in the following phases and shall include the following:

#### PHASE I - SCHEMATIC DESIGN PHASE

a) Analysis of the University's "Program" and consultation leading to the adjustment of the University's "Program" to conform with the stated project construction cost.

b) Preparation of Schematic Design Studies which will define the proposed general arrangement of rooms and spaces; general, mechanical, electrical, structural and building materials systems; and preliminary cost estimates.

c) Presentations in appropriate written and graphic form, including all building floor plans, sections, block elevations, perspective sketches or simple block model, written statement of construction materials and fundamental engineering systems, a written cost estimate, and a written report regarding energy conservation measures and techniques which will be considered for the project.

#### PHASE II - DESIGN DEVELOPMENT PHASE

a) Upon approval by the University of the Schematic Design Phase, further detailed development of the Project to establish the final space arrangement; building materials, structural, mechanical and electrical systems; site development; outline specifications; and cost estimates.

b) Presentation in appropriate written and graphic form, including floor plans indicating Group I and Group II equipment layout; plans indicating the essentials of the structural, mechanical and electrical systems; appropriate building sections; basic building details; delineated perspective of the Project; written outline specifications and written cost estimates of each item as noted in the Project Description; and a written report regarding energy conservation measures and techniques employed. (This report shall also include a summary of all other energy conservation measures and techniques that were considered and the reasons that they were rejected.)

### PHASE III - CONSTRUCTION DOCUMENTS PHASE

a) Upon approval by the University of the Design Development Phase, preparation of complete documents, including all working and detail drawings, specifications and proposal documents required to obtain bidder proposals for the work and the preparation of a final cost estimate. Observe in the preparation of all plans and specifications the instructions of the "Standard Requirements for University of Minnesota Construction" and the latest addenda thereto, unless permission to deviate therefrom is secured in writing.

b) Submission of all documents and the cost estimate, including deduct alternates to provide a 10% bidding cushion, for review by the University.

c) Correction of the documents in accordance with the University's instruction.

d) Submission of a final written report regarding energy conservation measures and techniques employed, including the life cycle cost savings that can be expected as a result of the incorporation of these measures and techniques in the Project.

e) Upon approval by the University of working drawings and specifications and when instructed to proceed, issuance of bidding documents and preparation of addenda to plans and specifications.

f) After receipt of bids, assistance in the analysis of the bids received and recommendations for award of contract for construction.

### PHASE IV - CONSTRUCTION PHASE

a) Throughout the construction period, preparation of large-scale and full-sized details, if required, checking and approval of shop drawings (including Group I Equipment) and samples, preparation of color schedules, approval of materials and colors, and preparation of bulletins and change orders.

b) Throughout the construction period, observation of the construction work by periodic visits to the site of such frequency and duration as are approximately equivalent to one-man-day visit each week. The Architect will endeavor to ensure that performance of the work of the contractors is in accord with the contract documents for the work. The Architect's services shall not be construed as the undertaking of supervisory control of construction, but he shall, upon the request of the University, render opinions in the interpretation of, or adherence to, the contract document. Observation shall include the Architect's attendance at scheduled meetings of the contractors and the University. In conjunction with the required observation, the Architect will make a written report to the Assistant Vice President, Physical Planning, at least once each month during the progress of the work and make a final inspection and report when the work is completed. Where time exceeding the equivalent of one-man-day visit each week is required and authorized, the Architect will be reimbursed in accordance with the provisions of Article V. Resident detailed supervision by a Construction Superintendent and such assistants as may be necessary shall be provided by and paid by the University.

c) The Architect shall provide services to assist the University in the selection of furniture and furnishings for the Project in the form of consultation relating to general design objectives and critiques of the University's proposals of layout and selection. In the event that the University desires the Architect to provide full interior design services for the selection of interior furnishings and special equipment, these services will be covered under a separate agreement.

d) Upon the completion of the construction period, furnish one set of reproducible original tracings or mylar sepia suitable for reproduction, either of which must be corrected to "as-built" conditions. The drawings shall be



construed to be of "as-built" condition, if they record all addendums, change orders, field changes, or other significant modification from the original bidding document, particularly that which is concealed after completion and particularly that which may affect future expansion or the construction of other facilities. "As-built" drawings shall not be required to record in-detail changes such as lighting switch locations, routing of detail piping, conduit, wiring and the like which are incidental to normal construction.

#### DRAWINGS AND DOCUMENTS TO BE FURNISHED

The Architect shall, at his own expense, furnish the University up to six sets of all drawings and documents required for Phase I; reproducible transparencies of drawings and up to six sets of drawings and other documents required for Phase II; reproducible transparencies of drawings and up to thirty sets of working drawings, specifications and addenda required for bidding purposes and one set of "as-built" original tracings upon completion of construction. Additional copies shall be paid for by the University at the actual cost to the Architect.

#### ARTICLE II - COST OF PRODUCT

The cost of the construction contracts for the Project shall not exceed Three Hundred Fifty-Five Thousand Dollars (\$355,000). ← *£ must be under contract Aug 6-30-81*

The Architect, in the course of his performance of professional services, will keep the University advised in writing as to the estimated value of changes in construction costs occasioned either by revisions in requirements of the University or by the general cost trends in the construction industry. Where these estimates vary from the previous estimate to a degree which brings them out of line with the above mentioned construction cost, revisions in the program and/or budget mutually satisfactory to the University and the Architect shall be

made. Where bids exceed the final approved estimate, the Architect will make recommendations to the University of changes in plans and specifications whereby the construction cost will be reduced. Such recommendations will include, if necessary, revision of working drawings and specifications at no cost to the University except where the bidding process has been materially delayed or major unforeseeable economic changes have occurred in construction costs, in which case the Architect shall be reimbursed for making such major revisions as provided for in Article V.

### ARTICLE III - COMPENSATION

The University agrees to compensate the Architect on account of services rendered on the basis of a lump sum fee of Thirty-Three Thousand Seven Hundred Twenty-Five Dollars (\$33,725), if the Project is completed. If the Project is abandoned or suspended, the Architect shall be compensated for work completed in accordance with this Article and Articles IV, V, and XII.

If the University requests the Architect to perform architectural services for any part of the Project which is not built, the Architect shall be compensated for this work up to the point of its suspension. Payment for such work shall be on the same basis as other work in the contract in direct proportion to the amount of work completed, based on the latest estimate agreed to by the University and the Architect.

Payments to the Architect shall be made within approximately thirty days following the Architect's request for payment. Requests for payment may be made monthly. Such requests shall be written, shall explain in reasonable detail the basis for the amounts requested, shall include the University's purchase order number, and shall be signed by a principal of the firm. At no stage of the work shall the aggregate of such monthly requests exceed the following:

Completion of Phase I	15% of the base fee
Completion of Phase II	35% of the base fee
Completion of Phase III	75% of the base fee
Completion of Phase IV	100% of the base fee

#### ARTICLE IV - REIMBURSEMENTS

The University agrees to reimburse the Architect, in addition to the basic fee as follows:

1) For the actual cost of transportation and living incurred by him and his staff while traveling on trips authorized by the University. This shall not include the cost of transportation between the Project site and the home office of the Architect, nor living in the area of the Project site.

2) For costs of prints and documents in excess of the number specified in Article I, when authorized by the University.

3) For consultants fees, when authorized by the University.

4) For the preparation of change orders for major revisions in drawings, specifications or other documents when such revisions are inconsistent with written approvals or instructions previously given by the University and are due to causes beyond the control of the Architect.

Requests for reimbursements are to be accompanied by supporting vouchers.

#### ARTICLE V - EXTRA SERVICES AND SPECIAL CASES

In addition to the compensation to the Architect for basic fee and for reimbursements as provided for in Article IV, the Architect shall be paid for extra services necessitated by the following:

1) General revisions in design, layout and program requested by the University after acceptance of the previous phase of professional services, provided the Architect enters claim for extra compensation within 30 days after

receiving University instructions relative to said revisions. Minor changes required by the University during the period of the preparation of the working drawings shall not be construed by the Architect as valid claim for extra compensation.

2) Damage to Project caused by fire, windstorm or acts of God.

3) Observation of construction in excess of that described in Article I.

4) Services relating to the preparation of special brochures, special drawings, models or special funding document data not customarily associated with professional services, when authorized by the University.

5) Services beyond the scope of this agreement, as specifically described and agreed to by the University and Architect prior to the performance of such services.

Requests for payment on account of extra services shall be based on an hourly charge for all man-hours worked by the Architect's personnel assigned to providing such services. The charge for man-hours worked shall be billed at 2.75 times the regular hourly rate of the employee, plus the net cost of premium pay for overtime. (This factor is intended to cover all fringe benefits, overhead and profit.) Hourly charges for principals shall not exceed \$45.00 per hour and associates shall not exceed \$35.00 per hour. In the case of a salaried employee, the equivalent hourly rate will be obtained by dividing his salary by 2080.

In no case shall the Architect receive extra compensation by reason of any subdivision of the work into separate contracts.

#### ARTICLE VI - CREDITS

Not applicable.

ARTICLE VII - UNIVERSITY CONSULTANTS

The Architect agrees to work with representatives of the University and any consultant or consultants that the University may appoint relative to the Project. The University shall pay the fees of such consultants.

ARTICLE VIII - DATA TO BE FURNISHED BY UNIVERSITY

The University shall, so far as the work under this agreement may require, furnish the Architect with complete and accurate survey data on all floor elevations, and full information as to sewer, water, gas and electrical services.

The University shall pay for borings or test pits and for chemical, mechanical or other tests as requested by the Architect, but it is expressly understood and agreed that in so agreeing to pay for such borings or tests, the University is not responsible for their adequacy for the purposes used, nor for any conclusion drawn therefrom.

ARTICLE IX - ORDER OF PROCEDURE

The execution of this agreement shall constitute approval to proceed with Phase I - Schematic Design Phase. The Architect shall proceed beyond that phase only as and to the extent ordered in writing by the University. Phase IV - Construction Phase shall commence upon awarding the construction contracts by the University and shall not require further written approval from the University for the Architect to proceed. The Assistant Vice President, Physical Planning, is the designated representative of the University to issue such written approval and to act on its behalf with respect to this Project.

ARTICLE X - SUCCESSORS AND ASSIGNMENTS

The University and the Architect each binds himself, his partners, successors, executors, administrators and assigns to the other party to this agreement, and to the partners, successors, executors, administrators and assigns of each other party in respect to all covenants of this agreement.

Except as above, neither the University nor the Architect shall assign, sublet or transfer his interest in this agreement without the written consent of the other.

ARTICLE XI - SETTLEMENT OF DISPUTES

In case any dispute or controversy arises between the Architect and the University out of any provisions herein contained, such dispute or controversy shall be referred to any neutral individual or organization, designated by the Vice President of Finance, such as the American Arbitration Association or the State Board of Hearing Examiners, whose decision shall be final and binding upon all parties. All costs of arbitration shall be borne by the party demanding arbitration, subject to any award of costs by the arbitration panel. No action under this paragraph shall be maintained by the Architect unless commenced within 90 days after said Architect has been furnished by the University with a final payment under this contract or, at the election of the Architect, within six months after the work provided for under this agreement is completed.

While the Architect shall be in general charge of the Project, and shall be the chief advisor and consultant to the University on this Project, yet in all cases in which consultants are separately employed by the University, the full cooperation of the Architect shall be required and, in turn, such consultants shall cooperate fully with the Architect. Any disagreement which may arise between the Architect and such consultants shall be referred to the University whose decision in the matter shall be final and binding on all parties.

ARTICLE XII - CANCELLATION, TERMINATION BY ABANDONMENT OR SUSPENSION,  
REDUCTION IN SCOPE

1) Cancellation. If, through any cause other than force majeure, strikes, fire, or by delay authorized by the University, the Architect shall fail to submit

drawings and other documents as required herein and according to the project schedule to be established by the University in consultation with the Architect, or if the Architect shall violate any of the covenants, agreements or stipulations of this agreement or perform such services in an unsatisfactory manner, the University shall have the right to cancel this agreement upon three days written notice to the Architect. If, upon cancellation, the University incurs additional costs as a result of the Architect's failure to perform, the Architect shall be liable for the purpose of set-off, until such time as the exact amount of such additional cost is determined and the Architect has rendered payment thereof. The Architect shall only be entitled to payment for services satisfactorily performed as of the date of notice of cancellation in accordance with the schedule as established in Articles III, IV, and V of this agreement.

2) Termination by Abandonment or Suspension, Reduction in Scope. At any time during the term of this agreement, the University may abandon the Project entirely, suspend it for an indefinite time or reduce the scope or quality of the Project upon seven days written notice to the Architect.

a) In the event that the University abandons the Project entirely or suspends same for more than 90 calendar days, the Architect shall only be entitled to compensation for services satisfactorily rendered as of the date of notice of abandonment or suspension in accordance with the payment schedule set forth in Articles III, IV and V of this agreement.

b) In the event that the University reduces the scope of the Project, the Architect's fee shall be computed on the basis of Article III of this agreement. If said reduction in scope is undertaken in order to bring the Project within the allocated construction cost, the Architect shall perform all services occasioned by said reduction in scope pursuant to Article II of this

agreement. If the University reduces the scope of the Project for any other reason, the Architect will be entitled to compensation for any additional work occasioned thereby pursuant to Article V of this agreement.

#### ARTICLE XIII - NON-DISCRIMINATION IN EMPLOYMENT

The Architect agrees not to discriminate against any employee or applicant for employment to be employed by the Architect in the performance of this agreement with respect to hire, tenure, terms, conditions or privileges or employment or any matter directly or indirectly related to employment because of sex, race, color, religion, national origin or ancestry.

The Architect further agrees that every subcontract relating to professional services entered into for the performance of this contract will contain a provision requiring non-discrimination in employment, as herein specified, on the part of each subcontractor. Breach of this provision may be regarded as a material breach of this agreement.

#### ARTICLE XIV - OTHER CONDITIONS

1) At the time of signing this agreement, the Architect shall furnish to the University a copy of a policy of Professional Liability Insurance in the amount of ten percent (10%) of the allocated construction cost and, in no case, shall the minimum coverage be less than \$200,000 per project. The insurance premium shall be paid by the Architect.

2) Ownership of Documents. Except for original tracings and copies of additional material, all drawings, samples, surveys, maps, models, photographs, reports, data studies specifications and all other finished or unfinished documents prepared by the Architect under this agreement shall be deemed the property of the University whether or not the project for which they are made is completed or this agreement is cancelled prior to termination.



The University and the Architect hereby agree to the full performance of the covenants contained herein.

IN TESTIMONY WHEREOF, the parties hereto have caused these presents to be executed the day and year first above written.

REGENTS OF THE  
UNIVERSITY OF MINNESOTA

\_\_\_\_\_  
Vice President for Finance

In the presence of:

\_\_\_\_\_

ROGER JOHNSON/JAMES FORBERG ASSOCIATES

By \_\_\_\_\_

Title \_\_\_\_\_

Date \_\_\_\_\_

RECOMMENDED:

\_\_\_\_\_  
Assistant Vice President  
Physical Planning

\_\_\_\_\_  
Date

\_\_\_\_\_  
University Attorney

\_\_\_\_\_  
Date

\_\_\_\_\_  
Commissioner of Administration  
State of Minnesota

\_\_\_\_\_  
Date

UNIVERSITY OF MINNESOTA  
TWIN CITIES

Health Sciences Planning Office  
Physical Planning  
4103 Powell Hall, Box 75  
500 Essex Street S.E.  
Minneapolis, Minnesota 55455  
(612) 373-8981

October 1, 1980

TO: Gary Summerville  
FROM: Tom Kyle  
SUBJECT: Iodinization Facility

NCI granted award on June 3, 1980 and by September 2, 1980 the firm of Johnson-Forberg Associates had been selected as consultants for the Iodinization Facility to be constructed in Boynton Hall. The terms of Award, Item 15, requires that the project be under contract by July 1, 1981.

The contract with the architects should stipulate that critical July date and if one backs up from there it is evident the project is seriously late in starting.

It is imperative that we begin immediately with consultants on the phase one Schematics.

I am contacting the Architect now in an effort to get the ball rolling. The department has prepared preliminary program information which I will transmit to the consultants. We have lost four months or one third of the time allotted for this unique and inovative project and at this point it will require especially concentrated efforts of all involved to meet deadlines. I will appreciate your efforts to expedite the process.

Yours truly,

  
Tom Kyle  
Asst. Health Sciences Planning Coordinator

TK:mka

cc: Dr. Vesley  
Paul Maupin  
file ✓

**ROGER JOHNSON - JAMES FORBERG ASSOCIATES / ARCHITECTS**

1409 WILLOW STREET / MINNEAPOLIS / MINNESOTA 55403 / 612-871-7741  
ROGER JOHNSON / JAMES FORBERG / RICHARD H. SMITH

October 3, 1980

Mr. Clayton A. Boynton  
Assistant Vice President  
Physical Planning  
300 Merrill Hall  
University of Minnesota  
Minneapolis, Minnesota 55455

Re: Toxic Material Handling Facility

Dear Mr. Boynton:

We are pleased to have been selected as the architects for this project and are prepared to proceed immediately with the design phase. We understand that because of the Federal funding, the time frame for completing the design is relatively short. Because of this and the building trades contract expiration next spring, we believe it would be extremely advantageous to proceed at the earliest possible date.

The University has provided detailed design information including site plan, location of building, etc. We will be responsible for the design of the building which has been left to date and will do whatever is possible to expedite the design.

The signed contract is attached to this letter and the project will be covered by a Professional Liability Policy coverage.

Richard Smith and I will be working on this project. We are both familiar with University procedures and are somewhat familiar with Boynton Hall. We have visited the construction site with Tom Kyle and Dr. Vassily.

Would you please advise the name or names of the persons who are in responsible charge for the University? Also, prior to the interview, we were advised that the program had been revised. Have these changes been incorporated into the program?

The special nature of this project makes it difficult to estimate the cost of construction until detailed cost data has been accumulated. How was the \$350,000 budget established? Is it fixed? Is the data available for our use which was needed in establishing the budget?

Phase I and Phase II of the contract requires perspective sketches and/or models which are probably not appropriate to this project. We will balance this requirement with a higher quality presentation technique in other aspects of the requirements.

**ROGER JOHNSON · JAMES FORBERG ASSOCIATES / ARCHITECTS**

1409 WILLOW STREET / MINNEAPOLIS / MINNESOTA 55403 / 612-871-7741  
ROGER T. JOHNSON / JAMES H. FORBERG / RICHARD H. SMITH

Mr. Clinton N. Hewitt

Page 2

October 3, 1980

Would you please advise if there are any federal guidelines other than 'safety' and wage rates will be applicable to this project.

The area of the work includes a prefabricated testing cubicle. Will this be removed by the University or will the contractor be expected to do this work.

We are concerned about the size of the fee (between 9-10%) for a project of this complexity. However, if the work is expedited by all parties, it should meet the timetable and offset what might be a low fee.

The University may want to consider retaining Norman Steere and Gerhard Knutson as consultants for their expertise. Harvey Jaeger is familiar with their credentials.

We would appreciate authorization to order the as-built prints of Boynton and the adjacent ramp elevator - stair tower (contains mechanical shaft for the building) at an early date so as to implement the start of work.

Sincerely,



Roger T. Johnson

RTJ:b  
enc.

cc: Summerville  
Maupin  
Kyle



UNIVERSITY OF MINNESOTA  
TWIN CITIES

Health Sciences Planning Office  
Physical Planning  
4103 Powell Hall, Box 75  
500 Essex Street S.E.  
Minneapolis, Minnesota 55455  
(612) 373-8981

October 15, 1980

TO: Clint Hewitt  
FROM: Paul J. Maupin *Paul*  
SUBJECT: Toxic Materials Handling Facility

Tom Kyle has drafted a response to Johnson/Forberg Architects' letter of 10/3/80 giving specific answers to questions contained in the letter.

Attached please find our rough draft letter for your approval along with a copy of the letter of inquiry.

PJM:jm

DRAFT ONLY

October 15, 1980

Mr. Roger T. Johnson  
Roger Johnson/James Forberg Associates/Architects  
1409 Willow Street  
Minneapolis, Minnesota 55403

*Response to letter 10-3-80*  
Re: Toxic Material Handling Facility

Dear Mr. Johnson:

We appreciate your concern about the schedule of events for the Toxic Materials Handling Facility and endorse all efforts to make up for time lost. One of the "Terms of Award" from NCI requires that the project be under contract by July 1, 1981. That date is first priority to all concerns and will be met to insure funding.

The Health Sciences Planning Coordinator is Mr. Paul Maupin. He has assigned Mr. Tom Kyle as project manager and Tom is your primary contact for the project. The Health Sciences Planning Office is in charge of the project and all correspondence, pay requests and meeting requests should be addressed to that office. I am aware that you have made contact with Mr. Kyle on October 10, 1980 for a preliminary exchange of information. Mr. Kyle will be responsible for providing you with updated and approved program information.

The Health Sciences Planning Office prepared the budget for NCI submittal and it is fixed per the Grant and Terms of Award.

Other guide lines to adhere to are UBC, State and Local requirements, and University Standards. The project will be reviewed and approved by the University Engineering Department and University Code Officials.

The Environmental Health Department wishes to retain the testing cubicle mentioned in your letter and will discuss options with you in your planning meetings.

The consultants you mentioned will not be necessary as our Environmental Health Department personnel are considered well versed in the field and set the standards. One of the consultants is a former member of their staff.

You should continue to work with the Health Sciences Planning Office and order any documentation necessary from Engineering Records.

Very truly yours,

Clinton N. Hewitt  
Asst. Vice-President

**ROGER JOHNSON · JAMES FORBERG ASSOCIATES / ARCHITECTS**

1405 WILLOW STREET / MINNEAPOLIS / MINNESOTA 55405 / 612-871-7741  
ROGER T. JOHNSON / JAMES H. FORBERG / RICHARD H. SMITH

October 3, 1980

DATE	OCT 6 1980
CH	

Mr. Clinton N. Hewitt  
Assistant Vice President  
Physical Planning  
340 Morrill Hall  
University of Minnesota  
Minneapolis, Minnesota 55455

Re: Toxic Material Handling Facility

Dear Mr. Hewitt:

We appreciated being selected as the architects for this project and are prepared to proceed immediately with the design phase. We understand that because of the federal funding, the time frame for completing the documents is relatively short. Because of this and the building trades contract expirations next spring, we believe it would be extremely advantageous to proceed at the earliest possible date.

The RFP from the Designer Selection Board indicated starting Construction Documents on October 1. We would like to be able to make up the two months which has been lost to date and will do whatever possible in this regard.

The signed contracts are enclosed as is a copy of the Professional Liability Policy coverage sheet.

Richard Smith and I will be working directly on the project. We are both familiar with University procedures and are somewhat familiar with Boynton Hall. We have visited the construction area with Tom Kyle and Dr. Vessely.

Would you please advise the name or names of the persons who will be in responsible charge for the University. Also, prior to the interview, we were advised that the program had been revised. Have these changes been incorporated into the program?

The special nature of this project makes it difficult to estimate the cost of construction until detailed cost data has been accumulated. How was the \$350,000 budget established? Is it fixed? Is the data available for our use which was needed in establishing the budget?

Phase I and Phase II of the contract requires perspective sketches and/or models which are probably not appropriate to this project. We will balance this requirement with a higher quality presentation technique in other aspects of the requirements.

**ROGER JOHNSON · JAMES FORBERG ASSOCIATES / ARCHITECTS**

1409 WILLOW STREET / MINNEAPOLIS / MINNESOTA 55403 / 612-871-7741  
ROGER T. JOHNSON / JAMES H. FORBERG / RICHARD H. SMITH

Mr. Clinton N. Hewitt  
Page 2  
October 3, 1980

Would you please advise if there are any federal guidelines other than 'safety' and wage rates will be applicable to this project.

The area of the work includes a prefabricated testing cubicle. Will this be removed by the University or will the contractor be expected to do this work.

We are concerned about the size of the fee (between 9-10%) for a project of this complexity. However, if the work is expedited by all parties, it should meet the timetable and offset what might be a low fee.

The University may want to consider retaining Norman Steers and Gerhard Knutson as consultants for their expertise. Harvey Jaeger is familiar with their credentials.

We would appreciate authorization to order the as-built prints of Boynton and the adjacent ramp elevator - stair tower (contains mechanical shaft for the building) at an early date so as to implement the start of work.

Sincerely,

  
Roger T. Johnson

RTJ:b  
enc.

cc: Summerville  
Maupin  
Kyle





UNIVERSITY OF MINNESOTA  
TWIN CITIES

Office of the Assistant Vice President

Physical Planning  
340 Morrill Hall  
100 Church Street S.E.  
Minneapolis, Minnesota 55455

OCT 21 1980

October 20, 1980

Mr. Roger T. Johnson  
Roger Johnson/James Forberg Associates/Architects  
1409 Willow Street  
Minneapolis, Minnesota 55403

RE: Response to letter, October 3, 1980

Dear Mr. Johnson:

I am writing in response to your letter of October 3, 1980 concerning the schedule of events for the Toxic Materials Handling Facility and endorse all efforts to make up for time lost. One of the "Terms of Award" from NCI requires that the project be under contract by July 1, 1981. That date is first priority to all concerns and will be met to insure funding.

The Health Sciences Planning Coordinator is Mr. Paul Maupin and Mr. Tom Kyle has been assigned the project manager. Tom is your primary contact for the project. The Health Sciences Planning Office is in charge of the project and correspondence regarding the project and meeting requests should be addressed to that office. I am aware that you have made contact with Mr. Kyle on October 10, 1980 for a preliminary exchange of information. He will be responsible for providing you with updated and approved program information.

The Health Sciences Planning Office prepared the budget for NCI submittal and it is fixed per the Grant and Terms of Award. Other guidelines to adhere to are the Uniform Building Code, state and local requirements, and University Standards. The project will be reviewed and approved by the Planning Office, University Engineering Department and University Code Officials.

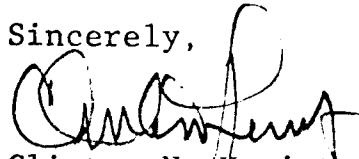
The Environmental Health Department wishes to retain the testing cubicle mentioned in your letter and will discuss options with you in your planning meetings.

The consultants you mentioned will not be necessary as our Environmental Health Department personnel are considered well versed in the field and set the standards. One of the consultants is a former member of their staff.

October 20, 1980  
Mr. Roger T. Johnson  
Page Two

You should continue to work with the Health Sciences Planning Office and order any documentation necessary from Engineering Records.

Sincerely,



Clinton N. Hewitt  
Assistant Vice President  
Physical Planning

/jc

cc: Gary Summerville  
Paul Maupin

**ROGER JOHNSON · JAMES FORBERG ASSOCIATES/ARCHITECTS**

1409 WILLOW STREET / MINNEAPOLIS / MINNESOTA 55403 / 612-871-7741  
ROGER T. JOHNSON / JAMES H. FORBERG / RICHARD H. SMITH

November 5, 1980

NOV 6 Rec'd

Mr. Tom Kyle  
Health Science Planning Office  
4103 Powell Hall  
Box 75  
500 Essex Street S.E.  
Minneapolis, Minnesota 55455

Re: Toxic Material Handling Laboratory

Dear Tom:

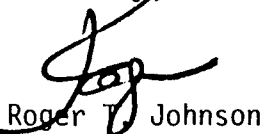
In response to your telephone call today, we would propose the following as a schedule for our work on this project.

- |  |                              |
|--|------------------------------|
| ★ Schematic Design Phase - Four Weeks      | Nov 5, 1980/Dec 2, 1980      |
| ★ User Review - Two Weeks                  | Dec 3, 1980/Dec 17, 1980     |
| - Design Development Phase - Five Weeks    | Dec 18, 1980/Jan 23, 1981    |
| ★ User Review - Two Weeks                  | Jan 26, 1981/Feb 9, 1981     |
| ★ Construction Documents Phase - Ten Weeks | Feb 10, 1981/Apr 23, 1981    |
| ★ User Review - 3 weeks                    | Apr 24, 1981/May 14, 1981    |
| Bidding Phase - 3 weeks                    | May 15, 1981/June 9, 1981    |
| Contract Aware (Mandatory)- 3 weeks        | June 30, 1981                |
| Construction Phase - 6 months              | July 1, 1981/January 1, 1982 |

Of this total time, seven weeks have been allowed for review by the University and the related federal agencies. If this time allotment is exceeded by any substantial period, the mandatory contract award deadline could be jeopardized. We are hopeful that we can reduce the time spent on our phases of the work and will make every attempt to do so. However, it will be difficult to make up the time projected in the RFP (2½ months delay) unless every effort is made by all concerned to condense the time needed for their efforts.

We anticipate that we will have a revised preliminary plan for your review, based on the revised program by the beginning of next week. I will contact you shortly in this regard.

Sincerely,



Roger T. Johnson

RTJ:b

cc: Gausman and Moore



UNIVERSITY OF MINNESOTA  
TWIN CITIES

Health Sciences Planning Office  
Physical Planning  
4103 Powell Hall, Box 75  
500 Essex Street S.E.  
Minneapolis, Minnesota 55455  
(612) 373-8981

November 7, 1980

RE: 1 C06 CA 28136-01

Mr. William E. Cissel, Jr.  
NCI Project Engineer  
Research Facilities Branch  
National Cancer Institute  
Westwood Building - Room 820  
Bethesda, Maryland 20205

Dear Mr. Cissel:

I am sending you copies of three letters from Dr. Thompson and Mr. Wollan explaining their position on 'Holding Tanks in the Toxic Materials Handling Laboratory' at the University of Minnesota. Dr. Thompson and I discussed her conversations with you and the omission of tanks meets with our approval.

I have also included a proposed schedule of events for your information. We will submit the appropriate documents to you per this schedule during the review periods identified.

This information is being sent to you for information purposes only.

Sincerely,

Tom Kyle  
Assistant Health Sciences Planning Coordinator

TK:mka

cc: Paul Maupin ✓  
Dr. Vesely  
Vic Scott  
File



UNIVERSITY OF MINNESOTA  
TWIN CITIES

Health Sciences Planning Office  
Physical Planning  
4103 Powell Hall, Box 75  
500 Essex Street S.E.  
Minneapolis, Minnesota 55455  
(612) 373-8981

November 10, 1980

TO: Dave Kerkow  
Pete Merz  
Russ Smith  
Don Herron  
Les Szomer

FROM: Tom Kyle *Tom*

SUBJECT: Toxic Material Handling Laboratory

Attached is a copy of the Schedule of Events for the design of a new laboratory in the Health Services Building.

I am advising you so you may look forward to reviewing the various documents. It is important that the reviews be completed within the allotted time as NCI has informed us that the project must be under contract by July, 1981 or it will not be funded.

We have no float time as you can see by the schedule and your assistance and efforts will be appreciated.

cc: Paul Maupin ✓

TK: jm

**ROGER JOHNSON · JAMES FORBERG ASSOCIATES / ARCHITECTS**  
1409 WILLOW STREET / MINNEAPOLIS / MINNESOTA 55403 / 612-871-7741  
ROGER T. JOHNSON / JAMES H. FORBERG / RICHARD H. SMITH

November 5, 1980

NOV 6 Rec'd

Mr. Tom Kyle  
Health Science Planning Office  
4103 Powell Hall  
Box 75  
500 Essex Street S.E.  
Minneapolis, Minnesota 55455

Re: Toxic Material Handling Laboratory

Dear Tom:

In response to your telephone call today, we would propose the following as a schedule for our work on this project.

★ Schematic Design Phase - Four Weeks	Nov 5, 1980/Dec 2, 1980
★ User Review - Two Weeks	Dec 3, 1980/Dec 17, 1980
- Design Development Phase - Five Weeks	Dec 18, 1980/Jan 23, 1981
★ User Review - Two Weeks	Jan 26, 1981/Feb 9, 1981
★ Construction Documents Phase - Ten Weeks	Feb 10, 1981/Apr 23, 1981
★ User Review - 3 weeks	Apr 24, 1981/May 14, 1981
Bidding Phase - 3 weeks	May 15, 1981/June 9, 1981
Contract Aware (Mandatory)- 3 weeks	June 30, 1981
Construction Phase - 6 months	July 1, 1981/January 1, 1982

Of this total time, seven weeks have been allowed for review by the University and the related federal agencies. If this time allotment is exceeded by any substantial period, the mandatory contract award deadline could be jeopardized. We are hopeful that we can reduce the time spent on our phases of the work and will make every attempt to do so. However, it will be difficult to make up the time projected in the RFP (2½ months delay) unless every effort is made by all concerned to condense the time needed for their efforts.

We anticipate that we will have a revised preliminary plan for your review, based on the revised program by the beginning of next week. I will contact you shortly in this regard.

Sincerely,

  
Roger T. Johnson

RTJ:b

cc: Gausman and Moore

**ROGER JOHNSON · JAMES FORBERG ASSOCIATES / ARCHITECTS**

1409 WILLOW STREET / MINNEAPOLIS / MINNESOTA 55403 / 612-871-7741  
ROGER T. JOHNSON / JAMES H. FORBERG / RICHARD H. SMITH

MEMORANDUM

Date: December 2, 1980  
Subject: Toxic Materials Handling Laboratory  
Present: Hewitt, Maupin, Vesely, Kyle and Johnson



The above met in Hewitt's office to review the documents prepared for the Regents' review on the above project. Included are three 30 x 40 boards, a preliminary cost estimate and an outline specification. Two boards include architectural and engineering plans and elevations. The third board, prepared by the University, is a key to the project location. The architects were requested to prepare a fourth board which would identify the project more specifically in Boynton.

The complex nature of the work proposed was outlined to Hewitt. The type of equipment and mechanical-electrical systems were reviewed. The safety provision requirements were discussed. The cost of the work including alternates for emergency power and use of existing chiller were noted.

It was noted that the project required more complete investigations at the preliminary stage than is customary. Hopefully this will be of advantage in accelerating the project completion.

Access for the handicapped is required and has been accommodated. To augment this feature, it was agreed to omit the floor from the walk-in Cold Room and insulate from below. It was also agreed to include a 7' deep vestibule at each laboratory to complete the isolation technique.

The location of the ductwork in the adjacent stack space was reviewed. It was requested that this ductwork have appropriate labeling in the completed installation. The architect pointed out that some existing exhaust ductwork and fans in this same area might require upgrading at some time.

cc: Hewitt  
Kyle (3)  
G-M



UNIVERSITY OF MINNESOTA  
TWIN CITIES

Health Sciences Planning Office  
Physical Planning  
4103 Powell Hall, Box 75  
500 Essex Street S.E.  
Minneapolis, Minnesota 55455  
(612) 373-8981

December 3, 1980

RE: 1 CO6 CA 28136-01

Mr. William E. Cissel, Jr.  
NCI Project Engineer  
Research Facilities Branch  
National Cancer Institute  
Westwood Building - Room 820  
Bethesda, Maryland 20205

Dear Mr. Cissel:

Enclosed is the Schematic Design for the Central Toxic Material Handling Facility in Boynton Health Services at the University of Minnesota. This design was a result of extensive communication with occupants and the architects selected. The special nature of the project required practically completing Design Development before a Schematic could be clarified.

For this reason and the time constraints involved we would like to refer to these documents as Schematic & Design Development and proceed with Contract Documents; incorporating review comments of course.

With a July 1, 1981 award date for construction we are necessarily compressing as many phases as possible. We will look forward to your comments and approval of our assumptions.

Please call me at 612-373-8590 if you need clarification or wish to discuss the project.

Yours truly,

Tom Kyle  
Assistant Health Sciences Planning Coordinator

cc: Paul Maupin  
Dr. Vesely  
Vic Scott  
File

ENC



## TOXIC MATERIALS HANDLING FACILITY

CONSTRUCTION COSTS: \$355,334 (1)

## NON-BUILDING COSTS:

Architects Base Fees @ 9%	\$ 33,725 (2)
Reimbursables @ 1%	3,553
Utilities	700
Testing & Balancing	2,500
SAC Charge	1,425
Construction Supervision	7,107
Miscellaneous Expenses	1,400
Miscellaneous Engineering	3,550
Building Activation	1,425
Building Permits @ .20%	711
Planning Consultants fees	7,107
Contingency @ 4%	12,450
Builders risk Ins at .20 per \$100.00 per year	<u>711</u>

Total non-building Costs 74,939

GROUP II EQUIPMENT 18,200

TOTAL ESTIMATES PROJECT COST \$448,473

## TOTAL FUNDS AVAILABLE:

PHS (Cancer)	\$221,530	
U/M Central Admin.	<u>232,961</u>	<u>454,491</u>

Balance of Funds Available \$ 6,018 (3)

## Notes:

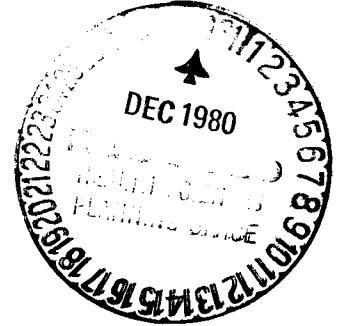
1. The construction figure is the not to exceed figure in the grant application as well as in the Architects contract
2. A/E fees are based upon the signed Architect/Owner contract with 1% added in for reimbursables.
3. Any excess funds estimated to date will be considered contingency funds until the final award of contract is made.

**ROGER JOHNSON · JAMES FORBERG ASSOCIATES / ARCHITECTS**

1409 WILLOW STREET / MINNEAPOLIS / MINNESOTA 55403 / 612-871-7741  
ROGER T. JOHNSON / JAMES H. FORBERG / RICHARD H. SMITH

MEMORANDUM

Date: December 29, 1980  
Subject: Toxic Material Handling Laboratory



Tom Kyle called to advise of the following:

1. HEW requires a tabulation of total net area and net areas on a room by room basis. Need this information to complete their review.
2. HEW had no other comments at this time on plan or construction systems.
3. HEW will not agree to dropping Design Development submittal. Kyle will advise in this regard.
4. University will not require Design Development submittal. Proceed into contract documents.

Johnson requested that the inconsistency of a rated wall for the Radioiodine Lab without shielded doors be reviewed. Either non rated walls or rated doors?

Another item requiring clarification is who is to pay for enclosing the corridors to provide the second exit. It should be remembered that the estimate already exceeds the budget. The corridor extension was not included in the original grant.

cc: Kyle  
G & M



UNIVERSITY OF MINNESOTA  
BUILDING APPLICATION and PERMIT

This space reserved for  
**PERMIT NUMBER**

**APPLICATION**

This Permit Application is to be filled out in five copies. (No carbon necessary when sufficient pressure is applied.) A numbered copy, signed by the Building Official, will be returned to be used as the construction permit. Please fill in all pertinent information.

**PROJECT NUMBER**

Name of building/project Toxic Materials Laboratory

Description of work New construction in 1400 sq. ft. of existing space

Location or campus Health Services Building - Basement Building number \_\_\_\_\_

Estimated value of work \$ 355,000.00 Source of estimate NCI Grant

Proposed use or occupancy Laboratory - Material dillution New work? \_\_\_\_\_ Remodeling? X

Type of laboratories (if any) One isotope lab and one chemical lab.

Type of shops (if any) \_\_\_\_\_

	Yes	No		Yes	No
Is use of space being changed?	<u>X</u>	_____	Are exit routes being affected by this work?	<u>X</u>	_____
Will explosives be used or stored?	<u>X</u>	_____	Have structural changes been reviewed with architect/engineer?	<u>X</u>	_____
Will flammable dusts be generated?	_____	<u>X</u>	Name of architect/engineer <u>Johnson-Forberg Associates</u>		
Will L.P. gas be used or stored?	_____	<u>X</u>			
Is supporting structure being altered?	_____	<u>X</u>	Was the project reviewed with the Planning Office?	<u>X</u>	_____
Is loading being changed?	_____	<u>X</u>	If so, name of individual <u>Clinton Hewitt</u>		

Charge permit fee to: \_\_\_\_\_

Person making application:  
Signature Thomas W. Syle

Title Assist. Health Sciences Planning Coordinator

Date January 1, 1981

**Note to Applicant:**

Retain GOLD copy.

Forward all other copies to:

University of Minnesota  
Planning Office  
321 Morrill Hall  
Minneapolis, Minnesota 55455

WHITE copy becomes PERMIT when approved and numbered.

Actual value of work \$ \_\_\_\_\_

Permit Fee \$ \_\_\_\_\_

**PERMIT**

NOTICE: This Permit is not valid until numbered and signed by the University of Minnesota Building Official.

Reviewed by:

\_\_\_\_\_ Engineering and Construction

\_\_\_\_\_ Environmental Health and Safety

\_\_\_\_\_ Physical Planning

\_\_\_\_\_ Physical Plant

PERMISSION IS HEREBY GIVEN TO PERFORM THE WORK DESCRIBED IN THE ABOVE APPLICATION.

Building Official \_\_\_\_\_

Date \_\_\_\_\_

January 6, 1981

EDS Construction  
P. O. Box 43570  
St. Paul, Mn 55164

Re: Toxic Materials Handling Facility  
Boynton Health Service

Gentlemen:

Enclosed are sepias of the laboratory furniture shop drawings including fume hoods. We have not included a set of prints as we assume you will want to have a number of prints run for your office, field office and subcontractors. These drawings are stamped "Approved as Noted" with the exception of the electrical drawings which are stamped "Make Corrections Noted". The electrical drawings sheets 2C, 2D and 2E were received on December 1, 1981. They were forwarded to the electrical engineer for checking and then to the University of Minnesota electrical inspector for his review. These drawings were then rerouted through the same channels to this office. The balance of the drawings were received on December 15, 1981 and have been held in this office so a complete submittal could be returned at one time.

On reviewing the submittals and the accompanying correspondence, we were disturbed by the indications in the letter of November 19, 1981 from American Hamilton that we were disrupting the Hamilton delivery schedule. As you are aware, this project has suffered extensive delays due to the lack of performance by the laboratory furniture supplier.

Prior to bidding, Haldeman Homme and American Hamilton were aware that a dual chamber auxiliary air hood was specified. They indicated that they would have no problem meeting this specification.

Before making a shop drawing submittal, Hamilton requested a meeting with the University, the Architect and the Contractor at which time they tried to get approval of their standard, single chamber auxiliary air fume hood. This request was rejected. The first shop drawings submittal was not received until 2 1/2 months after the contract award and was incomplete. This submittal was not acceptable. The second submittal was received over a month later and contained a number of drawings not included with the first submittal. The electrical drawings included with the second submittal were "not approved".

On October 23, 1981 a meeting was held which was attended by University representatives, Darrel Turnnock from Haldeman Homme, Jack Frerichs of EDS and me. At that time a number of items related to the shop drawings which were in the possession of Darrel Turnnock were reviewed. Included in

EDS Construction  
Page 2  
January 6, 1982

these comments were the reduction in removable and panel sizes to avoid conflicts with filters, casework etc. A copy of the memo was provided to Haldeman Homme.

The shop drawings which are being returned with this letter did not contain the corrections discussed in the meeting of October 23, 1981. Corrections noted on the shop drawings have often not been made until repeatedly noted. An example of this is the recessed drainboard which was clearly detailed on the architectural drawings. After two submittals and a third separate submittal on counter tops alone, the detail has finally been provided on the current submittal. The comments on the electrical drawings which Hamilton took exception to in their letter of November 19, 1981 have not been properly addressed as evidenced by the repeated comments on the current electrical submittals. Hamilton's failure to make noted corrections has resulted in our having to spend additional time double checking items on subsequent submittals. It is interesting to note that although the fume hoods were of the initial concern, the majority of the delays in shop drawing approval have been due to items unrelated to the auxiliary air system and involves features which are reasonably standard in the industry. It should be realized by this time that deviations from the specified products will not be permitted.

I would like to point out that the quality of the shop drawings submitted and the number of resubmittals required has resulted in an excessive amount of time by this office and our engineering consultants. The delays in making the corrections, requiring additional submittals has delayed the completion of the project a minimum of 5 1/2 months past the scheduled completion date. We are positive that this has resulted in considerable additional costs for you as well as your other subcontractors. I cannot recall another project where delays of this magnitude have resulted from the failure of one subcontractor to perform. Submittals have been reviewed and returned by this office and our consultants in the minimum time possible. This final submittal has taken longer due to its receipt just before the Holiday season and the additional review by the University's electrical department.

Please advise your supplier that a firm delivery date has been requested on repeated occasions but has never been received. This information should be provided in writing at the earliest possible date. We recommend that you advise your subcontractor and his supplier of the total dissatisfaction by all parties concerned in this project with their failure to meet reasonable time and performance standards.

Sincerely,

Richard H. Smith  
RHS:b

cc: Kyle, Baron, G & M and H & H



UNIVERSITY OF MINNESOTA  
TWIN CITIES

Health Sciences Planning Office  
Physical Planning  
4103 Powell Hall, Box 75  
500 Essex Street S.E.  
Minneapolis, Minnesota 55455  
(612) 373-8981

January 13, 1981

Mr. William E. Cissel, Jr.  
NCI Project Engineer  
Research Facilities Branch  
National Cancer Institute  
Westwood Building - Room 820  
Bethesda, Maryland 20205

Reference: 1 C06 CA28136-01

Dear Mr. Cissel:

Attached is a room by room net area tabulation and the total net area figure that you requested as part of the Schematic plans and review process.

We will transmit the Design Development plans to you on schedule for your review. We continue to appreciate your expeditious handling of reviews.

Very truly yours,

Thomas W. Kyle  
Assistant Health Sciences Planning Coordinator

cc: Paul Maupin  
Dr. Donald Vesley  
Vic Scott

TWK:jmw

**ROGER JOHNSON · JAMES FORBERG ASSOCIATES / ARCHITECTS**

1409 WILLOW STREET / MINNEAPOLIS / MINNESOTA 55403 / 612-871-7741  
ROGER T. JOHNSON / JAMES H. FORBERG / RICHARD H. SMITH

January 7, 1981



Mr. Tom Kyle  
Health Science Planning Office  
4103 Powell Hall  
Box 75  
500 Essex Street S.E.  
Minneapolis, Minnesota 55455

Re: Toxic Materials Handling Facility  
Basement - Boynton Health Service  
University of Minnesota

Dear Tom:

We have calculated the net areas of the individual rooms in the Toxic Material Handling Facility as follows:

Instrument Calib	57 S.F.
Cold Room	42 S.F.
Radioiodine Lab	354 S.F.
SHR (Radioiodine)	15 S.F.
Anteroom (Radioiodine)	35 S.F.
Toilet	36 S.F.
Storage/Prep	59 S.F.
Recept/Check-in	125 S.F.
Lockers	32 S.F.
Shr. (Carcinogen)	16 S.F.
Ante Room (Carcinogen)	37 S.F.
Carcinogen Lab	266 S.F.
New Mech Room	160 S.F.
Total Net Area	<u>1,234 S.F.</u>

The total net area of all rooms excluding the new mechanical room is 1074 square feet. This is 19 square feet larger than the 1055 square foot net area shown on the preliminary drawing SK-3. This difference can be accounted for by minute dimensional variations which are cumulative when working with individual rooms.

Sincerely,

Richard H. Smith

RHS:b



UNIVERSITY OF MINNESOTA  
TWIN CITIES

Health Sciences Planning Office  
Physical Planning  
4103 Powell Hall, Box 75  
500 Essex Street S.E.  
Minneapolis, Minnesota 55455  
(612) 373-8981

February 25, 1981

Richard H. Smith  
Rodger Johnson - James Forberg/Associates  
1409 Willow Street  
Minneapolis, Minnesota 55403

SUBJECT: Toxic Materials Handling Facility  
Fume Hoods

Dear Dick:

I discussed the location of fume hood fans with Bob Hudalla, Harold Tatge, and Paul Maupin and we all agree to endorse the placement of the fans in weather-proof enclosures on the roof of the elevator mechanical room at ramp B. When we meet with Bob to discuss the auxiliary air hoods we should review the fan placement with him and Environmental Health.

Harold mentioned that fans exposed to outside temperatures should have additional belts - one more than called for in specs; 3 belts if two are called for or 2 belts if one is called for. Please consider this suggestion as he has many years of practical experience in maintenance of these systems.

Sincerely,

Tom Kyle  
Asst. Health Sciences Planning Coordinator

cc: Bob Hudalla  
Paul Maupin  
File ✓

TK:mka



**ROGER JOHNSON · JAMES FORBERG ASSOCIATES / ARCHITECTS**  
1409 WILLOW STREET / MINNEAPOLIS / MINNESOTA 55408 / 612-871-7741  
ROGER T. JOHNSON / JAMES H. FORBERG / RICHARD H. SMITH

May 1, 1981



Mr. Tom Kyle  
Health Sciences Planning Office  
Box 726 Mayo  
Minneapolis, Minnesota 55455

Re: Toxic Materials Handling Facility  
University of Minnesota

Dear Tom:

Enclosed is a copy of our Preliminary Cost Estimate dated April 30, 1981. This estimate has been reviewed to reflect the omission of the emergency generator, additional cost for lighting fixtures due to more wall mounted fixtures and additional costs involved in the relocation of electrical panels due to the work which will be required on the first floor. The cost involved with the electrical panels relocation is necessitated by the requirement of the 1981 National Electrical Code which recently went into effect.

The total estimated construction cost including a 10% contingency is \$347,440. It is our recommendation that the estimated construction cost listed in the Advertisement for Bids be reduced from \$350,000 to \$335,000 or \$340,000. Please advise.

Sincerely,

A handwritten signature in cursive script that reads "Richard H. Smith".

Richard H. Smith

RHS:b

**ROGER JOHNSON - JAMES FORBERG ASSOCIATES / ARCHITECTS**1409 WILLOW STREET / MINNEAPOLIS / MINNESOTA 55403 / 612-871-7741  
ROGER T. JOHNSON / JAMES H. FORBERG / RICHARD H. SMITH

April 30, 1981

PRELIMINARY COST ESTIMATETOXIC MATERIAL HANDLING FACILITY  
BASEMENT - BOYNTON HEALTH SERVICE  
UNIVERSITY HOSPITALS - UNIVERSITY OF MINNESOTA  
TWIN CITIES CAMPUS - MINNEAPOLIS, MINNESOTAGeneral Construction

-C.B. walls including solid block where required	\$ 5,345	
-Lath and Plaster Partitions and Ceilings	6,325	
-Flooring and Base	3,120	
-Painting	1,500	
-Doors, H. M. Frames and Hardware	5,300	
-Calking and Toilet Accessories	5,440	
-Casework and Cold Room	75,000	
-Subtotal	<u>101,730</u>	
-Job Mobilization, Profit and Overhead	25,430	
-Total	\$ 127,160	\$ 127,160

Mechanical Construction

-Plumbing and Special Piping	\$ 54,000	
-Liquid Heat Transfer	8,000	
-Ventilating and Air Tempering	38,000	
-Controls	8,000	
-Subtotal	<u>108,000</u>	
-Job Mobilization, Profit and Overhead	27,000	
-Total	<u>135,000</u>	\$ 135,000

Electrical Construction

-Fixtures	14,000	
-Fire alarm, clocks, intercom	2,800	
-Relocation of Elec Cabinet	15,000	
-Wiring, Cabinets and Temp Service	9,500	
-Total	<u>41,300</u>	
-Mobilization, Profit and Overhead	12,390	
-Total	<u>53,690</u>	\$ 53,690

-Grand Total		\$ 315,850
-Contingency - 10		31,590
		<u>\$ 347,440</u>

DEDUCTIVE ALTERNATES      Onie casework in Stor/Prep Rm      5,000

The above does not include refrigerators, movable equipment, fees, furniture, etc.



UNIVERSITY OF MINNESOTA  
TWIN CITIES

Health Sciences Planning Office  
Physical Planning  
Health Sciences Complex  
Box 726 Mayo Memorial Building  
Minneapolis, Minnesota 55455  
(612) 373-8981

June 5, 1981

TO: Tom Kyle  
FROM: Paul J. Maupin *Paul*  
SUBJECT: Toxic Materials Handling Lab

Bill Sissel of National Cancer Institute called June 3, 1981 regarding review comments on the Toxic Materials Handling Lab. I talked to a Bill Kenny on a conference call. The major concern was regarding their past experience with the Medco Valves which do not function as the designers intended them to. They are constantly hunting or modulating everytime there is a fluctuation in temperature. They feel that there are other valves on the market that satisfy the design intent without all of the problems.

They also made a general remark that we seem to have gone a little too far with automatic controls which in their experience will create maintenance problems for us in the future. They did not like the high and low switch on the fume hoods. There were some minor electrical comments. They did, however, make a flat statement that the radio-isotope fume hoods must be on an emergency electrical source. Bill will transmit these comments to you in writing.

Tom, talk over each item with the Architects and others. If it is in the best interest of the University, make the change. After receiving Bill's letter, answer each item with action taken in writing.

If changes are made, you will probably have to do so by change order at a later date.

PJM:jmw



UNIVERSITY OF MINNESOTA  
TWIN CITIES

Health Sciences Planning Office  
Physical Planning  
Health Sciences Complex  
Box 726 Mayo Memorial Building  
Minneapolis, Minnesota 55455  
(612) 373-8981

June 15, 1981

TO: Tony Aydinalp  
FROM: Paul J. Maupin *Paul J. Maupin*  
SUBJECT: Toxic Materials Handling Facilities

As you may be aware, EDS Construction is low bidder on the subject project. Past experience with this contractor indicates that we will need prudent construction supervision the the project.

Inasmuch as Gordon Dahlen has worked with the contractor previously, we request that he be assigned the project.

PJM:jmw



UNIVERSITY OF MINNESOTA  
TWIN CITIES

Health Sciences Planning Office  
Physical Planning  
Health Sciences Complex  
Box 726 Mayo Memorial Building  
Minneapolis, Minnesota 55455

(612) 373-8981

June 23, 1981

TO: Gary Summerville  
FROM: Tom Kyle *Tom Kyle*  
SUBJECT: Toxic Materials Handling Facility

Attached is a copy of the bid tabulation on the above, indicating the low bidder for the construction of this project as EDS Construction. Their bid was \$277,300 total base bid. I have also included our office's project budget information for your consideration.

I spoke with Bill Cissel at NCI on Monday and he gave verbal approval to award to the low bidder. We recommend you award as soon as possible as the grant requires this project be under contract no later than July 1, 1981.

You will notice that the construction cost is well below the consultants estimates -- approximately 65,000. We intend to include, by modification, an emergency generator, additional fixed equipment, and plastering over concrete block walls. These additions were at the suggestion of Mr. Cissel and we are developing the changes with his direction and advice. He is approving the full grant amount until we have a new figure to submit. We will be attempting to include all program items acceptable to NCI.

Let me know when you wish to get together to review budget on this project.

cc: Paul Maupin  
Joycene Maroney  
Vic Scott

**ROGER JOHNSON · JAMES FORBERG ASSOCIATES / ARCHITECTS**  
1409 WILLOW STREET / MINNEAPOLIS / MINNESOTA 55403 / 612-871-7741  
ROGER T. JOHNSON / JAMES H. FORBERG / RICHARD H. SMITH

MEMORANDUM

Date: October 23, 1981  
Re: Toxic Materials Handling Facility  
University of Minnesota  
By: Richard H. Smith

The following is a tabulation of pertinent dates regarding this project as it relates to the delivery of laboratory furniture and fume hoods.

June 25, 1981	Contract awarded to EDS
July 7, 1981	Pre-construction Meeting
July 28, 1981	List of Subcontractors received by JFA
July 30, 1981	List of approval on subcontractors by JFA
August 7, 1981	Meeting at HSPO - Tom Kyle, Richard Smith, Jack Frerichs, Don Burda, Darrel Turnock and Representatives from Hamilton. (Casework shop drawings reported to be in mail and would arrive week of August 10)
August 19, 1981	Hamilton Shop Drawings received by JFA
September 1, 1981	Hamilton Shop Drawings returned "Not Approved"
September 29, 1981	Hamilton Shop Drawings received by JFA (Second submittal - included a number of drawings not included with first submittal)
October 6, 1981	Meeting with Darrel Turnock on casework shop drawings.
October 7, 1981	Hamilton shop drawings returned (Second submittal except for electrical drawings) "Approved as Noted - Submit Record copies".
October 15, 1981	Returned electrical drawings on fume hoods "Not Approved - Resubmit".

cc: EDS  
Baron  
Kyle



UNIVERSITY OF MINNESOTA  
TWIN CITIES

Health Sciences Planning Office  
Physical Planning  
Health Sciences Complex  
Box 726 Mayo Memorial Building  
Minneapolis, Minnesota 55455

(612) 373-8981

September 2, 1981

Laird Miller, Administrator  
Health Services  
Boynton Health Service  
East Bank Campus

Dear Mr. Miller:

Our office is managing the design and construction efforts involved with the implementation of the Toxic Materials Handling Facility in the West Wing of the Health Services Building. We have discovered a water leak against the west wall, north of the elevator shafts for the parking ramp. When it rains heavily, water penetrates the exterior wall below grade and floods the office of Leo Anderson. From there the water runs down pipe chases into the future laboratories now under construction in the basement.

It is imperative that this condition be corrected before our construction can continue. We have authorized the general contractor for the construction to excavate at the north west corner of the west wing addition to locate the problem. We need to act immediately and therefore cannot afford the time loss in turning this problem over to the University to correct; as they have a backlog of similar projects to address.

Hopefully the leak is only minor and inexpensive to repair; we will monitor progress to insure proper handling. We will expect your maintenance fund to reimburse the project for the actual costs, as this item is outside the scope of work described by the Grant to N.C.I. I hope to have an estimate of the costs within a week and I will relate them to you, I assume it will be much less than having the University do the work because the contractor is already at the site and we can work out details without a design staff. Of course all work will have University Engineer approval.

If you wish to discuss this approach or offer suggestions

Laird Miller  
Administrator  
Health Services  
September 2, 1981  
Page 2

please call either me (6-5073) or Paul Maupin.

Yours very truly,



Tom Kyle  
Assistant Health Sciences Planning Coordinator

TK:mka

cc: Paul J. Maupin  
file ✓



**ROGER JOHNSON · JAMES FORBERG ASSOCIATES / ARCHITECTS**

1409 WILLOW STREET / MINNEAPOLIS / MINNESOTA 55403 / 612-871-7741  
ROGER T. JOHNSON / JAMES H. FORBERG / RICHARD H. SMITH

MEMORANDUM

Date: October 23, 1981

Subject: Toxic Materials Handling Facility  
University of Minnesota

Present: Tony Baron, Tom Kyle, Fay Thompson and Ralph Wollan - U of M;  
Darrel Turnock, Haldeman and Homme; Jack Frerichs- EDS;  
and Richard Smith- Johnson Forberg Associates

The above met to review the status of casework and fume hood delivery on this project. The following items were reviewed.

- A memorandum dated October 23, 1981, prepared by Smith was distributed. This memorandum includes dates of the contract, meetings and shop drawing submittals.
- Kyle advised that Dr. Vesley is in charge of this project. The completion date is not critical. The facility will be used when ready.
- Turnock advised that casework delivery is running a minimum of 120 days. A firm delivery date can not be determined until Hamilton receives approved shop drawings. Shop drawings are now in the hands of Haldeman-Homme. It was not known if the electrical shop drawings on the hoods would affect the scheduling.
- Fume hoods will be pre-wired. Wiring diagrams will be submitted to Wally Mellum for his review once they are approved.
- Turnock will advise the architects of the tentative delivery date as soon as it is received from Hamilton. The architects will then distribute a letter on anticipated completion. The tentative completion date will be based on 60 days after casework delivery. The letter will go to Kyle with copies to Geretz and A. W. Johnson.
- Construction is now at a virtual stop. The majority of plastering work can be completed before casework is delivered. Some plaster patching is anticipated after casework installation. Mechanical and electrical work will be required in conjunction with the casework installation which is anticipated to take three weeks. All painting must be done after the casework installation. Installation of doors, hardware and sheet vinyl flooring is required after painting.
- The environmental room will be installed as soon as it arrives.
- Turnock assured those present that installers would be available as soon as the casework arrives.
- Wollan requested that architects send him a copy of the MSA filter brochure.
- Shop drawings on the fume hoods were reviewed by Wollan and Thompson. Wollan noted that additional vacuum outlets would be required at monitoring locations. A vacuum outlet should be added in the ceiling near the test ports and at the right side of each hood. Details of the proposed locations will be reviewed with Gausman and Moore and Wollan contacted if additional information is required. Wollan expressed concern over a steady vacuum pressure. Thompson commented that a critical orifice fitting should suffice.

**ROGER JOHNSON · JAMES FORBERG ASSOCIATES / ARCHITECTS**

1409 WILLOW STREET / MINNEAPOLIS / MINNESOTA 55403 / 612-871-7741  
ROGER T. JOHNSON / JAMES H. FORBERG / RICHARD H. SMITH

MEMORANDUM

Page 2

Toxic Materials Handling Facility

-It was noted that the removable end panels on the side of the fume hoods where countertops have high backsplashes and/or filters would have to be reduced in size to permit removal for access to services.

-Turnock advised that the hoods would not be tested in the factory prior to shipping. Hamilton has advised him they are confident that the hoods will operate as specified and factory testing will not be necessary.

*if used  
Baron  
factor* \* Baron requested that the architects have the mechanical engineer check existing vacuum system in the building to insure that the capacity is adequate to handle the new outlets being installed as well as the additional outlets proposed.

cc: Kyle  
Baron  
Thompson  
Wollan  
EDS  
G and M  
H and H



UNIVERSITY OF MINNESOTA  
TWIN CITIES

PF

Health Sciences Planning Office  
Physical Planning  
Health Sciences Complex  
Box 726 Mayo Memorial Building  
Minneapolis, Minnesota 55455  
(612) 373-8981

December 1, 1981

TO: Dr. Vesley  
FROM: Tom Kyle *Tom*  
SUBJECT: Toxic Materials Handling Facility

Attached is the most current letter from the architect which will define the schedule of events for the Toxic Materials Laboratory construction. A project completion date of May 14, 1982 is reasonable and possible.

Relative to the talks we've had I assume this meets with your approval; let me know if you have a problem with that date.

TK:mka

cc: Paul Maupin  
Tony Baron  
A.W. Johnson  
Ralph Wollan  
Faye Thompson

**ROGER JOHNSON · JAMES FORBERG ASSOCIATES / ARCHITECTS**

1409 WILLOW STREET / MINNEAPOLIS / MINNESOTA 55408 / 612-871-7741  
ROGER T. JOHNSON / JAMES H. FORBERG / RICHARD H. SMITH

November 17, 1981

Mr. Tom Kyle  
Health Science Planning Office  
726 Mayo  
Minneapolis, Minnesota 55455



Re: Toxic Material Handling Facility  
University of Minnesota

Dear Tom:

This is to follow up on our meeting of October 23, 1981 regarding delivery date for casework and fume hoods and projected project completion date.

In a telephone conversation with Mr. Jack Frerichs of EDS Construction on this date I was advised of the following information received from Mr. Darrel Turnock of Haldeman and Homme:

1. Casework and fume hoods are scheduled to be shipped at the end of February 1982.
2. Revised fume hood wiring diagrams are to be mailed from the factory today.
3. Final revised casework and fume hood drawings are to be mailed from the factory this week.

It is our opinion that the shipping date should be considered as tentative until written confirmation is received. In projecting a completion date, we are assuming a delivery date of approximately two weeks after the shipping date or Monday, March 15, 1982. Allowing 60 days for completion of the project after casework delivery, we are projecting a completion date of May 14, 1982. This may be optimistic as Mr. Turnock advised in the October 23, 1981 meeting that the fume hoods would not be tested before shipment. This may result in a longer period for final testing and adjustment extending the two week installation period projected by Mr. Turnock.

We will be in contact with you and Mr. Baron as soon as the shop drawings are received to advise you of the status of the work. As you are aware, there has been no work on this project for approximately 3 weeks and only minimal work is anticipated for the next three months as most remaining work is scheduled around the casework delivery.

Sincerely,

*Richard H. Smith*  
Richard H. Smith

RHS:b

cc: Baron  
A. W. Johnson (4)  
EDS

Haldeman Homme

G. & M

Toxic

**ROGER JOHNSON · JAMES FORBERG ASSOCIATES / ARCHITECTS**

1409 WILLOW STREET / MINNEAPOLIS / MINNESOTA 55408 / 612-871-7741  
ROGER T. JOHNSON / JAMES H. FORBERG / RICHARD H. SMITH

April 5, 1982

APR 06 1982

Mr. Paul Maupin  
Health Science Planning Office  
Box 726 Mayo  
Minneapolis, Mn 55455

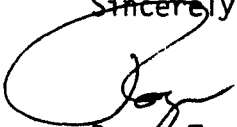
Dear Paul:

Some months back you indicated that Dow Chemical Company might have use for our services in designing laboratory facilities dealing with toxic materials. If you could provide me with the name of the person to contact or if you inquire on our behalf, it would be appreciated.

The progress on the Boynton facility is frustrating. Hamilton's repeated failure to produce on schedule has extended beyond any reasonable period. We are also concerned about their unwillingness to test check prior to shipment. Everyone's patience is wearing a little thin. It will be nice to be able to view the completed product.

As you may be aware, we are presently making studies for a Toxic Lab Remodeling for the Minneapolis Medical Research Foundation. We have designed about a dozen projects for them since 1969.

Sincerely,



Roger T. Johnson

RTJ:b

*Call:*

*Fred Sable*

*Dow Chemical  
Safety Dept.*

*Midland, Mich*

*Paul  
4/6/82*



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(612) 373-8981

PF

April 6, 1982

William E. Cissel, Jr.  
Project Engineer  
Research Facilities Branch  
Division of Resources, Centers,  
and Community Activities  
National Cancer Institute  
Room 3A05, Blair Building  
8300 Colesville Road  
Silver Spring, Maryland 20910

REF: 1 CO6 CA28136-01

Dear Bill:

Progress to date on the construction phase of the Toxic Materials Handling Facility at the University of Minnesota has been poor. This is due solely to the delays related to casework and fume hood shop drawing approvals. All submittals from Hamilton Industries (supplier) have been rejected more than twice for errors or omissions. We do now have a delivery date of April 26, 1982. This would indicate a revised project completion date of August 1, 1982.

We have been working on developing the fixed equipment list per your telephone conversations with me during the award period. The revised schedule indicates we should be requesting the contractor order the group I equipment by the end of April.

I am submitting the items for your approval, as listed below:

Mr. William Cissel, Jr.  
REF: 1 CO6 CA28136-01  
April 6, 1982  
Page 2

Item	Description	estim. cost
1.	Beam Calibrator/floor mount with source, scope, tripod and mirror (JL Shepherd & Assoc.)	\$15,245.00
2.	Ice Making Machine (Scotsman SF75WSJ-1) Floor mount, plumbed and wired	\$ 2,626.00
3.	Gamma Counting System In-counter/Built in (Beckman Instruments)	\$14,700.00

The cost estimates do not include the installation charges from the contractor and contractor mark-up. Installation will be a time and material basis on a change order.

As previously mentioned we would like to order this group I equipment by the end of April and look forward to your approval. Call me if you need further clarification. (612-376-5073).

Yours truly,



Thomas W. Kyle  
Asst. Health Sciences Planning Coordinator

TWK:mka

cc: Paul Maupin  
Dr. Vesley  
Ralph Wollan  
Faye Thompson



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Health Sciences Planning Office  
Physical Planning  
Health Sciences Complex  
Box 726 Mayo Memorial Building  
Minneapolis, Minnesota 55455  
(612) 373-8981

March 10, 1982

Dr. Donald Vesley  
Box 197 Mayo

Dear Don:

The attached modification details the work done to correct leaking problems at the northwest corner of Boynton Health Services at the Basement level and first floor.

It is my understanding, from Tom Kyle, that the department agreed to reimburse the project for this work which was done by the contractor.

Therefore, please transfer \$1,804.00 (\$1,686 plus \$118 for A/E fees) to 9950-9571-02. Please indicate on the transfer that this is for Modification G-6 to the Toxic Materials Handling Lab. A copy of the document should be sent to Joycene Maroney-Walstrom of my staff at Box 726 Mayo.

Thank you for your attention to this matter.

Very truly yours,

Paul J. Maupin  
Health Sciences Planning Coordinator

PJM:jmw

cc: Laird Miller



February 3, 1982

**MODIFICATION TO CONSTRUCTION DOCUMENTS**

Project No. University: 070-80-0080  
Federal: 1Co6 - CA28136-01

PROJECT Toxic Materials Handling Facility  
CONTRACTOR FDS Construction

When this Modification is signed, it shall become an order to proceed in accordance with the requirements of the Modification and the Contract Documents.

**UNIVERSITY OF MINNESOTA**

MOD. NO. G-6

MOD. REJECTED \_\_\_\_\_

CHANGE ORDER NO. \_\_\_\_\_

**CONTRACTS TO BE MODIFIED**

- General Construction
- Mechanical Work
- Electrical Work
- Vertical Transportation
- Casework
- \_\_\_\_\_
- \_\_\_\_\_

Cost change (Add) (Deduct) \$ 1686.26  
 No change in cost or time

A Change Order (will) (will not) be issued

Approved: Buell Maynard University Date 3/10/82  
Planning Coordinator

Approved: Jack Beres University Date 2/8/82  
Engineering & Construction

Approved: [Signature] Contractor Date 2/16/82

Recommended: Richard H. Smith Architect Date 2/3/82

Date 3/10/82

Date 2/8/82

Date 2/16/82

Date 2/3/82

Person Requesting Change: Tony Baron - University Field Inspector - Site Condition

Reason for Change: To correct leaking problem at northwest corner of Boynton

Health Service at Basement Level and First Floor.

**Description of Change:**

Investigative excavation revealed that the siamese connection located approximately 3'-0" above grade on the west wall appears to have been relocated from a location approximately 10'-0" below grade to permit additional fill required by later construction. Two 3" pipes extend down on the exterior of the building and are in a deteriorated condition. The sealing at the penetration through the wall are in poor condition permitting water to enter.

Remove pipes and cap siamese connection at lower level. Grout holes in wall tight. Clean and dampproof entire wall in excavated area. Install new siamese connection at grade and tie into standpipe above the first floor ceiling.



April 16, 1982

Reference No. 1 C06 CA28136-01

Thomas W. Kyle  
Asst. Health Sciences Planning Coordinator  
Box 726  
Mayo Memorial Building  
Minneapolis, Minnesota 55455

Dear Mr. Kyle:

I have reviewed the fixed equipment list you sent me and the items listed are approved.

Please advise me if you have other items of fixed equipment to purchase.

Sincerely,

A handwritten signature in cursive script that reads "William E. Cissel, Jr." is positioned above the typed name.

William E. Cissel, Jr.  
Project Engineer  
Research Facilities Branch



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Health Sciences Planning Office  
Physical Planning  
Health Sciences Complex  
Box 726 Mayo Memorial Building  
Minneapolis, Minnesota 55455  
(612) 373-8981

Tom

April 6, 1982

William E. Cissel, Jr.  
Project Engineer  
Research Facilities Branch  
Division of Resources, Centers,  
and Community Activities  
National Cancer Institute  
Room 3A05, Blair Building  
8300 Colesville Road  
Silver Spring, Maryland 20910

REF: 1 CO6 CA28136-01

Dear Bill:

Progress to date on the construction phase of the Toxic Materials Handling Facility at the University of Minnesota has been poor. This is due solely to the delays related to casework and fume hood shop drawing approvals. All submittals from Hamilton Industries (supplier) have been rejected more than twice for errors or omissions. We do now have a delivery date of April 26, 1982. This would indicate a revised project completion date of August 1, 1982.

We have been working on developing the fixed equipment list per your telephone conversations with me during the award period. The revised schedule indicates we should be requesting the contractor order the group I equipment by the end of April.

I am submitting the items for your approval, as listed below:

Mr. William Cissel, Jr.  
REF: 1 CO6 CA28136-01  
April 6, 1982  
Page 2

Item	Description	estim. cost
1.	Beam Calibrator/floor mount with source, scope, tripod and mirror (JL Shepherd & Assoc.)	\$15,245.00
2.	Ice Making Machine (Scotsman SF75WSJ-1) Floor mount, plumbed and wired	\$ 2,626.00
3.	Gamma Counting System In-counter/Built in (Beckman Instruments)	\$14,700.00

The cost estimates do not include the installation charges from the contractor and contractor mark-up. Installation will be a time and material basis on a change order.

As previously mentioned we would like to order this group I equipment by the end of April and look forward to your approval. Call me if you need further clarification. (612-376-5073).

Yours truly,



Thomas W. Kyle  
Asst. Health Sciences Planning Coordinator

TWK:mka

cc: Paul Maupin  
Dr. Vesley  
Ralph Wollan  
Faye Thompson



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(612) 373-8981

PF

June 16, 1982

Mr. Richard H. Smith  
Roger Johnson-James Forberg Associates  
1409 Willow Street  
Minneapolis, Minnesota 55403

RE: Toxic Materials Handling Facility  
University of Minnesota  
Letter of June 11, 1982 - Johnson/Forberg

Dear Dick:

Regarding the Fixed Equipment to be ordered by E.D.S. Construction, we have the following comments:

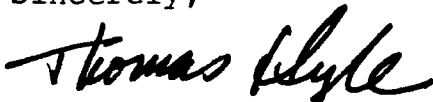
1. The Gamma 5500 Systems should also include "isosets for  $^{131}\text{I}$  and  $^{125}\text{I}$ , and one variable isoset".
2. The Calibrator should have additional shielding so it becomes a Model 78-2M. Additional Cost \$1,000.00
3. The entire Track System for the Calibrator is not needed - as you can imagine, a 30'-0" track would not fit in Lab. All that is required for this installation is the mirror and telescope assembly and the instrument plate with the grid on it. The user will put the plate on a rolling cart.
4. We assume the Contractor can handle the installation and should include that cost in their bid after they receive the rigging requirements from J.L. Shepherd.

Richard H. Smith  
Toxic Materials Handling  
June 16, 1982  
Page 2

5. The University does not approve bids that do not have a fixed installation fee. The contractor and supplier should compute the probable costs and include them in the modification cost. Of course adjustments can be made if a problem arises. A J.L. Shepherd Representative should give us a demonstration and set-up with charges included in bid.
6. The license from ARC is being amended. J.L. Shepherd can receive order for equipment but may not ship until a copy of amendment is received. We will supply it as soon as approved.

Lastly, Dick, please impress upon the contractor that prompt ordering will benefit all parties.

Sincerely,



Thomas Kyle  
Asst. Health Sciences Planning Coordinator

TK:mka

cc: Jerry Staiger  
Ralph Wollan  
Paul Maupin  
File ✓

**ROGER JOHNSON · JAMES FORBERG ASSOCIATES / ARCHITECTS**  
1409 WILLOW STREET / MINNEAPOLIS / MINNESOTA 55408 / 612-871-7741  
ROGER T. JOHNSON / JAMES H. FORBERG / RICHARD H. SMITH

June 11, 1982

Mr. Tom Kyle  
Health Science Planning Office  
726 Mayo  
Minneapolis, Mn 55455



Re: Toxic Materials Handling Facility  
University of Minnesota

Dear Tom:

Enclosed are three copies of a letter from EDS Construction and accompanying quotations from Beckmen Instruments and J. L. Shepherd and Associates for the Gamma Counter and Calibrator. Due to the technical nature of this equipment, Mr. Frerichs has requested that the quotation be reviewed by Mr. Wollan and Mr. Staiger prior to his placing an order.

Please note that the Calibrator quotation includes an indefinite amount for installation based on approximate air fare, an hourly rate and per diem expenses. The User should advise if the installation by the manufacturers is required or if they intend to perform the installation. The status of the license with the Atomic Regulatory Commission should also be verified.

Sincerely,

  
Richard H. Smith

RHS:b

cc: EDS

MAY 25 1982

740 Salem Street, Glendale, California 91203

213/245-0187

Irradiation & Calibration Equipment

Lead Shielding

Nuclear Applications

May 20, 1982

E. D. S. Construction Company  
P. O. Box 43570  
Saint Paul, Minnesota 55164

Attention: Jack Frerichs

Reference: Letter of Transmittal, 5/14/82, Request for Quotation from Roger Johnson James Forberg Associates/Architects with specifications covering equipment manufactured by J. L. Shepherd and Associates.

### QUOTATION

Item 1. One each, Model 78-1M Calibrator with a 10 Curie Cs-137 source and a 1 Curie Cs-137 source: \$9,095.00.

Note: If additional shielding is required so that the calibrator will be a Model 78-2M with the above sources, please add an additional \$1,000.00 for a total of \$10,095.00.

Item 2. Model 154 Attenuator System: \$4,195.00.

✓ Item 3. Model 150 ~~Track System, including 30' track, rolling instrument table, mirror and telescope assembly: \$6,950.00.~~

*& instrument plate*

Item 4. Shipping, via motor freight: \$450.00

Item 5. Installation charges on a cost incurred basis:

- Air fare for installation engineer: approximately \$600.00.
- Installation Engineers time (including air travel time): \$40.00 per hour.
- Per diem expenses, including rented automobile, hotel and food as incurred.
- Rigging: as required to move unit into room and to mount onto the base: cost incurred basis. We suggest that rigging arrangements

*now heavy -*



E.D.S. Construction Company

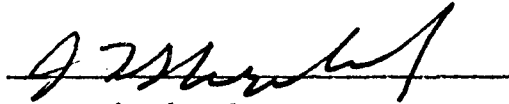
Jack Frerichs

Quotation

May 20, 1982

Page 2

d. continued. be made by your company as to reduce installation time.  
We will send rigging requirements in detail when required.

A handwritten signature in black ink, appearing to read 'J.L. Shepherd', is written over a horizontal line.

J.L. Shepherd

JLS/mfs

# BECKMAN

BECKMAN INSTRUMENTS, INC  
ANALYTICAL INSTRUMENTS SALES AND SERVICE DIVISION

ADDRESS ALL ORDERS  
AND CORRESPONDENCE  
TO THIS ADDRESS →

7262 Washington Avenue South  
Eden Prairie, Minnesota 55344  
Roger L. Eggen 612/944-1350

DATE April 19, 1982

TO: E.D.S. Construction Company  
P. O. Box 43570  
St. Paul, MN 55164

PAGE 1 OF 1

QUOTATION NO MINN-0734.1

ATTENTION: Mr. Jack Frerichs  
YOUR REFERENCE NO: Letter of 5-11-82

PLEASE REFER TO THIS QUOTE NO.  
IN FUTURE CORRESPONDENCE

ITEM	QTY.	PART NO	DESCRIPTION	UNIT PRICE	NET PRICE
1.	1	695300	<u>Gamma 5500 System</u>  Includes:  -- Integral printer, multi-user tray system for tubes to 16 x 87 mm -- 0 to 2MEV range, low level reject, manual gain control, background subtract -- 10 cm lead shielding around detector and between conveyor and detector -- Manual sampling capability		\$14,500.00
2.	1	584281	-- <i>modules for <sup>137</sup>I &amp; <sup>137</sup>I + one variable isocut (isocut)</i> <u>Second Counting Channel</u>		1,700.00
			Estimated Shipping Costs		200.00
			Above price firm for 60 days		
			Reference: University of Minnesota Toxic Materials Handling Facility Boynton Hall Minneapolis, MN 55455		

PROPOSAL FOR ACCEPTANCE WITHIN 60 DAYS OF ABOVE DATE  
SHIPMENT: 60 days DAYS FROM RECEIPT OF ORDER  
TERMS: F.O.B. Irvine California  
Net 30 days

This proposal is subject to buyer's acceptance of the terms and conditions of sale appearing on the reverse side hereof

BECKMAN INSTRUMENTS, INC.

Signed: *Roger L. Eggen*  
Name: Roger L. Eggen, Sales Representative

This proposal is made contingent upon the acceptance by Buyer without change or modification of the provisions of this proposal including all insertions on the face hereof and of the terms and conditions of sale on the reverse side hereof, unless specifically accepted by Beckman in writing, contrary or additional terms or conditions or changes or specifications imposed by Buyer's Purchase Order if any or otherwise shall not bind Beckman. Issuance of Buyer's Purchase Order against this quotation or the acceptance of the products on any part thereof offered hereby, shall be deemed an acceptance of the terms and conditions of this quotation including



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TWIN CITIES

Health Sciences Planning Office  
Physical Planning  
Health Sciences Complex  
Box 726 Mayo Memorial Building  
Minneapolis, Minnesota 55455  
(612) 373-8981

P<sup>2</sup>

June 24, 1982

TO: Clint Hewitt

FROM: Paul J. Maupin *Paul*

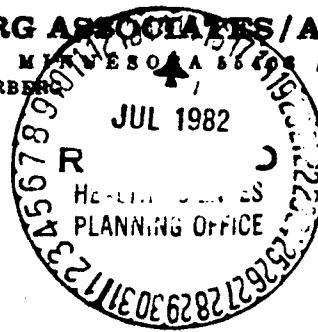
SUBJECT: Toxic Materials Handling Facility

As you are aware, the subject project came in under budget and we have had to add modifications and group I equipment in order to satisfy the NIC grant. We feel that it would be in the best interest of the project to increase the moveable equipment budget from \$18,200 to \$26,000±. This will not affect the grant but will be funded from the Central Administration funds. If you have any problem with this, please let us know before the requisitions are sent to purchasing next week. Thanks.

PJM:jmw

**ROGER JOHNSON · JAMES FORBERG ASSOCIATES / ARCHITECTS**  
1409 WILLOW STREET / MINNEAPOLIS / MINNESOTA 55404 / 612-871-7741  
ROGER T. JOHNSON / JAMES H. FORBERG / RICHARD H. SMITH

July 9, 1982



Mr. Clinton N. Hewitt  
Assistant Vice President  
for Physical Planning  
321 Morrill Hall  
University of Minnesota  
Minneapolis, Mn 55455

Re: Toxic Materials Handling Facility  
University of Minnesota

Dear Mr. Hewitt:

I am writing to express my concerns regarding the cost overruns we are experiencing on this project due to continuing delays in the construction. The delays have been primarily due to the failure of one subcontractor to deliver materials, a condition which is beyond our control. A brief chronology of the critical dates is as follows:

- a. Bids received on June 9, 1981 (The low bid was approximately 20% below the project budget).
- b. Contracts were awarded June 25, 1981 with a substantial completion date of January 1, 1982.
- c. Enclosed are copies of two Memoranda both dated October 23, 1981 documenting delays in the delivery of laboratory furniture and submittal of shop drawings from the time of contract award through October 23, 1981.
- d. Pertinent dates subsequent to the October 23, 1981 meeting are as follows:
  1. November 17, 1981 - Haldeman-Homme advised casework and fume hoods scheduled for shipment the end of February 1982.
    - Revised electrical shop drawings for hoods being mailed on November 17, 1981.
    - Final revised shop drawings submitted that week.
  2. December 1, 1981 - Electrical shop drawings for fume hoods received and forwarded to electrical engineer. (This was approximately one month prior to the scheduled project completion).
  3. December 9, 1981 - Electrical shop drawings for fume hoods forwarded to U of M (Wally Mellum) for his review.
  4. January 6, 1982 - Shop drawings on fume hoods and casework returned to contractor with letter documenting delays to date. (copy of letter enclosed).

**ROGER JOHNSON · JAMES FORBERG ASSOCIATES / ARCHITECTS**

1409 WILLOW STREET / MINNEAPOLIS / MINNESOTA 55403 / 612-871-7741  
ROGER T. JOHNSON / JAMES H. FORBERG / RICHARD H. SMITH

Mr. Clinton N. Hewitt

Page 2

July 9, 1982

5. January 12, 1982 - Haldeman Homme advised scheduled delivery date for casework is March 8, 1982
6. February 9, 1982 - Haldeman Homme advised casework delivery would not be on March 8, 1982. No delivery date or reason for delay given.
7. March 9, 1982 - Project completion date of July 1, 1982 projected based on casework delivery by May 1.  
- Casework scheduled for shipment within week. Fume hoods scheduled for April 26, 1982.
8. April 20, 1982 - Casework delivered to Haldeman Homme warehouse. Fume hoods still scheduled to be shipped April 26, 1982.
9. May 4, 1982 - Hamilton representative attended progress meeting. Refused to explain reasons for delays "as it was not in their best interest."  
- Fume hoods shipped May 2, 1982 and delivered to site that week.

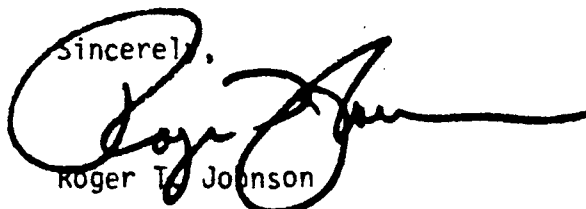
At this time, substantial completion is approximately one month away. Current delays are due to items related to casework and fume hood installation, a change in the painting subcontractor due to the delays and other related items. The lengthy delays have resulted in a number of stoppages in the work and a resultant loss of coordination.

There have been 17 progress meetings to date. Ten of these occurred after January 1, 1982 when the project was scheduled for substantial completion. In addition to the progress meetings, there has been a considerable amount of time spent on job site meetings, correspondence and related matters with the casework supplier and contractor. Additional time will be required for progress meetings, final inspection and project closeout.

The numerous delays in construction documented above and by the enclosures has resulted in a substantial cost overrun by our firm. An adjustment in our fee of \$3200 would appear to be justified by the above. This would constitute approximately a 10% increase in the total fee.

Your consideration and response to this request will be appreciated.

Sincerely,



Roger T. Johnson

RTJ:B  
enc.

cc: Paul Maupin



UNIVERSITY OF MINNESOTA  
TWIN CITIES

Office of the Assistant Vice President

Vac. problem

Physical Planning  
340 Morrill Hall  
100 Church Street S.E.  
Minneapolis, Minnesota 55455



July 15, 1982

Mr. Roger T. Johnson  
Roger Johnson, James Forberg Associates/Architects  
1409 Willow Street  
Minneapolis, Minnesota 55403

Dear Mr. Johnson:

I'm writing to acknowledge receipt of your letter of July 9, 1982 regarding your concerns about the cost overruns associated with continuing delays in the construction of the Toxic Materials Handling Facility. The chronology of the contractor's performance on this project is not expected nor acceptable to the University. I have asked the staff for a report on this project and will schedule a meeting to review this matter. Regarding your request for additional fees, as soon as I have completed my review of this matter, I will respond to your request.

Thank you for bringing this matter to my attention.

Sincerely,

Clinton N. Hewitt  
Assistant Vice President  
Physical Planning

CNH/hd

cc: ✓ Paul Maupin