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1. [illegible] 5 PAGES
COPY NO. 8 OF 8 SERIES a

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March 5, 1947 SRS/emc

The Research Division

S. R. Sapirie, Director of Operations

ANALYSIS [illegible] DEVELOPMENT PROGRAM FOR CLINTON LABORATORIES

SYMBOL: AECZ

RHTG (U) 40,993
BOX # 215

1. Reference is made to the following documents:

a. Monsanto Chemical Company - Budget for Fiscal Year 1948.

b. Appendix to Budget for Fiscal Year 1948.

c. Letter from Mr. Nun to Mr. Williams dated February 11, 1947.

d. Memorandum from Lt. Col. Leber to Mr. Williams dated February 14, 1947, subject: Development Plan for Clinton Laboratories.

e. Monsanto Chemical Company proposed program for Fiscal Year ending June 30, 1947 dated June 4, 1946.

f. Memorandum from Colonel Nichols to the Deputy District Engineer dated 12 August 1946 defining scope of approved program for Clinton Laboratories.

2. An analysis of the proposed construction program for Clinton Laboratories is dependent upon securing answers to questions regarding A.E.C. policy as follows:

a. Will all or part of Clinton Laboratories be moved to the Y-12 Area?

b. Will the approved over-all program for Clinton Laboratories include the following projects:

(1) Radio Isotope Building? OK

(2) Metrogeneous File? OK

(3) Power File? ?

(4) Van de Graaff machine? [illegible]

(5) Betatron Unit? [illegible]

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The Research Division March 6, 1947

J. M. Sapirie, Director of Operations

ANALYSIS OF DEVELOPMENT PROGRAM FOR CLINTON LABORATORIES

SYMBOL: ASCZ

(6) Cyclotron?

(7) Linear Accelerator?

(8) Research Center?

c. The following activities are closely related to the over-all program, and their justification and scope can be determined only after the over-all program is defined by securing answers to 2 b above:

(1) Railroad (This can be justified only in the event the entire over-all program is approved).

(2) Water supply system.

(3) Sewage disposal system.

(4) Steam power plant.

(5) Roads, streets, and walks.

(6) Electric power supply system.

(7) Fences.

(8) Restricted Area control station.

(9) Service Buildings.

d. In the event all or a major portion of the over-all program is approved, it will be necessary to determine, as a matter of policy, the rate of speed of the development program, and the order of priority of the major items within the over-all program.

3. A number of facilities included in the budget request are required for the present Clinton Laboratories program irrespective of the answers to the questions regarding the over-all program listed in 2 b above. These are summarized as follows:

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The Research Division March 5, 1947

S. [illegible] Sapirie, Director of Operations

ANALYS[illegible] [illegible] [illegible] [illegible] LABORATORIES

SYMBOL: ANCZ

PLOT PLAN NUMBER	PROJECT
1 and 10	Addition to Chemistry Building 706-A (Including conference room)
3	Temporary Shop Facilities
4	Install sprinkler system in some existing buildings (limited)
6	Cafeteria
9	Temporary Boilers at Building 706-A
21	Central Substation (Needed for rolling mill at Metalurgical Building)
25	Solvent acid and dry bulk storage
39	Central shop building (one only)

4. The schedule of design work for the construction program at Clinton Laboratories as attached to Mr. Lum's letter of February 11, 1947 is considered to be optomistic. A more realistic estimate of the time required for design and construction of the higher priority jobs on the Monsanto program are shown on the attached list. Reference is made to the plot plan number for each job as shown in the Appendix for the Budget for Fiscal Year 1948. A key reference is also shown for each job that is related to a policy determination.

5. Insufficient information is available to permit an accurate review of the estimates of cost. As a general rule the preliminary cost estimates provided by the Monsanto Chemical Company have been approximately 15% to 30% low. The increased costs are generally due to the addition of costly refinements to the scope of the jobs rather than to inaccuracy in the original cost estimates.

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ANALYSIS OF DEVELOPMENT PROGRAM FOR CLINTON LABORATORIES

SYMBOL: AECZ

6. The schedule of design work attached to Dr. Lum's letter of February 11 indicates the assignment of responsibility of the design work for the individual projects. This question is not primarily related to a review of a budget request. However, it is believed that since Monsanto Chemical Company has stated their intent in the budget request, specific recommendations should be made by this office.

a. At the present time design work is being done by five organizations:

(1) General Engineering Department (Responsible to St. Louis office)

(2) Project Department (Responsible to the Executive Director of Clinton Laboratories)

(3) Holabird & Root (Lump Sum Architect-Engineer Contractors)

(4) Kellex Corporation (C.P.F.F. Architect-Engineer Contractors)

(5) J. A. Jones Construction Company (C.P.F.F. Construction Contractors)

This division of responsibility for design has resulted in confusion and delay. This is evidenced by the delay in completing the preparation of plans for many of the items authorized for design in Colonel Nichols' memorandum of 12 August 1946.

b. It is proposed that Monsanto Chemical Company limit the activity of their direct engineering work to a single department (General Engineering) to be responsible for collecting basic data and service requirements to be turned over to a single Architect-Engineer Contractor (Kellex Corporation) for preparation of detail plans and specifications. This department would also be responsible for coordinating the design work and for liaison between the Architect-

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SYMBOL: AECZ

Engineer and the scientific personnel of Clinton Laboratories, and for checking of the plans and specifications prepared by the Architect-Engineer Contractor. It is proposed that no additional work be assigned to Holabird & Root, and that they be given sufficient basic data to permit early completion of the work now assigned to them. It is further proposed that the engineering work now assigned to the Project Department be withdrawn and be assigned to the Architect-Engineer when it is approved for design. If retained at all, the Project Department's engineering activities should be limited to those connected with routine maintenance and operations and should not be related directly to the construction program.

7. Recommendations are hereby made as follows:

a. That answers to the questions of policy, enumerated in paragraph 2 above, be secured and made available to the Monsanto Chemical Company and to this office as soon as practicable.

b. That the facilities needed for the present program as listed in paragraph 3 above be approved for immediate design and early construction.

c. That any reply to the Monsanto Chemical Company's Budget Proposal for the Fiscal Year 1948 include a request that the Engineering Organization be streamlined in accordance with the proposal contained in paragraph 6 b above.

1 Attachment
List

cc: W. P. Cornelius
Lt. Col. W. P. Leber

Distribution:
Cys. 1 & 2 - Addressee
Cy. 3 - W. P. Cornelius
Cys. 4 - Lt. Col. W. P. Leber
Cys. 5 & 6 - Classified Files
Cys. 7 & 8 - S. R. Sapirie's File

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March 5, 1947

PLOT PLAN NO.	PROJECT TITLE	WAY REF.	ESTIMATED DATE AVAILABLE ON TIME REQD. DESIGN	CONSTRUCTION	REMARKS
1	Addition to Chem. Bldg. 706A	3	May 1, 1947	9 months	
2	Van de Graaff	2b(4)	June 15, 1947	6 months	
3	Temporary Shop Facilities	3	April 1, 1947	2 months	
4	Sprinkler Systems	3	July 1, 1947 (partial)	5 months	Should be limited
5	Additional Physics Lab. [illegible]	2a			No urgency-Consider substitute space
6	Cafeteria	3	May 15, 1947	5 months	New bldg. instead of remodelling job
7	Facilities for Prod. of Fission Products	-	-	April 15, 1947	Approved
8	Special Equip. for [illegible] Size Exp. 2.6	-	-	August 1, 1947	Approved
9	Temporary Pillars 706A	3	Feb. 28, 1947	2 months	
10	New Conference Room 706A	3	-	-	Same as 1 above. Should be together
11	North [illegible] 703C	2	2 months	3 months	Office Bldg. Addition
12	Warehouse [illegible] Stor. [illegible]	2	30 days	2 months	
13	Removal Y-12 Bldgs. & Inst. Equip.	2a	4 months	3 months	
14	Metallurgy Bldg.	-	-	July 1, 1947	Approved
15	Health Physics	2a	-	-	Very low priority
16	Radio-Isotope Bldg.	2b(1)	June 1, 1947	15 months	
17	Heterogeneous Pile	2b(2)	10 months	31 months	Construction could overlap design 6 months/
18	Power Pile	2b(3)	12 months	24 months	
19	Betatron	2b(8)	5 months	9 months	Design not started for bldg. but equip. on order/
[illegible]	Power Plant Facilities	2c(4)	5 months	12 months	
[illegible]	Central Substation	3	June 1, 1947	6 months	Needed for rolling mill at Metalurgical Bldg.
22	Water filtration plant [illegible] other [illegible].3.	2c(2)	5 months	10 months	
23	Sewage Disposal System	2c(5)	4 months	1[illegible] months	
24	Replace Barbed Wire Fences	2c(7)	-	-	Low priority-can be scheduled as needed.
25	Solvent Acid & Dry Bulk Storage	3	3 months	6 months	
26	Postum Plant	-	-	-	Not at this site.
27	Permanent Research Center	2b(8)	Oct. 1, 1947	-	Site Plan Only
28	Restricted Area Control Station	2c(8)	2 months	3 months	
29	Hot Pilot Plant	-	-	Aug. [illegible], 1947	Approved
30	Shop Equipment	2b(9)	-	-	For Research Center - Future

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PLOT PLAN No.	PROJECT TITLE	*KEY REF.	ESTIMATED DATE AVAILABLE OR TIME REQD. DESIGN	CONSTRUCTION	REMARKS
31	Install Railroad to X-10	2e(1)	3 months	8 months	Should be built soon if at all, but justified only for total program.
32	Power Pile Experimental Facilities	2b(3)	-	-	Monsanto Design and Construction
-	1000 Proj. Testing Facilities	2b(2)	-	-	Monsanto Design and Construction
-	Permanent Research Center	2b(8)	18 months	36 months	Distant Future
35	Cyclotron	2b(6)	-	-	Low Priority
36	Linear Accelerator	2b(7)	-	-	Low Priority
37	Add. to River Pump House and Pile Line	2e(2)	3 months	8 months	
38	Plant Roads, Sidewalks & Sewers	2e(5)	-	-	Can be scheduled as needed
39	Central Shops Buildings	3	4 months	8 months	One only at this time
40	Receiving and Storage Buildings	2e(9)	3 months	6 months	
41	Laundry, Garage & Auto. Storage	2e(9)	6 months	1[illegible] months	
42	Physics Research Program incl. Equip.	-	-	-	Monsanto study, design and procurement
43	Alter Existing Research Facilities	-	-	-	Monsanto design and construction
44	Install additional Metallurgy Equip.	-	Feb. 1948	-	Monsanto Design and Construction
45	Add. Lab. Facilities-Bldg. 106	-	Sept. 1947	4 months	
	New Feeders Central Substation	2b(8)	-	-	Future - Research Center
47	Service Bldg.	2e(9)	3 months	8 months	Low Priority
48	Criticality & Research Bldg.	2b(8)	-	-	Future
49	Second 2500 GPM Water Filt. Plt.	2e(2)	-	-	Future
50	Second Steam Plt. Addition	2e(4)	-	-	Future

* Key Ref. pertains to appropriate item in March 5, 1947 memorandum. Items not referenced are part of the present research operating program, or else have been approved already

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