

PROJECT PROPOSAL AND AUTHORIZATION

1. PROJECT TITLE Neurological Studies			2. DATE PREPARED 5/25/52 8/3/52		
3. BUDGET ACTIVITY NO. 6210	4. BUDGET ITEM NO. 1	5. CONTRACTOR'S NO. Same	6. METHOD AND TIME OF REPORTING PROGRESS		
7. CONTRACTOR-LABORATORY U. of C. Argonne National Laboratory		8. WORKING LOCATION Chicago	9. CONTRACT NO. AT-11-1-69 W-311-69-0008		
10. PERSON IN CHARGE (CONTRACTOR'S PROJECT LEADER) Theodore B. Rasmussen, M.D.			11. STARTING DATE OF PROJECT		
12. PURPOSE AND NEED (GIVE NARRATIVE DESCRIPTION OF PROJECT) <p>This project concerns the application of radioisotopes to the investigation of neoplasms and other disorders of the nervous system. The initial studies involve two approaches: a) improvement and extension of techniques for the detection of brain tumors using radioactive substances with different properties and activities than those currently in use; b) localized application of radioisotopes or light elements that can be neutron-activated in an effort to obtain adequate selective localization of radiation therapy; and c) to study effectiveness of local implantation of beta-ray-emitting isotopes on brain tumors. The use of radioisotope-labeled compounds for purposes of localizing brain lesions requires further extension for purposes of better surgical and radiation treatment. Effort will be directed toward obtaining more effective control of brain tumors by local application of radioisotopes or elements that can be neutron activated.</p>					
13. RELATED PROJECTS (WITH SAME CONTRACTOR OR OTHERS) <p>Projects related are 8 and 10. The objectives in 8 are, however, broader than brain tumor localization and therapy. Project 10 is related in that the high energy sources will be used to treat brain tumors.</p>					
14. ACCOMPLISHMENTS LAST FISCAL YEAR (IF A CONTINUED PROJECT) 1951 <p>Superior scintillation counting equipment and technics have become available which will aid in localization of brain lesions. Preliminary work has already been done by Dr. Rasmussen on impregnation of gelfoam with Ag¹¹¹ and Yt⁹⁰ for experimental use in animals and the human being.</p>					
15. EXPECTED RESULTS THIS FISCAL YEAR 1952 <p>Further information will be made available on the feasibility of the technic of the use of radioisotopes for more accurate localization of brain lesions. The effects of impregnated gelfoam on normal brain tissue, the distribution of radioisotopes absorbed from the brain will be studied.</p>					
BEST COPY AVAILABLE					
16. ANTICIPATED PROBLEMS NEXT FISCAL YEAR (IF PROJECT WILL CONTINUE) 1953 <p>Continuation of problem is outlined above.</p>					
			REPOSITORY <u>Argonne National Laboratory</u>		
			COLLECTION <u>Neurological Studies</u>		
			BOX No. <u>26</u>		
			FOLDER <u>17</u>		

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BUDGET NO.

	ACTUAL LAST YEAR 1951	ESTIMATED THIS FISCAL YEAR 1952	ESTIMATED NEXT FISCAL YEAR 1953
17. OPERATING COSTS			
(A) CONTRACT EXPENSE			
(1) DIRECT SALARIES	\$	\$	\$
(2) DIRECT MATERIALS & SERVICES			
(3) R & D SUBCONTRACTS			
(4) INDIRECT EXPENSE			
(5)			
SUB-TOTAL			
(B) NON-CONTRACT EXPENSE			
(1) SPECIAL REACTOR MATERIALS			
(2)			
SUB-TOTAL			
TOTAL COST	\$	\$	\$

18. COST OF PLANT & EQUIPMENT DIRECTLY REQUIRED - NOT APPLICABLE

19. DIRECT MANPOWER (MAN YEARS)	NO. OF MAN YEARS	NO. OF MAN YEARS	NO. OF MAN YEARS
(A) SCIENTISTS & ENGINEERS			1.0
(B) OTHER TECHNICAL			1.5
(C) LOANED EMPLOYEES			
TOTAL			2.5

20. COMMENTS:

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PROJECT PROPOSAL AND AUTHORIZATION

1. PROJECT TITLE Antibody Localization			2. DATE PREPARED 5/26/52 xxxxxx		
3. BUDGET ACTIVITY NO. 6210	4. BUDGET ITEM NO. 2	5. CONTRACTOR'S NO. Same	6. METHOD AND TIME OF REPORTING PROGRESS		
7. CONTRACTOR-LABORATORY Argonne National Laboratory U. of C.		8. WORKING LOCATION Chicago	9. CONTRACT NO. AT-11-1-69 W-001-00-00-00-00		
10. PERSON IN CHARGE (CONTRACTOR'S PROJECT LEADER) Robert W. Kissler, M.D. and L. O. Jacobson			11. STARTING DATE OF PROJECT		
12. PURPOSE AND NEED (GIVE NARRATIVE DESCRIPTION OF PROJECT) <p>The purpose of the study of antigen-antibody reactions is to explore methods for effecting selective localization of antigens in neoplastic tissues. When suitable methods are developed which will yield adequate localization, the project will then involve labelling antigens which can carry appropriate isotopes to tumor tissue. This project is a part of the general study of methods of concentrating radiation in tumor tissue and sparing adjacent healthy structures.</p> <p>The problem of antibody formation is of importance in the field of cancer from the practical standpoint of transfusion therapy of patients with cancer and in relation to cancer formation, diagnosis, and therapy. It is imperative to determine the mechanism of antibody formation, the cellular basis of immune body formation and its relation to the genesis and treatment of cancer.</p>					
13. RELATED PROJECTS (WITH SAME CONTRACTOR OR OTHERS) <p>The techniques in Project 3 have given significant leads which may make the definitive localization of antibody formation possible. Project 6 is related since the anemia in cancer is related in many instances to the formation of antibodies which destroy the red cells.</p>					
14. ACCOMPLISHMENTS LAST FISCAL YEAR (IF A CONTINUED PROJECT) 1951 <p>Using the spleen or appendix shielding technique it has been shown that antibody formation is controlled in the irradiated animal by a humoral substance as yet unidentified. Antibody formation can be initiated in the absence of viable bone marrow or lymphatic tissue.</p>					
15. EXPECTED RESULTS THIS FISCAL YEAR 1952 <p>Data on the humoral control of antibody formation in the irradiated animal will be accumulated. Work will be initiated on the localization of antibody formation as well as work on the identification of the humoral substance.</p>					
16. ANTICIPATED PROBLEMS NEXT FISCAL YEAR (IF PROJECT WILL CONTINUE) 1953 <p>Further results on the localization of antibody formation to specific cells will be available. Data on the humoral substance responsible for the initiation of the antibodies will be forthcoming.</p>					

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BUDGET NO.

	ACTUAL LAST YEAR 1951	ESTIMATED THIS FISCAL YEAR 1952	ESTIMATED NEXT FISCAL YEAR 1953
17. OPERATING COSTS			
(A) CONTRACT EXPENSE			
(1) DIRECT SALARIES	\$	\$	\$
(2) DIRECT MATERIALS & SERVICES			
(3) R & D SUBCONTRACTS			
(4) INDIRECT EXPENSE			
(5)			
SUB-TOTAL			
(B) NON-CONTRACT EXPENSE			
(1) SPECIAL REACTOR MATERIALS			
(2)			
SUB-TOTAL			
TOTAL COST	\$	\$	\$
18. COST OF PLANT & EQUIPMENT DIRECTLY REQUIRED - NOT APPLICABLE			
19. DIRECT MANPOWER (MAN YEARS)	NO. OF MAN YEARS	NO. OF MAN YEARS	NO. OF MAN YEARS
(A) SCIENTISTS & ENGINEERS			1.5
(B) OTHER TECHNICAL			1.5
(C) LOANED EMPLOYEES			
TOTAL			3.0
20. COMMENTS:			

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BUDGET NO.

	ACTUAL LAST YEAR 1951	ESTIMATED THIS FISCAL YEAR 1952	ESTIMATED NEXT FISCAL YEAR 1953
17. OPERATING COSTS			
(A) CONTRACT EXPENSE			
(1) DIRECT SALARIES	\$	\$	\$
(2) DIRECT MATERIALS & SERVICES			
(3) R & D SUBCONTRACTS			
(4) INDIRECT EXPENSE			
(5)			
SUB-TOTAL	_____	_____	_____
(B) NON-CONTRACT EXPENSE			
(1) SPECIAL REACTOR MATERIALS			
(2)			
SUB-TOTAL	_____	_____	_____
TOTAL COST	\$ _____	\$ _____	\$ _____

18. COST OF PLANT & EQUIPMENT DIRECTLY REQUIRED - NOT APPLICABLE

19. DIRECT MANPOWER (MAN YEARS)	NO. OF MAN YEARS	NO. OF MAN YEARS	NO. OF MAN YEARS
(A) SCIENTISTS & ENGINEERS			4.0
(B) OTHER TECHNICAL			8.0
(C) LOANED EMPLOYEES	_____	_____	_____
TOTAL			12.0

20. COMMENTS:

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PROJECT PROPOSAL AND AUTHORIZATION

1. PROJECT TITLE Metabolic Studies		2. DATE PREPARED 5/26/52 xxxxxx	
3. BUDGET ACTIVITY NO. 6210	4. BUDGET ITEM NO. 4	5. CONTRACTOR'S NO. Same	6. METHOD AND TIME OF REPORTING PROGRESS
7. CONTRACTOR-LABORATORY Argonne Cancer Research Laboratory U. of C.		8. WORKING LOCATION Chicago	9. CONTRACT NO. AF-11-1-69 AF-11-1-69
10. PERSON IN CHARGE (CONTRACTOR'S PROJECT LEADER) George V. Le Roy and L. O. Jacobson		11. STARTING DATE OF PROJECT	
12. PURPOSE AND NEED (GIVE NARRATIVE DESCRIPTION OF PROJECT)			
<p>Knowledge concerning the interrelationships between the endocrines and the control of cancer make necessary certain metabolic studies on the experimental animal and the human using both radioactive and stable isotope labeled compounds. The Argonne Cancer Research Hospital is a facility which provides an ideal arrangement for collaborative work on clinical metabolic studies such as adrenal physiology and its relation to suppression or growth of cancer.</p> <p>The metabolic studies contemplated include the utilization of bilateral adrenalectomized patients as biological tools to investigate the behavior of steroid hormones and their precursors, using isotopically labelled compounds which are available or will be synthesized. In addition to this, it is planned to investigate further specific metabolites which can be selectively localized in neoplastic tissue as carriers for isotopes which may be useful in therapy.</p>			
13. RELATED PROJECTS (WITH SAME CONTRACTOR OR OTHERS)			
Projects 1, 2, 3, 5, 8.			
14. ACCOMPLISHMENTS LAST FISCAL YEAR (IF A CONTINUED PROJECT) 1951			
<p>It has been shown, for example, that adrenalectomy inhibits growth of prostate cancer in the human being. This fact opens up a direct approach to the study of adrenal steroids in cancer biology in the human and experimental animal.</p>			
15. EXPECTED RESULTS THIS FISCAL YEAR 1952			
<p>Methods of synthesis and assay will be devised and developed during this fiscal year. Studies in the experimental animal will be carried out.</p>			
16. ANTICIPATED PROBLEMS NEXT FISCAL YEAR (IF PROJECT WILL CONTINUE) 1953			
<p>Application of the methods to the human will begin.</p>			

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BUDGET NO.

	ACTUAL LAST YEAR 1951	ESTIMATED THIS FISCAL YEAR 1952	ESTIMATED NEXT FISCAL YEAR 1953
17. OPERATING COSTS			
(A) CONTRACT EXPENSE			
(1) DIRECT SALARIES	\$	\$	\$
(2) DIRECT MATERIALS & SERVICES			
(3) R & D SUBCONTRACTS			
(4) INDIRECT EXPENSE			
(5)			
SUB-TOTAL			
(B) NON-CONTRACT EXPENSE			
(1) SPECIAL REACTOR MATERIALS			
(2)			
SUB-TOTAL			
TOTAL COST	\$	\$	\$

18. COST OF PLANT & EQUIPMENT DIRECTLY REQUIRED - NOT APPLICABLE

19. DIRECT MANPOWER (MAN YEARS)	NO. OF MAN YEARS	NO. OF MAN YEARS	NO. OF MAN YEARS
(A) SCIENTISTS & ENGINEERS			1.5
(B) OTHER TECHNICAL			3.0
(C) LOANED EMPLOYEES			
TOTAL			4.5

20. COMMENTS:

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4002707

PROJECT PROPOSAL AND AUTHORIZATION

1. PROJECT TITLE Differential Reduction in Radiosensitivity of Normal Tissue				2. DATE PREPARED 5/26/52 2/1/52	
3. BUDGET ACTIVITY NO. 6210	4. BUDGET ITEM NO. 5	5. CONTRACTOR'S NO. Same	6. METHOD AND TIME OF REPORTING PROGRESS		
7. CONTRACTOR-LABORATORY U. of C. Argonne Research Laboratory		8. WORKING LOCATION Chicago	9. CONTRACT NO. AT-11-1-69 W-11-1-69		
10. PERSON IN CHARGE (CONTRACTOR'S PROJECT LEADER) L. O. Jacobson & Wm. Bethard			11. STARTING DATE OF PROJECT		
12. PURPOSE AND NEED (GIVE NARRATIVE DESCRIPTION OF PROJECT)					
<p>It is imperative to find means to differentially reduce the destructive effect of therapeutically administered radioisotopes such as P³² and x-rays on the normal blood forming tissue especially in the treatment of the leukemias and lymphomas. The destruction of normal blood forming tissue by irradiation can be reduced by prior stimulation of the bone marrow by phenylhydrazine in animals and the human being.</p>					
13. RELATED PROJECTS (WITH SAME CONTRACTOR OR OTHERS)					
<p>Project 8.</p>					
14. ACCOMPLISHMENTS LAST FISCAL YEAR (IF A CONTINUED PROJECT) 1951					
<p>It was proven that the injury to the normal blood forming tissue in the bone marrow produced by irradiation (internal or external) can be reduced by prior stimulation by phenylhydrazine or bleeding.</p>					
15. EXPECTED RESULTS THIS FISCAL YEAR 1952					
<p>Data will become available on whether such prior stimulation will make it possible to administer larger therapeutic doses of radioactive materials, chemical agents or radiations in the treatment of leukemias and lymphomas without reducing the sensitivity of the tumor itself.</p>					
16. ANTICIPATED PROBLEMS NEXT FISCAL YEAR (IF PROJECT WILL CONTINUE) 1953					
<p>Further data will become available on the feasibility of this approach in cancer therapy.</p>					

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BUDGET NO.

	ACTUAL LAST YEAR 1951	ESTIMATED THIS FISCAL YEAR 1952	ESTIMATED NEXT FISCAL YEAR 1953
17. OPERATING COSTS			
(A) CONTRACT EXPENSE			
(1) DIRECT SALARIES	\$	\$	\$
(2) DIRECT MATERIALS & SERVICES			
(3) R & D SUBCONTRACTS			
(4) INDIRECT EXPENSE			
(5)			
SUB-TOTAL			
(B) NON-CONTRACT EXPENSE			
(1) SPECIAL REACTOR MATERIALS			
(2)			
SUB-TOTAL			
TOTAL COST	\$	\$	\$

18. COST OF PLANT & EQUIPMENT DIRECTLY REQUIRED - NOT APPLICABLE

19. DIRECT MANPOWER (MAN YEARS)	NO. OF MAN YEARS	NO. OF MAN YEARS	NO. OF MAN YEARS
(A) SCIENTISTS & ENGINEERS			0.5
(B) OTHER TECHNICAL			1.0
(C) LOANED EMPLOYEES			
TOTAL			1.5

20. COMMENTS:

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4002709

PROJECT PROPOSAL AND AUTHORIZATION

1. PROJECT TITLE Mechanism and Treatment of Anemia in Cancer			2. DATE PREPARED 5/26/52 XXXXXX		
3. BUDGET ACTIVITY NO. 6210	4. BUDGET ITEM NO. 6	5. CONTRACTOR'S NO. Same	6. METHOD AND TIME OF REPORTING PROGRESS		
7. CONTRACTOR-LABORATORY U. of C. Argonne National Laboratory		8. WORKING LOCATION Chicago	9. CONTRACT NO. AF-11-1-69 XXXXXXXXXXXXXXX		
10. PERSON IN CHARGE (CONTRACTOR'S PROJECT LEADER) M. H. Black & Wm. Bethard			11. STARTING DATE OF PROJECT		
12. PURPOSE AND NEED (GIVE NARRATIVE DESCRIPTION OF PROJECT)					
<p>The treatment of the anemias associated with a wide variety of cancers is limited to blood transfusions. The current belief is that many of these anemias are secondary to toxic depression of the blood forming tissue. It has been shown that it is possible to stimulate blood formation under these circumstances by hemolytic agents. It is imperative to know the mechanism of this stimulation in order to make it a feasible therapeutic approach to treatment of the anemias of cancer. This requires study of each patient by means of Fe⁵⁹ and/or P³² to establish blood volume and red cell production in order to assess the degree of stimulation achieved by the hemolytic agents.</p>					
13. RELATED PROJECTS (WITH SAME CONTRACTOR OR OTHERS)					
Projects 4, 5, 6, & 7.					
14. ACCOMPLISHMENTS LAST FISCAL YEAR (IF A CONTINUED PROJECT) 1951					
Established that patients with an anemia due to cancer can actually be stimulated to produce blood by means of a hemolytic agent. In other words, the toxic factor producing suppression can be broken through.					
15. EXPECTED RESULTS THIS FISCAL YEAR 1952					
Data on the degree of stimulation possible in cancer patients will be ascertained and the limitations of the procedure determined.					
16. ANTICIPATED PROBLEMS NEXT FISCAL YEAR (IF PROJECT WILL CONTINUE) 1953					
Determine factor involved in the hemolytic process which is capable of stimulating blood formation even in the face of depression by a cancer.					

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BUDGET NO.

	ACTUAL LAST YEAR 1951	ESTIMATED THIS FISCAL YEAR 1952	ESTIMATED NEXT FISCAL YEAR 1953
17. OPERATING COSTS			
(A) CONTRACT EXPENSE			
(1) DIRECT SALARIES	\$	\$	\$
(2) DIRECT MATERIALS & SERVICES			
(3) R & D SUBCONTRACTS			
(4) INDIRECT EXPENSE			
(5)			
SUB-TOTAL	_____	_____	_____
(B) NON-CONTRACT EXPENSE			
(1) SPECIAL REACTOR MATERIALS			
(2)			
SUB-TOTAL	_____	_____	_____
TOTAL COST	\$ _____	\$ _____	\$ _____

18. COST OF PLANT & EQUIPMENT DIRECTLY REQUIRED - NOT APPLICABLE

19. DIRECT MANPOWER (MAN YEARS)	NO. OF MAN YEARS	NO. OF MAN YEARS	NO. OF MAN YEARS
(A) SCIENTISTS & ENGINEERS			0.5
(B) OTHER TECHNICAL			1.0
(C) LOANED EMPLOYEES			
TOTAL	_____	_____	1.5

20. COMMENTS:

4002711

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PROJECT PROPOSAL AND AUTHORIZATION

1. PROJECT TITLE Radium Metabolism in Humans			2. DATE PREPARED 5/26/52 2/3/52		
3. BUDGET ACTIVITY NO. 6210	4. BUDGET ITEM NO. 7	5. CONTRACTOR'S NO. Same	6. METHOD AND TIME OF REPORTING PROGRESS		
7. CONTRACTOR-LABORATORY Argonne National Laboratory U. of C.		8. WORKING LOCATION Chicago	9. CONTRACT NO. AT-11-1-69 AT-11-1-68		
10. PERSON IN CHARGE (CONTRACTOR'S PROJECT LEADER) R. J. Hasterlick			11. STARTING DATE OF PROJECT		
12. PURPOSE AND NEED (GIVE NARRATIVE DESCRIPTION OF PROJECT)					
<p>Estimates of the toxicity of certain radio-elements especially the alpha-emitters have been derived in the past from extrapolations from the experimental animal to man plus extrapolations from the 1920-1930 era "radium dial painter" patients. It is now clear that these extrapolations from the "Dial Painter" cases are complicated by the presence of mesothorium and radiothorium as well as radium 226 in the paints. Clinical studies will be carried out on a group of patients who received Radium 226 as a therapeutic procedure about 20 years ago.</p>					
13. RELATED PROJECTS (WITH SAME CONTRACTOR OR OTHERS)					
<p>Joint project with the Division of Biological and Medical Research of the Argonne National Laboratory.</p>					
14. ACCOMPLISHMENTS LAST FISCAL YEAR (IF A CONTINUED PROJECT) 1951					
<p>Work in the Division of Biology and Medical Research of the ANL carried out on approximately 30 members of this group of patients to date.</p>					
15. EXPECTED RESULTS THIS FISCAL YEAR 1952					
<p>The clinical studies on the original patients will be extended and new patients studied. Excretion rate data will be obtained and metabolic studies will be carried out. Bone biopsies will be obtained.</p>					
16. ANTICIPATED PROBLEMS NEXT FISCAL YEAR (IF PROJECT WILL CONTINUE) 1953					
<p>Studies on the relationships between Ca and Ra metabolism will continue. Means of estimating in situ radiation dosage to bone from deposited radium will be developed.</p>					

4002712

BUDGET NO.

	ACTUAL LAST YEAR 1951	ESTIMATED THIS FISCAL YEAR 1952	ESTIMATED NEXT FISCAL YEAR 1953
17. OPERATING COSTS			
(A) CONTRACT EXPENSE			
(1) DIRECT SALARIES	\$	\$	\$
(2) DIRECT MATERIALS & SERVICES			
(3) R & D SUBCONTRACTS			
(4) INDIRECT EXPENSE			
(5)			
SUB-TOTAL	_____	_____	_____
(B) NON-CONTRACT EXPENSE			
(1) SPECIAL REACTOR MATERIALS			
(2)			
SUB-TOTAL	_____	_____	_____
TOTAL COST	\$ _____	\$ _____	\$ _____

18. COST OF PLANT & EQUIPMENT DIRECTLY REQUIRED - NOT APPLICABLE

19. DIRECT MANPOWER (MAN YEARS)	NO. OF MAN YEARS	NO. OF MAN YEARS	NO. OF MAN YEARS
(A) SCIENTISTS & ENGINEERS			3.0
(B) OTHER TECHNICAL			2.0
(C) LOANED EMPLOYEES			
TOTAL	_____	_____	5.0

20. COMMENTS:

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4002713

PROJECT PROPOSAL AND AUTHORIZATION

1. PROJECT TITLE Surgical studies involving local, topical and interstitial application of radioisotopes.			2. DATE PREPARED 5/26/52		
3. BUDGET ACTIVITY NO. 6210	4. BUDGET ITEM NO. 8	5. CONTRACTOR'S NO. Same	6. METHOD AND TIME OF REPORTING PROGRESS		
7. CONTRACTOR-LABORATORY U. of C. Argonne National Laboratory		8. WORKING LOCATION Chicago	9. CONTRACT NO. AT-11-1-69 W-3100-0000-83		
10. PERSON IN CHARGE (CONTRACTOR'S PROJECT LEADER) Dwight E. Clark, M.D.			11. STARTING DATE OF PROJECT		
12. PURPOSE AND NEED (GIVE NARRATIVE DESCRIPTION OF PROJECT)					
<p>The surgical project is a broad one and is concerned with the development of better methods for local, topical and interstitial application of radioisotopes, the properties of which are specifically suited to the type of lesion under consideration. It is planned to investigate not only methods of application which favor local retention of the radioactivity, but also to develop criteria for the choice of isotopes in varying situations. The surgical project is further responsible for all biopsies performed in the course of clinical studies in the A.C.R.H., for the surgical care of patients requiring surgery and other emergencies, and for the pathology and radioautography.</p>					
13. RELATED PROJECTS (WITH SAME CONTRACTOR OR OTHERS)					
Projects 1, 4, 7.					
14. ACCOMPLISHMENTS LAST FISCAL YEAR (IF A CONTINUED PROJECT) 1951					
Experience with the techniques and problems involved have already been initiated.					
15. EXPECTED RESULTS THIS FISCAL YEAR 1952					
Continuation of clinical studies and therapeutic applications.					
16. ANTICIPATED PROBLEMS NEXT FISCAL YEAR (IF PROJECT WILL CONTINUE) 1953					
Develop the use of short-lived radioisotopes for implantation and injection.					

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BUDGET NO.

	ACTUAL LAST YEAR 1951	ESTIMATED THIS FISCAL YEAR 1952	ESTIMATED NEXT FISCAL YEAR 1953
17. OPERATING COSTS			
(A) CONTRACT EXPENSE			
(1) DIRECT SALARIES	\$	\$	\$
(2) DIRECT MATERIALS & SERVICES			
(3) R & D SUBCONTRACTS			
(4) INDIRECT EXPENSE			
(5)			
SUB-TOTAL	_____	_____	_____
(B) NON-CONTRACT EXPENSE			
(1) SPECIAL REACTOR MATERIALS			
(2)			
SUB-TOTAL	_____	_____	_____
TOTAL COST	\$ _____	\$ _____	\$ _____
18. COST OF PLANT & EQUIPMENT DIRECTLY REQUIRED - NOT APPLICABLE			
19. DIRECT MANPOWER (MAN YEARS)			
(A) SCIENTISTS & ENGINEERS	NO. OF MAN YEARS	NO. OF MAN YEARS	NO. OF MAN YEARS
(B) OTHER TECHNICAL			1.0
(C) LOANED EMPLOYEES			2.0
TOTAL	_____	_____	3.0
20. COMMENTS:			

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4002717

PROJECT PROPOSAL AND AUTHORIZATION

1. PROJECT TITLE Therapeutic Studies - High Energy Sources			2. DATE PREPARED 5/26/52	
3. BUDGET ACTIVITY NO. 6210	4. BUDGET ITEM NO. 10	5. CONTRACTOR'S NO. Same	6. METHOD AND TIME OF REPORTING PROGRESS	
7. CONTRACTOR-LABORATORY U. of C.		8. WORKING LOCATION Chicago	9. CONTRACT NO. AT-11-1-69	
10. PERSON IN CHARGE (CONTRACTOR'S PROJECT LEADER) James W. J. Carpender, M.D.			11. STARTING DATE OF PROJECT	
12. PURPOSE AND NEED (GIVE NARRATIVE DESCRIPTION OF PROJECT)				
<p>This project represents the application of the new high energy sources to patients selected by the staff of the A.C.R.H. It is not possible to formulate the project in any detail at the present time, except to say that a principal goal will be the rational utilization of the available radiation equipment for all types of patients with cancer, and in particular for those in whom conventional therapy is ordinarily unsuccessful.</p> <p>The energy sources which will be applied to the human being with cancer as the biological standardization in Project 9 proceeds are 2 MEV Van de Graaf electron beam generator, 1000 curie cobalt⁶⁰ source, the linear accelerator and the synchrocyclotron proton beam.</p>				
13. RELATED PROJECTS (WITH SAME CONTRACTOR OR OTHERS)				
Projects 9, 11, 12				
14. ACCOMPLISHMENTS LAST FISCAL YEAR (IF A CONTINUED PROJECT) 1951				
Work on Proton beam source has proceeded to point which indicates feasibility of bringing the beam out for biologic and therapeutic studies. Planning and fabrication of the other radiation sources have continued.				
15. EXPECTED RESULTS THIS FISCAL YEAR 1952				
Actual installation and beginning biologic and therapeutic studies with high energy sources.				
16. ANTICIPATED PROBLEMS NEXT FISCAL YEAR (IF PROJECT WILL CONTINUE) 1953				
Continuation of biologic testing and therapeutic application.				

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PROJECT PROPOSAL AND AUTHORIZATION

1. PROJECT TITLE 170 Inch. Synchro-Cyclotron				2. DATE PREPARED 5/26/52	
3. BUDGET ACTIVITY NO. 6210	4. BUDGET ITEM NO. 11	5. CONTRACTOR'S NO. Same	6. METHOD AND TIME OF REPORTING PROGRESS		
7. CONTRACTOR-LABORATORY U. of C.		8. WORKING LOCATION Chicago	9. CONTRACT NO. AT-11-1-69		
10. PERSON IN CHARGE (CONTRACTOR'S PROJECT LEADER) L. Skaggs and J. W. J. Carpenter			11. STARTING DATE OF PROJECT		
12. PURPOSE AND NEED (GIVE NARRATIVE DESCRIPTION OF PROJECT) Synchro-Cyclotron The University of Chicago Synchro-Cyclotron is provided with means for rapidly shifting from one heavy particle to another. Protons, deuterons, and alpha particles ionize tissues, but there is reason to believe that the minute effects of this ionisation may be different and perhaps more beneficial than the ionisation produced by x-rays. We expect to be able to limit the radiated area precisely and this too will be of importance. With the addition of this instrument workers at these laboratories will be able to employ ionising agents as soft as the 20,000 volt radiation from a contact therapy x-ray machine and as hard as the 510 million volt alpha particles from the synchro-cyclotron. Between these extremes other instruments provide all the ranges of interest.					
13. RELATED PROJECTS (WITH SAME CONTRACTOR OR OTHERS)					
14. ACCOMPLISHMENTS LAST FISCAL YEAR (IF A CONTINUED PROJECT) 1951					
15. EXPECTED RESULTS THIS FISCAL YEAR 1952 Fundamental physical studies on depth dosage, isodose curves, and relative biological effectiveness of the proton, deuteron, and alpha beams will be done.					
16. ANTICIPATED PROBLEMS NEXT FISCAL YEAR (IF PROJECT WILL CONTINUE) 1953 Application of the fundamental physical studies to the experimental animal and therapeutic application of the instruments to the treatment of human cancer.					

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BUDGET NO.

	ACTUAL LAST YEAR 1951	ESTIMATED THIS FISCAL YEAR 1952	ESTIMATED NEXT FISCAL YEAR 1953
17. OPERATING COSTS			
(A) CONTRACT EXPENSE			
(1) DIRECT SALARIES	\$	\$	\$
(2) DIRECT MATERIALS & SERVICES			
(3) R & D SUBCONTRACTS			
(4) INDIRECT EXPENSE			
(5)			
SUB-TOTAL			
(B) NON-CONTRACT EXPENSE			
(1) SPECIAL REACTOR MATERIALS			
(2)			
SUB-TOTAL			
TOTAL COST	\$	\$	\$

18. COST OF PLANT & EQUIPMENT DIRECTLY REQUIRED - NOT APPLICABLE

19. DIRECT MANPOWER (MAN YEARS)	NO. OF MAN YEARS	NO. OF MAN YEARS	NO. OF MAN YEARS
(A) SCIENTISTS & ENGINEERS			2.5
(B) OTHER TECHNICAL			2.0
(C) LOANED EMPLOYEES			
TOTAL			4.5

20. COMMENTS:

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4002721

PROJECT TITLE Beam Direction Laboratory		2. DATE PREPARED 5/26/52 3/15/52	
3. BUDGET ACTIVITY NO. 6210	4. BUDGET ITEM NO. 12	5. CONTRACTOR'S NO. Same	6. METHOD AND TIME OF REPORTING PROGRESS
7. CONTRACTOR-LABORATORY Argonne National Laboratory U. of C.		8. WORKING LOCATION Chicago	9. CONTRACT NO. AT-11-1-69 W-300009-100-98
10. PERSON IN CHARGE (CONTRACTOR'S PROJECT LEADER) J. W. J. Carpender		11. STARTING DATE OF PROJECT	
12. PURPOSE AND NEED (GIVE NARRATIVE DESCRIPTION OF PROJECT)			
<p><u>Beam Direction Laboratory</u></p> <p>This project is designed for the fabrication of plaster and plastic moulds and retaining devices which are used for the more accurate directing of x-ray and particle beams. The work on this project will begin as soon as the first piece of equipment is in operation for patient treatment.</p>			
13. RELATED PROJECTS (WITH SAME CONTRACTOR OR OTHERS)			
14. ACCOMPLISHMENTS LAST FISCAL YEAR (IF A CONTINUED PROJECT) 1951			
15. EXPECTED RESULTS THIS FISCAL YEAR 1952			
16. ANTICIPATED PROBLEMS NEXT FISCAL YEAR (IF PROJECT WILL CONTINUE) 1953			
Development of special means for beam direction in rotational therapy			

	LAST YEAR 1951	FISCAL YEAR 1952	FISCAL YEAR 1953
17. OPERATING COSTS			
(A) CONTRACT EXPENSE			
(1) DIRECT SALARIES	\$	\$	\$
(2) DIRECT MATERIALS & SERVICES			
(3) R & D SUBCONTRACTS			
(4) INDIRECT EXPENSE			
(5)			
SUB-TOTAL			
(B) NON-CONTRACT EXPENSE			
(1) SPECIAL REACTOR MATERIALS			
(2)			
SUB-TOTAL			
TOTAL COST	\$	\$	\$

18. COST OF PLANT & EQUIPMENT DIRECTLY REQUIRED - NOT APPLICABLE

19. DIRECT MANPOWER (MAN YEARS)	NO. OF MAN YEARS	NO. OF MAN YEARS	NO. OF MAN YEARS
(A) SCIENTISTS & ENGINEERS			0.2
(B) OTHER TECHNICAL			1.0
(C) LOANED EMPLOYEES			
TOTAL			1.2

20. COMMENTS:

3. BUDGET ACTIVITY NO. 6210		4. BUDGET ITEM NO. 13	5. CONTRACTOR'S NO. Same	6. METHOD AND TIME OF REPORTING PROGRESS	
7. CONTRACTOR-LABORATORY U. of C. Argonne Cancer Research Hospital			8. WORKING LOCATION Chicago	9. CONTRACT NO. AT-11-1-69 W-11-1-69	
10. PERSON IN CHARGE (CONTRACTOR'S PROJECT LEADER) L. Skaggs			11. STARTING DATE OF PROJECT		
12. PURPOSE AND NEED (GIVE NARRATIVE DESCRIPTION OF PROJECT)					
<p>Facilities will be provided for research in the general field of radiation physics as applied to the special problems of the Argonne Cancer Research Hospital and for instruction of physicians, physicists, and technicians in the applicable theory and technique</p> <p>The practical problems of health physics personnel monitoring will be accomplished by this group.</p>					
13. RELATED PROJECTS (WITH SAME CONTRACTOR OR OTHERS)					
14. ACCOMPLISHMENTS LAST FISCAL YEAR (IF A CONTINUED PROJECT) 1951					
15. EXPECTED RESULTS THIS FISCAL YEAR 1952					
16. ANTICIPATED PROBLEMS NEXT FISCAL YEAR (IF PROJECT WILL CONTINUE) 1953					

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	ACTUAL LAST YEAR 1951	ESTIMATED THIS FISCAL YEAR 1952	ESTIMATED NEXT FISCAL YEAR 1953
17. OPERATING COSTS			
(A) CONTRACT EXPENSE			
(1) DIRECT SALARIES	\$	\$	\$
(2) DIRECT MATERIALS & SERVICES			
(3) R & D SUBCONTRACTS			
(4) INDIRECT EXPENSE			
(5)			
SUB-TOTAL			
(B) NON-CONTRACT EXPENSE			
(1) SPECIAL REACTOR MATERIALS			
(2)			
SUB-TOTAL			
TOTAL COST	\$	\$	\$

18. COST OF PLANT & EQUIPMENT DIRECTLY REQUIRED - NOT APPLICABLE

19. DIRECT MANPOWER (MAN YEARS)	NO. OF MAN YEARS	NO. OF MAN YEARS	NO. OF MAN YEARS
(A) SCIENTISTS & ENGINEERS			2.5
(B) OTHER TECHNICAL			2.0
(C) LOANED EMPLOYEES			
TOTAL			4.5

20. COMMENTS:

Cooperating University Program

5/1-3/54 24442

3. BUDGET ACTIVITY NO. 6210	4. BUDGET ITEM NO. 14	5. CONTRACTOR'S NO. Same	6. METHOD AND TIME OF REPORTING PROGRESS
7. CONTRACTOR-LABORATORY U. of C. Argonne National Laboratory		8. WORKING LOCATION Chicago	9. CONTRACT NO. A-11-1-69 W-11-1-69
10. PERSON IN CHARGE (CONTRACTOR'S PROJECT LEADER) Robert Hasterlik		11. STARTING DATE OF PROJECT	
12. PURPOSE AND NEED (GIVE NARRATIVE DESCRIPTION OF PROJECT)			
<p>Space, personnel, and equipment will be available in the Argonne Cancer Hospital for such programs as are approved from participating Universities.</p>			
13. RELATED PROJECTS (WITH SAME CONTRACTOR OR OTHERS)			
14. ACCOMPLISHMENTS LAST FISCAL YEAR (IF A CONTINUED PROJECT) 1951			
15. EXPECTED RESULTS THIS FISCAL YEAR 1952			
16. ANTICIPATED PROBLEMS NEXT FISCAL YEAR (IF PROJECT WILL CONTINUE) 1953			

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400272h

BUDGET NO.

	ACTUAL LAST YEAR 1951	ESTIMATED THIS FISCAL YEAR 1952	ESTIMATED NEXT FISCAL YEAR 1953
17. OPERATING COSTS			
(A) CONTRACT EXPENSE			
(1) DIRECT SALARIES	\$	\$	\$
(2) DIRECT MATERIALS & SERVICES			
(3) R & D SUBCONTRACTS			
(4) INDIRECT EXPENSE			
(5)			
SUB-TOTAL	_____	_____	_____
(B) NON-CONTRACT EXPENSE			
(1) SPECIAL REACTOR MATERIALS			
(2)			
SUB-TOTAL	_____	_____	_____
TOTAL COST	\$ _____	\$ _____	\$ _____
18. COST OF PLANT & EQUIPMENT DIRECTLY REQUIRED - NOT APPLICABLE			
19. DIRECT MANPOWER (MAN YEARS)			
	NO. OF MAN YEARS	NO. OF MAN YEARS	NO. OF MAN YEARS
(A) SCIENTISTS & ENGINEERS			3.0
(B) OTHER TECHNICAL			3.0
(C) LOANED EMPLOYEES			
TOTAL	_____	_____	6.0
20. COMMENTS:			

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4002725

PROJECT PROPOSAL AND AUTHORIZATION

1. PROJECT TITLE Hospital Operation and Patient Care			2. DATE PREPARED 5/26/52 8/3/52		
3. BUDGET ACTIVITY NO. 6210	4. BUDGET ITEM NO. 15	5. CONTRACTOR'S NO. Same	6. METHOD AND TIME OF REPORTING PROGRESS		
7. CONTRACTOR-LABORATORY U. of C. General Hospital Laboratory U. of C.		8. WORKING LOCATION Chicago	9. CONTRACT NO. AT-11-1-69 WJG-100-200-038		
10. PERSON IN CHARGE (CONTRACTOR'S PROJECT LEADER) Ray E. Brown, Superintendent		11. STARTING DATE OF PROJECT			
12. PURPOSE AND NEED (GIVE NARRATIVE DESCRIPTION OF PROJECT)					
<p>The hospital will provide facilities and services necessary for patient care. Patients will be admitted for the purpose of carrying on clinical investigation, having the primary intent of furthering knowledge in the fields of the cause, diagnosis, and treatment of cancer;</p>					
13. RELATED PROJECTS (WITH SAME CONTRACTOR OR OTHERS)					
14. ACCOMPLISHMENTS LAST FISCAL YEAR (IF A CONTINUED PROJECT) 1951					
15. EXPECTED RESULTS THIS FISCAL YEAR 1952					
16. ANTICIPATED PROBLEMS NEXT FISCAL YEAR (IF PROJECT WILL CONTINUE) 1953					

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4002728

BUDGET NO.

	ACTUAL LAST YEAR 1951	ESTIMATED THIS FISCAL YEAR 1952	ESTIMATED NEXT FISCAL YEAR 1953
17. OPERATING COSTS			
(A) CONTRACT EXPENSE			
(1) DIRECT SALARIES	\$	\$	\$
(2) DIRECT MATERIALS & SERVICES			
(3) R & D SUBCONTRACTS			
(4) INDIRECT EXPENSE			
(5)			
SUB-TOTAL			
(B) NON-CONTRACT EXPENSE			
(1) SPECIAL REACTOR MATERIALS			
(2)			
SUB-TOTAL			
TOTAL COST	\$	\$	\$
18. COST OF PLANT & EQUIPMENT DIRECTLY REQUIRED - NOT APPLICABLE			
19. DIRECT MANPOWER (MAN YEARS)	NO. OF MAN YEARS	NO. OF MAN YEARS	NO. OF MAN YEARS
(A) SCIENTISTS & ENGINEERS			4.0
(B) OTHER TECHNICAL			18.0
(C) LOANED EMPLOYEES			
TOTAL			22.0
20. COMMENTS:			

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4002729

PROJECT PROPOSAL AND AUTHORIZATION

1. PROJECT TITLE Training Program			2. DATE PREPARED 5/26/52 3/23/52		
3. BUDGET ACTIVITY NO. 6210	4. BUDGET ITEM NO. 16	5. CONTRACTOR'S NO. Same	6. METHOD AND TIME OF REPORTING PROGRESS		
7. CONTRACTOR-LABORATORY U. of C. Argonne National Laboratory		8. WORKING LOCATION Chicago	9. CONTRACT NO. AT-11-1-69 AT-11-1-69		
10. PERSON IN CHARGE (CONTRACTOR'S PROJECT LEADER) Director & Staff			11. STARTING DATE OF PROJECT		
12. PURPOSE AND NEED (GIVE NARRATIVE DESCRIPTION OF PROJECT)					
<p>The advanced training of personnel will be provided by the specialized facilities available for clinical investigation, developmental and experimental work in the field of cancer (on humans and animals) with radioactive materials and other sources of radiant energy including such biological research ancillary thereto as may be indicated.</p>					
13. RELATED PROJECTS (WITH SAME CONTRACTOR OR OTHERS)					
14. ACCOMPLISHMENTS LAST FISCAL YEAR (IF A CONTINUED PROJECT) 1951					
15. EXPECTED RESULTS THIS FISCAL YEAR 1952					
16. ANTICIPATED PROBLEMS NEXT FISCAL YEAR (IF PROJECT WILL CONTINUE) 1953					

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4002730

BUDGET NO.

	ACTUAL LAST YEAR 1951	ESTIMATED THIS FISCAL YEAR 1952	ESTIMATED NEXT FISCAL YEAR 1953
17. OPERATING COSTS			
(A) CONTRACT EXPENSE			
(1) DIRECT SALARIES	\$	\$	\$
(2) DIRECT MATERIALS & SERVICES			
(3) R & D SUBCONTRACTS			
(4) INDIRECT EXPENSE			
(5)			
SUB-TOTAL			
(B) NON-CONTRACT EXPENSE			
(1) SPECIAL REACTOR MATERIALS			
(2)			
SUB-TOTAL			
TOTAL COST	\$	\$	\$

18. COST OF PLANT & EQUIPMENT DIRECTLY REQUIRED - NOT APPLICABLE

19. DIRECT MANPOWER (MAN YEARS)	NO. OF MAN YEARS	NO. OF MAN YEARS	NO. OF MAN YEARS
(A) SCIENTISTS & ENGINEERS			
(B) OTHER TECHNICAL			
(C) LOANED EMPLOYEES			
TOTAL			

Included in other programs.

20. COMMENTS:

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4002731

May 16, 1952

Memorandum Re: Argonne Cancer Research Hospital
Approved Operating Budget for
the Fiscal Year 1952

A copy of the attached operating budget was turned over to Mr. Thaggard on May 14, 1952 with a request that he review same and advise whether the figures are in accord with previous understandings reached with the Commission.

WTH

WBH:ab
cc: Mr. W. L. Thaggard

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4002732

*ACRH
Meeting Conference
AT (M) 69*

UNITED STATES
ATOMIC ENERGY COMMISSION
CHICAGO OPERATIONS OFFICE
P. O. Box 6140A
CHICAGO 80, ILLINOIS

BUSINESS MANAGER
Spec. Projects
R E C E I V E D

MAY 9 1952

W.B.H. W.B.H.
J.L.J. _____
W.V.L. _____
I.E.F. _____
REFER TO _____

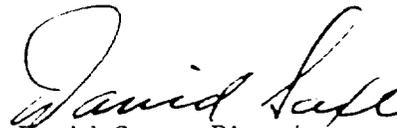
May 8, 1952

Mr. W. B. Harrell, Business Manager
The University of Chicago
5801 Ellis Avenue
Chicago, Illinois

Dear Mr. Harrell:

We are transmitting the financial plan for fiscal year 1952 for the operation of the Argonne Cancer Research Hospital under Contract AT(11-1)-69.

Very truly yours,



David Saxe, Director
Development Contracts Division

Enclosure:
Financial Plan for Fiscal Year 1952 (in duplicate)

Copy turned over to Mr. Zappard on 5-14-52
W.B.H.

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4002733

Change No. 2

U. S. ATOMIC ENERGY COMMISSION
Chicago Operations Office

Schedule A

Financial Plan - Fiscal Year 1952
APPORTIONMENT OF FUNDS TO BE ALLOTTED

Chicago
Area

April 28, 1952
Date

The University of Chicago - AT(11-1)-69
Contractor

Limitation (1)	Total Rev. Allotment (2)	By Quarters			
		First (3)	Second (4)	Third (5)	Fourth (6)
01 All Other Cash	1,239,000	275,000	-0-	-0-	964,000

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400273

Change No. 2

U. S. ATOMIC ENERGY COMMISSION
Chicago Operations Office

Schedule

Financial Plan - Fiscal Year 1952

APPORTIONMENT OF ACCRUED COSTS

Chicago
Area

April 28, 1952
Date

The University of Chicago - AT (11-1) 69
Contractor

Item No. (1)	Revised Total (2)	Through Third Quarter (3)	Fourth Quarter (4)
-----------------	----------------------	---------------------------------	-----------------------

Operations (See Schedule B for Activity Breakdown)

6000 - Total Accrued Costs - Operations 130,000

Plant & Equipment

9600 - 6-421-9-002 575,000

9950 -0-

Total Accrued Costs - Plant & Equipment 575,000

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4002735

Change No. 2

U. S. ATOMIC ENERGY COMMISSION
Chicago Operations Office

Schedule B

Financial Plan - Fiscal Year 1952

Summary

ChicagoApril 28, 1952

Area

Date

The University of Chicago - AT (11-1) 69

Contractor

Item No.	Previous Total	Change	Revised Total
(1)	(2)	(3)	(4)
<u>Operations</u>			
Accrued Costs			
6000 - 6210 - Total Accrued Costs - Operations	300,000	- 170,000	130,000
<u>Increase or Decrease:</u>			
Stores Inventory	+/ 34,000		+/ 34,000
Other Special Materials Inventory	+/ 7,000		+/ 7,000
Operating Working Capital		+/ 50,000	+/ 50,000
Unliquidated Obligations	+/ 994,600	- 244,600	+/ 750,000
Area Transfers	- 7,000		- 7,000
Net Obligations for Operations	1,323,600	- 364,600	964,000
<u>Plant & Equipment</u>			
Obligations			
9600 - 6-421-9-002	275,000		275,000
9950	55,000	- 55,000	-0-
Net Obligations for Plant & Equipment	330,000	- 55,000	275,000
Grand Total - Net Obligations - Obligation Authority Allotted	1,658,600	- 419,600	1,239,000

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