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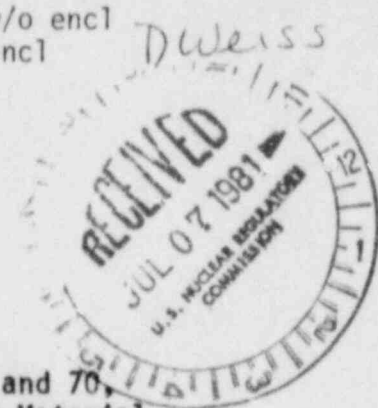
JUN 19 1981

Distribution:
Docket File 70-8

Docket No. 70-8
License No. SNM-7, Amendment No. 17
License No. 34-6854-5, Amendment No. 26

License NO. 34-6854-4 file
DCS SHO IE III CPeck
NMSS IE (3)
FCAF BBrooks w/o encl
PDR (attached) ACabell w/o encl
RECunningham w/o encl
TFCarter w/o encl
LCRouse
JEAyer
WBurkhardt
RTKratzke
TSchultze

Battelle Columbus Laboratories
ATTN: Mr. Harley L. Toy
NRC Licensing Coordinator
505 King Avenue
Columbus, Ohio 43201



Gentlemen:

Pursuant to Title 10, Code of Federal Regulations, Parts 30 and 70, Byproduct Material License No. 34-6854-5 and Special Nuclear Material License No. SNM-7 are hereby amended to incorporate the decontamination/ decommissioning plans described in your submittals of November 22 and December 15, 1978; April 25, 1979; and October 1 and December 15, 1980. Accordingly, Condition No. 22 is added to License No. 34-6854-5 and Condition No. 26 is added to License No. SNM-7 to read as follows:

"The licensee shall maintain a financial plan for decommissioning of the Battelle Hot Cell Laboratory (JN-1) in accordance with the provisions described in the licensee's submittals of November 22 and December 15, 1978; April 25, 1979; and October 1 and December 15, 1980. The annual review of the financial plan shall be documented by the licensee and the documentation maintained for review by NRC upon request. At end of life of the Battelle Hot Cell Laboratory, the licensee shall decontaminate the facility and grounds in accordance with the general decommissioning plans contained in the above referenced submittals. Subsequent to the completion of the ongoing decontamination of the licensee's Plutonium Laboratory (JN-4), the licensee shall submit a decommissioning plan and an appropriate financial plan for NRC review and approval before the use of unsealed radioactive materials may be initiated in JN-4. Alternatively, in lieu of such a decommissioning plan and financial arrangements, the licensee may propose for NRC review and approval use of radioactive materials in JN-4 demonstrating that such use is of a nature that the decommissioning and financial plan are unwarranted."

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JUN 19 1981

In addition both licenses are amended to permit periodic increases in the Hot Cell Laboratory fuel storage pool due to non-routine operations. Accordingly, Condition 18 of License No. SNM-7 is revised and Condition 23 is added to License No. 34-6854-5 to read as follows:

"The upper limits of radioactivity in the fuel storage pool during routine operations shall be 10^{-3} uCi/ml beta-gamma and 10^{-4} uCi/ml alpha. For non-routine operations the upper limits of radioactivity in this pool shall be 5×10^{-3} uCi/ml beta-gamma and 5×10^{-3} uCi/ml alpha. The period for non-routine operation and the procedures employed during that period shall be as described in your letter to NRC dated October 31, 1980."

All other conditions of these licenses shall remain the same.

For convenience and ease of reference, we have attached copies of the Battelle submittals referenced in the above amendments to License No. SNM-7 and License No. 34-6854-5. I have also attached a copy of my letter of June 29, 1979 to Battelle regarding your decommissioning and financial plans. Please note that the NRC studies referred to in the second paragraph of my letter are continuing and, as stated in the letter, may result in necessary modifications to the decommissioning plans adopted through these amendments.

FOR THE NUCLEAR REGULATORY COMMISSION

Original signed by
Leland C. Rouse

Leland C. Rouse, Chief
Advanced Fuel and Spent Fuel
Licensing Branch
Division of Fuel Cycle and
Material Safety

Enclosures: As stated

cc: Mr. James Buchar
Contracts Management Office
U.S. Department of Energy

OFFICE	FCAF						
SURNAME	LCRouse:flb						
DATE	6/10/81						

JUN 29 1979

Docket No. 70-8

Battelle Columbus Laboratories
ATTN: Mr. Harley L. Toy
NRC Licensing Coordinator
505 King Avenue
Columbus, Ohio 43201

Gentlemen:

We have completed our review of the conceptual decommissioning plan with its cost estimate for the Battelle Hot Laboratory (JN-1) and the related financial plan, as described in your submittals of November 22, 1978, December 15, 1978 and April 25, 1979. These plans were submitted at our request, reflecting our position that such plans are required for major licensed facilities. We agree that your cost estimate for decontamination of the facility to enable its release for unrestricted use is reasonable and the proposed financial plan for assuring the availability of the required funds is acceptable. Accordingly, as I discussed with your Dr. Kenneth Brog, these commitments will be made conditions of License No. SNM-7 and License No. 34-6854-5 through license amendments as soon as you inform us that you have completed the steps necessary to implement the proposed financial plan. We have under review your application for license renewal (which would consolidate these two licenses) and at such times that licensing action is taken on this request, these same license conditions will be incorporated into the renewed license.

As license conditions, the provisions of the financial plan will be subject to periodic review by the NRC. In this regard, we note that the description of the financial plan submitted by your letter of November 22, 1978 includes a commitment for annual review by Battelle. Documentation of these reviews must be maintained for review by NRC upon request. Any audits performed by the Defense Contract Audit Agency (DCAA) may also be used by the NRC in its reviews to confirm that the provisions of the plan are being carried out as described. Also as published in the Federal Register on March 13, 1978 (42 FR 10370), the NRC has underway extensive studies intended to provide a data base for developing decommissioning criteria for nuclear facilities. The Commission is considering amending its regulations to provide more specific guidance on decommissioning criteria for NRC licensees. The conditions added to your licenses, as discussed above, may be subject to modification depending upon the requirements that are developed.

7908130219

JUN 29 1979

With respect to the Plutonium Laboratory (JN-4), we recognize that you are presently decontaminating this facility to a condition that would enable its release for unrestricted use. As we discussed, we also plan to condition License No. SNM-7 to require submittal of a decommissioning plan and appropriate financial plan for our review and approval before any subsequent use of unsealed radioactive materials may be initiated in the facility. In this regard, we recommend that you inform our Office of Inspection and Enforcement, Region III, at the time decontamination of the facility is complete to provide opportunity for an NRC confirmation survey as to the contamination status of the facility.

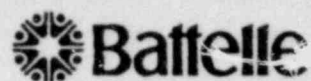
If you have any questions concerning these matters, please let me know.

Sincerely,

Original Signed by
Leland C. Rouse

Leland C. Rouse, Acting Chief
Fuel Reprocessing and Recycle Branch
Division of Fuel Cycle and
Material Safety

cc: Mr. James Buchar
Contracts Management Office
U.S. Department of Energy



Columbus Laboratories
505 King Avenue
Columbus, Ohio 43201
Telephone (614) 424-6424
Telex 24-5454



October 31, 1980

Mr. James Ayer
Advanced Fuel and Spent Fuel
Licensing Branch
Mail Stop 396-SS
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Dear Mr. Ayer:

Docket 70-8

This is a request for an amendment to Battelle-Columbus Licenses SNM-7 and Byproduct No. 34-6854-5 to provide for routine and non-routine operating limits for radioactivity in the fuel storage pool at our Hot Cell Laboratory. You will recall that we requested an amendment back on August 17, 1978, to authorize a temporary departure from the upper limits for radioactivity in our hot cell storage pool. Subsequent to this request the beta-gamma and alpha concentration levels stabilized, thereby negating the need for a license amendment. Accordingly, we now formally withdraw that requested amendment.

At this time we request an amendment to modify our existing License Condition No. 18 which specifies upper limits of radioactivity in the fuel storage pool at the Hot Cell Laboratory. The present license condition specifies the upper limits for radioactivity in the fuel storage pool at 10^{-3} $\mu\text{Ci/ml}$ beta-gamma and 10^{-4} $\mu\text{Ci/ml}$ alpha. We propose a modification to these upper limits to provide for routine and non-routine operations in the fuel storage pool. The modifications would provide upper limits for radioactivity under the following conditions.

Routine Operations

The current limits of 10^{-3} $\mu\text{Ci/ml}$ beta-gamma and 10^{-4} $\mu\text{Ci/ml}$ alpha would be in effect.

Non-Routine Operations

Authorization to conduct non-routine pool operations for a period of not more than 45 days at the upper level of 5×10^{-2} $\mu\text{Ci/ml}$ beta-gamma and 5×10^{-3} $\mu\text{Ci/ml}$ alpha. Non-routine operations would stipulate the following procedures:

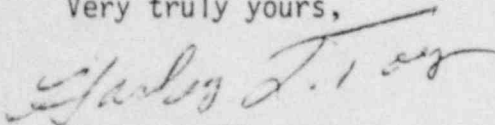
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- (1) Work requests (authorization to perform operations having radiological safety implications) shall be utilized during non-routine operations. The work request is designed to assure that personnel performing tasks are made fully aware of the specific radiological safety considerations. The work request must be approved by the Laboratory Operations Manager and the resident Health-Physicist.
- (2) The pool lid cover will be in place during down time and after hours.
- (3) Radiation monitoring will be performed at least twice weekly around the perimeter of the pool and the area will be posted stating both radiation levels with the steel tornado cover in place and each time the cover is removed.
- (4) Pool water samples will be collected and analyzed at least weekly.
- (5) The resin bags of ion columns will be replaced when readings of 300 mr/hr at one foot are reached.

Authorization to conduct non-routine operations at the upper level of 5×10^{-2} $\mu\text{Ci/ml}$ beta-gamma and 5×10^{-3} $\mu\text{Ci/ml}$ alpha would accommodate pool cleaning and maintenance, examination and maintenance of storage racks, and handling of additional fuel assemblies. Such activities invariably increase pool contamination due to disturbance of accumulated sediment. The 45-day time frame authorizing non-routine operations would provide the necessary time to stabilize the pool water concentrations. Strict health-physics monitoring and surveillance procedures will be employed to assure a safe radiological environment during those periods of non-routine operations.

We assume the information outlined above is satisfactory and will enable you to proceed with your review of this requested amendment. Should you require additional information for your evaluation, please call on us.

Very truly yours,



Harley L. Toy
NRC Licensing Coordinator

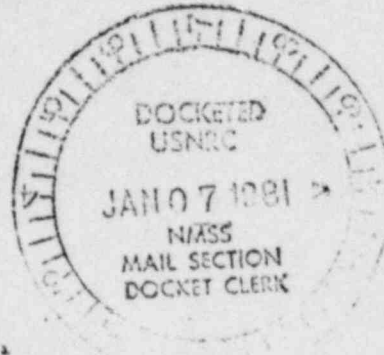
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Columbus Laboratories
505 King Avenue
Columbus, Ohio 43201
Telephone (614) 424-6424
Telex 24-5454



December 15, 1980



Mr. Leland C. Rouse
Advanced Fuel and Spent Fuel Licensing
Division of Fuel Cycle and Material Safety
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Dear Mr. Rouse:

Docket 70-8; Financial Decommissioning Plan
for Battelle's Columbus Laboratories

This letter is to inform you that in accordance with the understanding Battelle has with the Departments of Energy and Defense, and in anticipation of the amendment to Battelle's Special Nuclear Materials License, Battelle has established the two trusts described in my letter to you dated October 1, 1980.

Copies of the two executed trust documents are enclosed. With the exception of several minor wording changes suggested by the trust company, the documents are substantially identical to the drafts previously submitted. If I can provide any additional information, please contact me.

Very truly yours,

Harley L. Toy
Licensing Coordinator

HLT:lba

Enc. (2)

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Industrial Trust

TRUST AGREEMENT

This Trust Agreement is entered into this 1st day of December, 1980, by Battelle Memorial Institute ("Battelle") as trustor and the Bank One Trust Company, NA as trustee to receive and hold certain payments from sponsors of industrial research and development carried on by Battelle.

Purpose

Battelle owns nuclear research facilities in West Jefferson, Ohio, (the "Facilities") which, in the normal course of operations, are contaminated with radioactive matter. After a certain period of usage, these Facilities will have to be decontaminated and decommissioned. A license to operate the Facilities has been issued by the United States Nuclear Regulatory Commission ("NRC"). Battelle is now being required to demonstrate the financial viability to decontaminate and decommission the Facilities as a condition for future operations. In conjunction with various Government agencies including the Department of Defense ("DOD") and the Department of Energy ("DOE") of the United States, who sponsor a substantial volume of the research and development at the Facilities, Battelle created such a plan for identifying the costs of decontamination and for allocating the financial burden of those costs to all users of the Facilities, both Governmental and industrial, and for returning any excess funds to the users after decontamination and decommissioning is complete. The plan so developed is to be made a specific condition of the license by the NRC.

The plan requires the users to remit an allocable share of decommissioning costs when they remit their other payments for usage of the Facilities. The license will additionally require that funds collected be held in trust. This trust is being created to hold the funds of industrial sponsors separately from those of DOE and DOD, as required by those agencies, and to provide assurance that: the amounts deposited in trust are invested in high quality instruments or securities; the amounts deposited are not comingled with Battelle's own funds; the earnings on the amounts deposited are fully segregated from Battelle's earnings on its own funds; the amounts deposited are protected from the general creditors of the industrial sponsors and Battelle; and the trust assets are held solely for the benefit of the industrial sponsors of research at the Facilities.

All amounts received by Battelle from industrial users of the Facilities as their allocable share of decommissioning costs of the Facilities are to be paid over to the trustee by Battelle, to be invested until actually needed for decontamination of the Facilities. No funds may be returned to the industrial users until ultimate decommissioning is complete, unless the NRC consents to the return of funds.

Powers and Duties of the Trustee

The powers and duties of the trustee are strictly limited to receiving, holding, investing, and disbursing trust funds for the purposes described herein. The duty of the trustee to make periodic accounting other than the final accounting, shall be satisfied by the proper rendition of the monthly reports prescribed herein.

Trustee's Compensation

The trustee shall receive a fee for acting as trustee as provided herein, to be agreed upon by the trustee and Battelle. This fee may be paid directly out of the trust funds.

Investment of Trust Funds

Battelle shall, from time to time, provide specific instructions to the trustee regarding the investment of trust funds. In accordance with the specific instructions, trust funds may be invested in:

- demand notes of issuers with a rating of A-1 or P-1.
- commercial paper with a rating of A-1 or P-1.
- certificates of deposit or banker's acceptances issued by a depository which has at least \$50 million capital and surplus.
- securities issued or guaranteed by the United States, its agencies or instrumentalities.
- municipal bonds rated in the top three categories (AAA, AA, A) by Standard & Poor's Corporation.
- corporate bonds rated in the top three categories (AAA, AA, A) by Standard & Poor's Corporation.
- preferred stock with a sinking fund rated as "BBB" or better by Standard & Poor's Corporation, and preferred stock without a sinking fund rated as "A" or better by Standard & Poor's Corporation.

The investments shall be consistent with projected cash flow needs for actual decommissioning as anticipated by Battelle. Trust funds may not be invested in securities issued by Battelle or any of the industrial sponsors of research at the Facilities or any entity related to Battelle or the sponsors.

In the absence of instructions from Battelle, the trustee shall invest the funds in those short-term time deposits offered by the trustee which bear the highest rate of interest.

Removal of the Trustee

Battelle may remove as trustee the Bank One Trust Company, NA or any successor, with or without cause. Such removal shall be effective upon receipt by the trustee of written notice of removal, a written appointment of the successor trustee, and such successor's written acceptance of the trust. Any successor must be a national bank with at least \$500,000,000 in assets or a trust company with at least \$500,000,000 in managed assets.

Upon removal, the removed trustee shall deliver all trust funds in its possession to the successor trustee and shall render a final accounting. Thereafter, the removed trustee shall have no further powers or duties as trustee.

Termination

The trust shall end when all of the trust funds have been disbursed and there are no further deposits to be made into the trust.

Periodic Accounting

The trustee will provide an accounting of receipts, disbursements, and earnings on a monthly basis.

Final Accounting

Upon termination of the trust or upon appointment of a successor trustee, the trustee shall render a final accounting to Battelle and, upon request, to any sponsors of industrial research at the Facilities.

Trust Disbursements

The trustee is authorized to make disbursement for reasonable expenses of trust administration, including taxes. The trustee may disburse money from the fund to Battelle to pay those costs of trust administration which are not incurred by or assessed against the trust directly, provided that Battelle certifies to the trustee that those costs are directly related to the operation of the trust. Such costs might include taxes relating to trust deposits or income, and expenditures required of Battelle or others because of the existence of the trust.

Battelle will, from time to time, direct the trustee to disburse money from the fund to pay for expenses associated with decommissioning the Facilities. Disbursements for decommissioning may only be made in accordance with a decommissioning plan approved by NRC. Battelle will provide to the trustee copies of the decommissioning plan and NRC's approval, and must certify that each such disbursement is in accordance with the plan.

Upon completion of all decontamination and decommissioning, Battelle will direct the trustee to make a final disbursement of funds. Such final disbursement may only be made to industrial users of the Facilities, in proportion to their respective share of trust corpus and allocated earnings. If any entity which contributed to the fund is not in existence at that time, then payment shall be made in accordance with a letter designating a successor in interest. If no such letter is on file, then payment will be made to any charitable organization, contributions to which are deductible under the Internal Revenue Code, selected by Battelle.

Nonassignment

Battelle may not assign its rights under this Agreement, or direct distributions in any manner not expressly provided for, unless otherwise agreed to by the Government. To the fullest extent permissible by law, no legal process may be used to divert trust assets from their appropriate utilization for decommissioning as provided herein.

Indemnity of Trustee

Battelle agrees to hold the trustee harmless from any expense or liability which the trustee may incur in performing its duties as trustee, except for expenses or liabilities due to its own negligence, willful misconduct, or unlawful act.

Additional Terms

The trust has been accepted by the trustee in and will be administered in the State of Ohio, and this Agreement shall be interpreted in accordance with Ohio law.

If any provision of this Agreement shall be invalid or unenforceable, the remaining provisions shall continue to be fully effective.

Executed this 1st day of December, 1980.

Battelle Memorial Institute - Trustee

By: Maurice G. Stark
Maurice G. Stark
Vice President-Finance
and Treasurer

Executed this 1st day of December, 1980.

Bank One Trust Co., NA - Trustee

By: G. Ronald Henderson
G. Ronald Henderson
Vice President

Signed in the presence of:

[Signature]
H. Paris Stallings

Signed in the presence of:

Rene Anderson
[Signature]

TMC/prw

TRUST AGREEMENT

This Trust Agreement is Entered into this 1st day of December, 1980, by Battelle Memorial Institute ("Battelle") as trustor and Bank One Trust Company, NA as trustee to receive and hold certain payments from the United States Government.

Purpose

Battelle owns nuclear research facilities in West Jefferson, Ohio, (the "Facilities") which, in the normal course of operations, are contaminated with radioactive matter. After a certain period of usage, these Facilities will have to be decontaminated and decommissioned. A license to operate the Facilities has been issued by the United States Nuclear Regulatory Commission ("NRC"). Battelle is now being required to demonstrate the financial viability to decontaminate and decommission the Facilities as a condition for future operations. In conjunction with various Government agencies including the Department of Defense ("DOD") and the Department of Energy ("DOE") of the United States, who sponsor a substantial volume of the research and development at the Facilities, Battelle created such a plan for identifying the costs of decontamination and for allocating the financial burden of those costs to all users of the Facilities, both Governmental and industrial, and for returning any excess funds to the users after decontamination and decommissioning is complete. The plan so developed is to be made a specific condition of the license by the NRC.

The plan requires users to remit an allocable share of decommissioning costs when they remit their other payments for usage of the Facilities. The license will additionally require that funds collected be held in trust. DOE and DOD further require that the payments so collected from the Government be held separately, and that after the facilities are completely decommissioned, any excess funds be returned to the Government.

This trust is being created for the deposit of such remittances from governmental users, and to provide assurance that: the amounts deposited in trust are invested in high quality instruments or securities; the amounts deposited are not comingled with Battelle's own funds; the earnings on the amounts deposited are fully segregated from Battelle's earnings on its own funds; the amounts deposited are protected from Battelle's general creditors; the trust assets are held solely for the benefit of the governmental users of the facilities; the assets and earnings of the trust are not subject to state and federal income or ad valorem taxes.

All amounts received by Battelle from the Governmental users of the Facilities as their allocable share of decommissioning costs of the Facilities are to be paid over to the trustee by Battelle, to be invested until actually needed for decontamination of the Facilities. No funds may be returned to the Governmental users until ultimate decommissioning is complete, unless the NRC consents to the return of funds.

Powers and Duties of the Trustee

The powers and duties of the trustee are strictly limited to receiving, holding, investing, and disbursing trust funds for the purposes described herein. The duty of the trustee to make periodic accountings, other than the final accounting, shall be satisfied by the proper rendition of the monthly reports prescribed herein.

Trustee's Compensation

The trustee shall receive a fee for acting as trustee as provided herein, to be agreed upon by the trustee and Battelle. This fee may be paid directly out of the trust funds.

Investment of Trust Funds

Battelle shall, from time to time, provide specific instructions to the trustee regarding the investment of trust funds. In accordance with the specific instructions, trust funds may be invested in:

- demand notes of issuers with a rating of A-1 or P-1.
- commercial paper with a rating of A-1 or P-1.
- certificates of deposit or banker's acceptances issued by a depository which has at least \$50 million capital and surplus.
- securities issued or guaranteed by the United States, its agencies or instrumentalities.
- municipal bonds rated in the top three categories (AAA, AA, A) by Standard & Poor's Corporation.
- corporate bonds rated in the top three categories (AAA, AA, A) by Standard & Poor's Corporation.
- preferred stock with a sinking fund rated as "BBB" or better by Standard & Poor's Corporation, and preferred stock without a sinking fund rated as "A" or better by Standard & Poor's Corporation.

The investments shall be consistent with projected cash flow needs for actual decommissioning as anticipated by Battelle. Trust funds may not be invested in securities issued by Battelle or any of the industrial sponsors of research at the Facilities or any entity related to Battelle or the sponsors.

In the absence of instructions from Battelle, the trustee shall invest the funds in those short-term time deposits offered by the trustee which bear the highest rate of interest.

Removal of the Trustee

Battelle may remove as trustee the Bank One Trust Company, NA or any successor, with or without cause. Such removal shall be effective upon receipt by the trustee of written notice of removal, a written appointment of the successor trustee, and such successor's written acceptance of the trust. Any successor must be a national bank with at least \$500,000,000 in assets or a trust company with at least \$500,000,000 in managed assets.

Upon removal, the removed trustee shall deliver all trust funds in its possession to the successor trustee and shall render a final accounting. Thereafter, the removed trustee shall have no further powers or duties as trustee.

Termination

The trust shall end when all of the trust funds have been disbursed and there are no further deposits to be made into the trust.

Periodic Accounting

The Trustee will provide an accounting of receipts, disbursements, and earnings on a monthly basis.

Final Accounting

Upon termination of the trust or upon appointment of a successor trustee, the trustee shall render a final accounting to Battelle and, upon request, to any Government agency which sponsors research at the Facilities.

Trust Disbursements

The trustee is authorized to make disbursement for reasonable expenses of trust administration, including taxes. The trustee may disburse money from the fund to Battelle to pay those costs of trust administration which are not incurred by or assessed against the trust directly, provided that Battelle certifies to the trustee that those costs are directly related to the operation of the trust. Such costs might include taxes relating to trust deposits or income, and expenditures required of Battelle or others because of the existence of the trust.

Battelle will, from time to time, direct the trustee to disburse money from the fund to pay for expenses associated with decommissioning the Facilities. Disbursements for decommissioning may only be made in accordance with a decommissioning plan approved by NRC. Battelle will provide to the trustee copies of the decommissioning plan and NRC's approval, and must certify that each such disbursement is in accordance with the plan.

Upon completion of all decontamination and decommissioning, Battelle will direct the trustee to make a final disbursement of funds. Such final disbursement may only be made to the Federal Government, with the concurrence of the cognizant Government Administrative Contracting Officer.

Nonassignment

Battelle may not assign its rights under this Agreement, or direct distributions in any manner not expressly provided for, unless otherwise agreed to by the Government. To the fullest extent permissible by law, no legal process may be used to divert trust assets from their appropriate utilization as provided herein.

Indemnity of Trustee

Battelle agrees to hold the trustee harmless from any expense or liability which the trustee may incur in performing its duties as trustee, except for expenses or liabilities due to its own negligence, willful misconduct, or unlawful act.

Additional Terms

This trust has been accepted by the trustee in and will be administered in the State of Ohio, and this Agreement shall be interpreted in accordance with Ohio law.

If any provision of this Agreement shall be invalid or unenforceable, the remaining provisions shall continue to be fully effective.

Executed this 1st day of December, 1980.

Battelle Memorial Institute - Trustee

By: Maurice G. Stark
Maurice G. Stark
Vice President-Finance
and Treasurer

Executed this 1st day of December, 1980.

Bank One Trust Co., NA - Trustee

By: G. Ronald Henderson
G. Ronald Henderson
Vice President

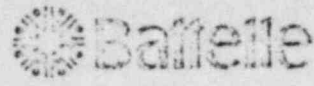
Signed in the presence of:

[Signature]
W. Kevin Stallings

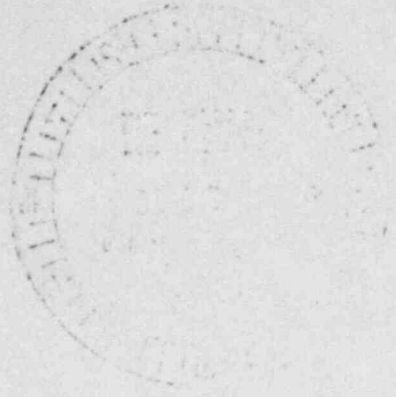
Signed in the presence of:

Kevin Anderson
Sinda Amundson

70-8'



Columbus Laboratories
57 King Avenue
Columbus, Ohio 43207
Telephone (614) 434-1111
Telex 24-7354



October 1, 1980

Mr. Lee Rouse
Advanced Fuel & Spent Fuel Licensing
Division of Fuel Cycle & Material Safety
U. S. Nuclear Regulatory Commission
Washington, D.C. 20555



Dear Mr. Rouse:

Docket 70-8; Financial Decommissioning Plan for
Battelle's Columbus Laboratories

This letter is to advise you of the specific terms and conditions for implementation of the financial plan for the eventual decommissioning for unrestricted use of the Battelle Hot Laboratory (JH-1). This notification is made in response to the request outlined in your letter of June 29, 1979.

These terms and conditions are based upon our previous discussions with your office concerning implementation of the plan. The plan has been approved for funding by the cognizant Department of Energy (DOE) and the Department of Defense (DOD) contracting officers, and the terms also reflect their input.

The basic financial plan, as agreed to with DOE and DOD, was disclosed by prior correspondence with the NRC. The terms and conditions stated in this letter will also apply to the plan which we understand will be incorporated by reference in our license.

Battelle will place all amounts collected in accordance with the Plan into trust. The trustee will be independent of Battelle and of the users who are paying funds into the trust. The trustee will be a national bank or trust department with at least \$500,000,000 in assets. Battelle may, however, retain the right to direct the trustee's investments in order to reduce trust administration fees, but may not direct investments for its own benefit. Trust funds may not be diverted from their intended purpose of decommissioning. The trustee will, of course, pay all trust administration expenses and taxes, including any directly incurred by Battelle solely because of the trust's existence.

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Decom Plan

Mr. Lee Rouse
U.S. Nuclear Regulatory Commission

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October 1, 1980

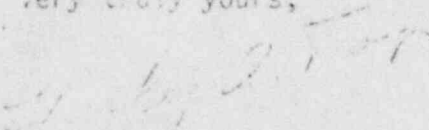
Trust funds may only be used for ultimate decommissioning in accordance with a decontamination and decommissioning plan approved by the NRC. The trust funds are not to be used for routine decontamination which is an adjunct to normal operations. All expenditures of trust funds are subject to NRC audit and review, and Battelle and the trustee are to retain complete records of trust activities for that purpose.

The purpose of this license condition is to provide a systematic means for accumulating funds for the ultimate decommissioning of the facilities. As it is not Battelle's intent to in any way profit from this arrangement, any excess funds remaining in trust will be returned to those who contributed to the fund, in proportion to each contributor's allocable share of trust contributions and net earnings.

It has been decided that two trusts will be used to implement this license condition--one for governmental funds and one for industrial funds. The trust documents to be executed are attached; no terms of substance will be changed without the approval of the NRC.

We assure the terms and conditions for implementing our financial plan are acceptable and provides the necessary documentation for the issuance of the formal amendment to our license. Should you have any questions, please call me.

Very truly yours,


Harley L. Toy
Licensing Coordinator

HLT:s1b

Enc (2)

DRAFT

Industrial Trust

TRUST AGREEMENT

This Trust Agreement is entered into this _____ day of _____, 1980, by Battelle Memorial Institute ("Battelle") as trustor and the _____ National Bank as trustee to receive and hold certain payments from sponsors of industrial research and development carried on by Battelle.

Purpose

Battelle owns nuclear research facilities in West Jefferson, Ohio, (the "Facilities") which, in the normal course of operations, are contaminated with radioactive matter. After a certain period of usage, these Facilities will have to be decontaminated and decommissioned. A license to operate the Facilities has been issued by the United States Nuclear Regulatory Commission ("NRC"). As a condition for the issuance of that license, Battelle was required to demonstrate the financial viability to decontaminate and decommission the Facilities. In conjunction with various Government Agencies including the Department of Defense ("DOD") and the Department of Energy ("DOE") of the United States, who sponsor a substantial volume of the research and development at the Facilities, Battelle created such a plan for identifying the costs of decontamination and developed a method of allocating the financial burden of those costs to all users of the Facilities, both Governmental and industrial, and for returning any excess funds to the users after decontamination and decommissioning is complete. NRC has reviewed and accepted the plan so developed, and made it a specific condition of the license.

The plan requires the users to remit an allocable share of decommissioning costs when they remit their other payments for usage of the Facilities. The license additionally

requires that funds collected be held in trust. This trust is being created to hold the funds of industrial sponsors separately from those of DOE and DOD, as required by those agencies, and to provide assurance that: the amounts deposited in trust are invested in high quality instruments or securities; the amounts deposited are not comingled with Battelle's own funds; the earnings on the amounts deposited are fully segregated from Battelle's earnings on its own funds; the amounts deposited are protected from the general creditors of the industrial sponsors and Battelle; and the trust assets are held solely for the benefit of the industrial sponsors of research at the Facilities.

All amounts received by Battelle from industrial sponsors as their allocable share of decommissioning costs of the Facilities are to be paid over to the trustee by Battelle, to be invested until actually needed. All income of these deposits in the trust shall be reinvested until actually needed for decontamination of the Facilities. No funds may be returned to the industrial sponsors until ultimate decommissioning is complete, unless the NRC consents to the return of funds.

Powers and Duties of the Trustee

The powers and duties of the trustee are strictly limited to receiving, holding, investing, and disbursing trust funds for the purposes described herein. The duty of the trustee to make periodic accounting other than the final accounting, shall be satisfied by the proper rendition of the monthly reports prescribed herein.

Trustee's Compensation

The trustee shall receive a fee for acting as trustee as provided herein, to be agreed upon by the trustee and Battelle. This fee may be paid directly out of the trust funds.

Investment of Trust Funds

Battelle may, from time to time, provide specific instructions to the trustee regarding the investment of trust funds. In accordance with the specific instructions, trust funds may be invested in:

- o demand notes with a rating of A-1 or P-1.
- o commercial paper with a rating of A-1 or P-1.
- o certificates of deposit or banker's acceptances issued by a depository which has at least \$100 million capital and surplus.
- o department securities issued or guaranteed by the United States, its agencies or instrumentalities.
- o municipal bonds rated in the top three categories (AAA, AA, A) by Standard & Poor's Corporation.
- o corporate bonds rated in the top three categories (AAA, AA, A) by Standard & Poor's Corporation.
- o preferred stock with a sinking fund rated "BBB" or better by Standard & Poor's Corporation, and preferred stock without a sinking fund rated as "A" or better by Standard & Poor's Corporation.

The investments shall be consistent with projected cash flow needs for actual decommissioning as anticipated by Battelle. Trust funds may not be invested in securities issued by Battelle or any of the industrial sponsors of research at the Facilities or any entity related to Battelle or the sponsors.

In the absence of instructions from Battelle, the trustee shall invest the funds in those short-term time deposits offered by the trustee which bear the highest rate of interest.

Removal of the Trustee

Battelle may remove as trustee the _____ National Bank or any successor, with or without cause. Such removal shall be effective upon receipt by the trustee of written notice of removal, a written appointment of the successor trustee, and

such successor's written acceptance of the trust. Any successor must be a national bank or trust fund with at least \$500,000,000 in assets.

Upon removal, the removed trustee shall deliver all trust funds in its possession to the successor trustee and shall render a final accounting. Thereafter, the removed trustee shall have no further powers or duties as trustee.

Termination

The trust shall end when all of the trust funds have been disbursed and there are no further deposits to be made into the trust.

Periodic Accounting

The trustee will provide an accounting of receipts, disbursements, and earnings on a monthly basis.

Final Accounting

Upon termination of the trust or upon appointment of a successor trustee, the trustee shall render a final accounting to Battelle and, upon request, to any sponsors of industrial research at the Facilities.

Trust Disbursements

The trustee is authorized to make disbursement for reasonable expenses of trust administration, including taxes. The trustee may disburse money from the fund to Battelle to pay those costs of trust administration which are not incurred by or assessed against the

trust directly, provided that Battelle certifies to the trustee that those costs are directly related to the operation of the trust. Such costs might include taxes relating to trust deposits or income, and expenditures required of Battelle or others because of the existence of the trust.

Battelle will, from time to time, direct the trustee to disburse money from the fund to pay for expenses associated with decommissioning the Facilities. Disbursements for decommissioning may only be made in accordance with a decommissioning plan approved by NRC. Battelle will provide to the trustee copies of the decommissioning plan and NRC's approval, and must certify that each such disbursement is in accordance with the plan.

Upon completion of all decontamination and decommissioning, Battelle will direct the trustee to make a final disbursement of funds. Such final disbursement may only be made to industrial users of the Facilities, in proportion to their respective share of trust corpus and allocated earnings. If any entity which contributed to the fund is not in existence at that time, then payment shall be made in accordance with a letter designating a successor in interest. If no such letter is on file, then payment will be made to any charitable organization, contributions to which are deductible under the Internal Revenue Code, selected by Battelle.

Nonassignment

Battelle may not assign its rights under this Agreement, or direct distributions in any manner not expressly provided for, unless otherwise agreed to by the Government. To the fullest extent permissible by law, no legal process may be used to divert trust assets from their appropriate utilization for decommissioning as provided herein.

Indemnity of Trustee

Battelle agrees to hold the trustee harmless from any expense which the trustee may incur in performing its duties as trustee, except for expenses due to its own negligence, willful misconduct, or unlawful act.

Additional Terms

The trust has been accepted by the trustee in and will be administered in the State of Ohio, and this Agreement shall be interpreted in accordance with Ohio law.

If any provision of this Agreement shall be invalid or unenforceable, the remaining provisions shall continue to be fully effective.

Executed this _____ day of _____, 1980.

Trustee National Bank,

By: _____

Title: _____

Signed in the presence of:

Executed this _____ day of _____, 1980.

Trustee National Bank,

By: _____

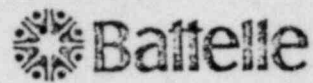
Title: _____

Signed in the presence of:

DRAFT

TMC/prw

2/25/80



Columbus Laboratories
365 King Avenue
Columbus, Ohio 43201
Telephone (614) 424-6424
Telex 24-5454

April 25, 1979

Mr. Leland C. Rouse, Chief
Fuel Processing and Fabrication Branch
Division of Fuel Cycle and Material Safety
Office of Material Safety and Safeguards
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Dear Mr. Rouse:

Docket 70-8; Supplement to License SNM-7

This letter provides supplemental information to the Financial Plan for Decommissioning of the BCL Contaminated Facilities transmitted under cover letter dated, November 22, 1978. Attachment I is enclosed which responds to your request for additional cost and task detail associated with the D&D of BCL's Hot Laboratory and Plutonium Laboratory.

Battelle's Columbus Laboratories, a Division of Battelle Memorial Institute, is a multinational contract research organization which recognizes its obligations in conducting nuclear research under license authorized by the U.S. Nuclear Regulatory Commission. This includes responsibility for proceeding in a timely manner with the decontamination and/or decommissioning (D&D) of the BCL licensed facilities.

We would trust that the supplemental information presented in Attachment I meets your requirements for approval and formal adoption of the plan as a license amendment and condition to License SNM-7 and Byproduct License No. 34-6854-5.

Should there be unanswered questions, they should not impact the issues raised by DOE with respect to BCL proceeding with the implementation of a financial plan to accumulate funds from current users of the facility. We would therefore request that you advise DOE (with a copy to us) that the concept is acceptable with NRC. I will call you Monday to discuss any remaining questions.

Very truly yours,

Harley L. Toy
NRC Licensing Coordinator

HLT:lba

Enc. (1)

7906230170

50 Years Of Service
1929-1979

add'l info

12708

ATTACHMENT I

HOT CELL LABORATORY (JN-1)

Breakdown of Costs

Based on 1978 dollars, the estimated costs to decontaminate the Hot Cell Laboratory is \$3.5 million. It is further anticipated that this program will require 3 years to complete. The following is provided as supplemental information to the NRC.

1. Program Tasks. The program is expected to include at a minimum the following subtasks.
 - (a) Program planning
 - (b) Removal of bulk special nuclear material (SNM)
 - (c) Decontamination and/or removal of all equipment and cell liners
 - (d) Decontamination and/or removal of all auxiliary systems
 - (e) Decontamination and/or removal of the contaminated drain and holding tank system
 - (f) Decontamination of the pool water
 - (g) Decontamination of the interior walls, floors, ceilings, and pool to the level required for uncontrolled use.
 - (h) Packaging, transportation, and burial of all generated waste
 - (i) Restoration of the building's lighting and ventilation systems
 - (j) Certification of compliance with the appropriate standards. At present, this is assumed to be ANSI N13.12.

12708

Component Cost Breakdown

	<u>Man-Months</u>	<u>Costs, K\$</u>
A. Project Support Costs		
Program Management	54	210
Health Physics	108	253
Accountability	36	84
Transportation	18	42
Quality Assurance	18	42
B. Purchases and Facility Costs		
Purchases (includes supplies, transportation, cask rental, waste container, subcontracted, and burial costs)		1260
Facility Operation		720
C. Subtask		
a. Program Planning	Included in A Above	
b. Removals	6	13
c. D&D Equipment	144	303
d. Removals	60	126
e. D&D Drains	60	126
f. D&D Pool Water	13	38
g. D&D Interior	40	101
h. Packaging & Transport	72	152
i. Restoration	12	25
j. Certification	12	<u>25</u>
		909
		Total <u>\$3520 K</u>

12708

PLUTONIUM LABORATORY (JN-4)

Battelle's Plutonium Laboratory, JN-4, is presently undergoing decontamination to the levels required for unrestricted use. Certification of these levels involves compliance with ANSI N13.12 and Attachment A of NUREG-G436 (March, 1978). It is presently anticipated that this program will be completed by January 1, 1981.

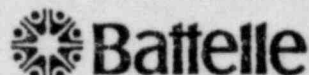
It should be pointed out that this program involves only decontamination, not decommissioning. Battelle chooses to maintain its nuclear materials license in the event that Battelle, at some future time, would decide to resume contaminating research operations in JN-4. Battelle realizes that once JN-4 is recontaminated, it would be responsible for submitting a new decontamination plan. Battelle proposes the following:

1. To submit a decontamination plan for JN-4 to NRC at the time JN-4 becomes contaminated beyond existing guidelines for unrestricted use facilities
2. To review the need for submitting such a plan annually and report the results of this review to the cognizant NRC representatives

This approach would allow Battelle sufficient flexibility in its normal operations while providing the NRC with regular updating. This proposal would go into effect after the present program is completed and JN-4 is certified to be decontaminated to the level required for unrestricted use under the aforementioned standards.

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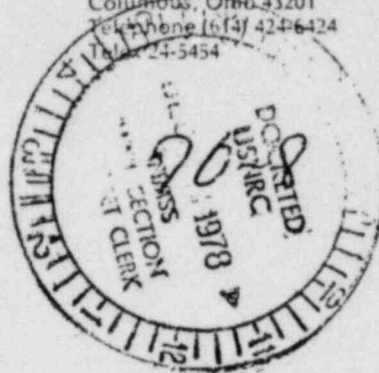


Columbus Laboratories
505 King Avenue
Columbus, Ohio 43201
Telephone (614) 424-6424
Telex 24-5454

December 15, 1978

1978 DEC 22 AM 10 53

U.S. NUCLEAR REGULATORY COMMISSION



Mr. Robert Kratzke
Fuel Reprocessing & Recycle Branch
Office of Nuclear Material Safeguards
and Security
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Dear Mr. Kratzke:

This letter is in response to our recent telephone conversations and reiterates several of the points that have been made. In addition, I will try to summarize where I think we are now.

BCL submitted to the Department of Energy (DOE), Chicago Operations Office, a financial plan to accumulate funds for the eventual decontamination of our nuclear facilities. The plan was developed to provide a long-range solution to a potential future problem. In other words the plan is not intended to assure that funds are currently available to cover previously contaminated facilities but rather to recognize the need for an orderly mechanism to accumulate funds to cover the future cost of a liability created by current and future operations. The purpose of obtaining DOD approval is to get them (and other sponsors) to recognize the necessity of assessing current users for a cost that will actually be incurred in the future.

Since the Nuclear Regulatory Commission (NRC) has not adopted regulations nor promulgated guidelines in this area the plan is not necessarily expected to precisely parallel the eventual financial commitments associated with licensing conditions. However, since the plan makes good business sense and since it goes beyond currently promulgated regulations it is expected that it should satisfy most of any future requirements. It should, however, be emphasized that we are addressing future contamination problems but, with time, the plan can also help solve current contamination problems.

DOE has tentatively approved the concept of creating a reserve to cover the eventual cost. They have, however, withheld final approval pending a review by NRC. In this regard Harley Toy transmitted a copy of the plan to you on November 22, 1978. From DOE's point of view your review would presumably address the assumptions of the plan based on its intended purpose and determine the adequacy of the plan to meet the future obligations of BCL and BCL's sponsors of research.

11507

7904484130

SEE EXHIBIT

You indicated a desire to review the decontamination/decommissioning plan that was utilized to develop the required funds. As I indicated to you, an extensive, detailed plan was not developed, primarily because there is no intent to decommission or decontaminate our facilities at this time and changing regulations would in all probability make a detailed plan obsolete by the time it becomes necessary to decontaminate or decommission the facilities. We did however develop a cursory plan which was used to determine the magnitude of the effort. This was then compared to the efforts and costs associated with retirement of the Battelle Research Reactor and the Battelle Plutonium Laboratory. A copy of a memo dated 12-27-77 from R. W. Klingensmith to K. C. Brog which briefly describes the effort and cost is enclosed.

You also indicated concern regarding the possible necessity to decontaminate the facilities prior to the time that adequate funds are available from the plan. As I pointed out, the plan is not intended to cover this type of contingency except to the extent assets are available in the fund. This is addressed in the plan, i.e., "[establishment of this fund] does not reduce the total liability of any party except to the extent of the assets available in the fund". I think this is fairly clear and would propose that no change in the language be made. If any further commitments by Battelle are to become issues in the license renewal process, they should be addressed separately from the proposed financial plan.

The final issue which you raised pertains to the level of decontamination. Again, I think this is outside the scope of the financial plan to accumulate reserves. The level of decontamination can only be adequately addressed at the time a decontamination/decommissioning plan is developed. The intent, however, is to have funds available to decontaminate to "releasable levels" but to my knowledge this has not been defined by NRC.

If the above adds anything in the way of clarification, it may be incorporated into the plan document.

After you have had an opportunity to review the cursory decontamination/decommissioning plan, if you have further questions, do not hesitate to contact me. Since the implementation of the financial accumulation is very important to Battelle we will be happy to meet with you and/or others at NRC to clarify further points. If necessary we can probably also arrange for a representative from DOE to be present.

As I envision it now, if the data provided is sufficient to justify NRC's recognition of the plan as a desirable concept (not necessarily a solution to all the anticipated licensing requirements), a letter from you to DOE would be in order. Any reservations you have regarding the assumptions incorporated in the plan could be outlined if we are unable to work them out before hand.

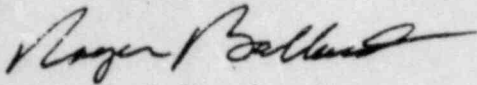
Mr. Robert Kratzke

3

December 15, 1978

I will call you in a few days to discuss any further input you need from us.

Sincerely,



Roger K. Ballard
Manager
Research Finance

RKB:dc

Enclosure

cc: Mr. James Buchar
Contracts Management Office
U.S. Department of Energy
Chicago Operations Office
9800 South Cass Avenue
Argonne, Illinois 60439

REC'D DEC 27 1977

Project Number
Internal Distribution
J.B. Brown, Jr.
R.W. Klingensmith

Date December 27, 1977
To K.C. Brog
From R.W. Klingensmith *RWK*
Subject Estimate of Effort Required to Totally Decontaminate
The Battelle Hot Laboratory

In response to the inquiry by NRC regarding costs and efforts involved to decontaminate the Battelle Hot Laboratory the following first-order analysis has been made.

To a large degree the cost and effort involved in decontaminating the Hot Laboratory are dependent upon the levels to which the various components are to be decontaminated. On this basis, the analysis made assumes a decontamination level equivalent to permitting use of the Laboratory building for non-radiation oriented research purposes.

Facility Components

On the basis of existing operational contamination levels the Hot Laboratory facility is licensed to permit three levels of area contamination; non-contaminated areas, suspect areas, and contaminated areas.

In non-contaminated areas there is no air-borne radioactive particulate, no smearable contamination on any surface and the radioactive background is less than 1.0 mr per hour.

Non-contaminated areas in the Laboratory include the operating areas of the cells, locker and restrooms, photographic darkroom, boiler room, machine shop, personnel monitoring stations, support laboratories, storeroom, offices and conference room areas.

Decontamination required in these areas will be minimal.

Suspect areas are defined as work areas in which the radiation level may usually be 1.0 to 2.0 mr per hour i.e., slightly above the normal background of the non-contaminated areas. These areas include the high bay area which contains the truck bay, the storage pool and the associated transfer area, the high energy cell entry vestibule (cask washdown room), and the top of the high energy cell. The Laboratory back loading dock is also considered a suspect contaminated area.

Decontamination of suspect contaminated areas would require moderate effort.

MEMORANDUM

TO: K.C. Brog
FROM: R.W. Klingensmith

2

December 27, 1977

Contaminated areas are those areas in which radioactive or contaminated materials are routinely handled directly. These areas include the interiors of the hot cells themselves, the control areas which provide personnel and equipment access to the cells, the contaminated equipment storage area, the radioactive material dry storage tubes, and the liquid waste evaporator room.

Decontamination of contaminated areas and components would require a maximum effort.

Decontamination Operations

By far, the greatest effort would be required in the decontamination of the high and low level cell interiors and the dry storage tubes. These facilities since the early 1950's have been directly exposed to air-borne radioactive particulate matter generated by the cutting and handling of exposed fuel from high burnup fuel rods and other materials with high specific radioactivity content.

The high energy cell and the mechanical test cell similarly are exposed to highly contaminated and radioactive materials but cutting and other destructive handling operations are not performed in these two cells. They are therefore more easily decontaminated than the high and low level cells. The same is true for the access control areas to the cells and the contaminated equipment storage room. Nevertheless, a maximum effort would be required to decontaminate these components.

The alpha-gamma and metallographic cells are highly contaminated due to the extensive amount of metallographic grinding and polishing which takes place. Each of these cells is an individual stainless steel box which would have to be removed, decontaminated and disposed of.

Contaminated Equipment

Within the Hot Cell Laboratory are many pieces of specialized laboratory equipment. Effective decontamination of such equipment would be virtually impossible due to individual complexity. This equipment includes approximately 60 manipulators and more than 100 pieces of major laboratory equipment. Handling and preparation of this equipment for disposal would require a major effort.

Waste and Scrap Disposal

It has been assumed that total decontamination of the facility would not include the disposal of fuel or other SNM materials. Because of its accountability, this material would be disposed of under government or industrial project control. Exclusive of these materials, a total decontamination of the Hot Laboratory would generate a vast amount of waste and scrap materials which would have to be disposed of by available means.

In addition to generated waste and scrap, the transfer and storage pool contains approximately 250,000 gallons of deionized but slightly contaminated water. Its disposal will require a major effort.

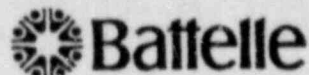
Effort and Costs

Based upon experience at the Battelle Research Reactor, and estimates made for the Battelle Plutonium Laboratory, it is estimated that decontamination of the Battelle Hot Laboratory would require a two year time period and an expenditure of \$2.5 million. This includes an estimated expenditure of \$1.5 million for non-fueled waste and scrap disposal and \$0.5 million for the disposal of contaminated water.

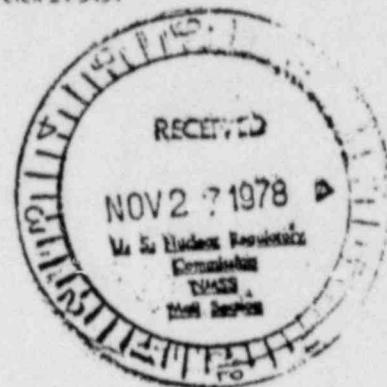
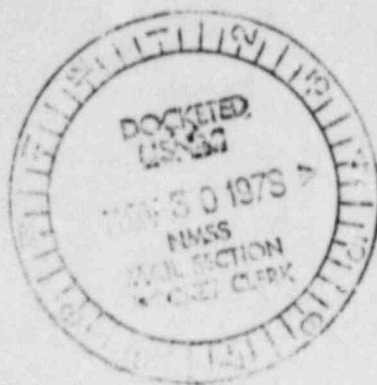
If these funds are to be generated over the life of the facility, they should be given consideration at this time. It might be necessary to place a portion of project generated overhead funds into escrow or to place an additional burden on all research projects. These methods would certainly effect project costs. In order to remain competitive any added burden would have to be assessed equitably. That is, non-contaminating projects e.g. mechanical properties evaluation of reactor pressure vessel materials would carry a lesser burden than highly contaminating projects e.g. high burnup fuel rod destructive examination.

These actions would effect sponsor costs and BCL's competitive position thereby requiring careful planning.

RWK/lr



Columbus Laboratories
 505 King Avenue
 Columbus, Ohio 43201
 Telephone (614) 424-6424
 Telex 24-5454



November 22, 1978

Mr. Robert Kratzke
 Fuel Reprocessing and Recycle Branch
 Office of Nuclear Material Safeguards
 and Security
 U.S. Nuclear Regulatory Commission
 Washington, D.C. 20555

Dear Mr. Kratzke:

Docket 70-8; Supplement to License No. SNM-7

This will follow up our telephone conversation of November 21, 1978, regarding the Battelle-Columbus Financial Plan for future decontamination of our nuclear facilities.

Enclosed for your review is Financial Plan for Decommissioning of the BCL Contaminated Facilities. This plan has also been submitted to the DOE Chicago Operations Office in connection with our nuclear activities conducted under DOE-BCL Contract W-7405-ENG-92.

We trust this financial plan will satisfy the NRC licensing requirements for the decontamination and decommissioning of the BCL licensed facilities.

Your early evaluation and concurrence with our plan is appreciated.

Very truly yours,

Harley L. Toy
 NRC Licensing Coordinator

HLT:lba

Enc. (1)

cc: Mr. Jim Buchar
 Contracts Management Office
 U.S. Department of Energy
 Chicago Operations Office
 9800 South Cass Avenue
 Argonne, Illinois 60439

FEE EXEMPT

per 8/21/78 memo

78-214-0372

FINANCIAL PLAN FOR DECOMMISSIONING OF THE
BCL CONTAMINATED FACILITIES

The basic premise of the BCL Financial Plan is that programs utilizing nuclear facilities cause contamination and, therefore, should bear the cost of decontamination in an equitable manner. The liability for decontamination, in the event nuclear facilities require decontamination, should be assumed by current users through the creation of a special reserve to be funded by establishing a burden rate based on total cost. An escrow account, managed by the Battelle Corporate Office, will be established to facilitate accumulation of principal and earnings and to assure that funds accumulated for this purpose will be available when needed. Funds will be invested in low-risk, moderately liquid securities.

An initial burden rate of 6% has been calculated based on the following assumptions (see Addendum A for details of calculations):

- Earnings of 6% per year to be credited to the fund.
- An inflation rate of 6% per year related to projections of research volume and decontamination costs.
- Projections of real growth in volume of 5% for the first 10 years and 2% thereafter.
- Research volume (excluding fee) will be \$1,900,000 in 1978.
- A time frame of 20 years for accumulation of the fund.
- Estimated decontamination cost (1978 dollars) of \$3,500,000.
- Calculated burden rate is to be applied to total cost or its equivalent.

The validity of the above assumptions will be reviewed at least annually with appropriate adjustments made to the burden rate as required. Detailed working papers supporting computations of the burden rate will be maintained on file for audit and review. The papers will be retained as long as the fund remains in existence to support our computations of the required burden rate.

Establishment of this fund provides an orderly mechanism for accumulation of funds to cover an eventual liability. It does not reduce

the total liability of any party except to the extent of the assets available in the fund.

In the event excess funds are available at the time of decontamination, that portion contributed by the Government will be returned. The Government share of any excess contributions will be determined in proportion to the initial contributions and timing of receipts.

ANALYSIS OF REQUIRED FUNDING RATE FOR
NUCLEAR DECONTAMINATION RESERVE
(\$s in thousands)

<u>Year</u>	<u>Projected Research Volume*</u>	<u>Projected Research Volume**</u>	<u>6% Burden</u>	<u>Income +6% Earnings</u>
1978	\$ 1,900			
1979	\$ 1,000+	\$ 1,060	\$ 65	\$ 195
1980	2,095	2,355	140	400
1981	2,200	2,620	155	415
1982	2,310	2,915	175	445
1983	2,425	3,245	195	465
1984	2,545	3,610	215	485
1985	2,675	4,020	240	510
1986	2,805	4,475	270	545
1987	2,950	4,980	300	570
1988	3,095	5,540	330	590
1989	3,155	5,990	360	610
1990	3,220	6,480	390	620
1991	3,285	7,005	420	630
1992	3,350	7,575	455	645
1993	3,415	8,190	490	655
1994	3,485	8,855	530	670
1995	3,555	9,575	575	685
1996	3,625	10,350	620	695
1997	3,700	11,190	670	710
1998	<u>3,775</u>	<u>12,100</u>	<u>725</u>	<u>725</u>
Total	\$58,665	\$122,130	\$7,320	\$11,265++

$$\text{Rate} = \frac{3500}{58665} = 5.97\% \quad \text{Fund at 6\%}$$

* Constant (1978) dollars.

** Current (inflated) dollars assuming 6% inflation.

+ Assumes only 50% of projects will have burden applied during 1979.

++ Future need (current dollars) = \$3,500 (1.06)²⁰ = \$11,225.