

TETANUS TOXOID PROJECT

CONSULTANCY REPORT ON TETANUS TOXOID
PRODUCTION LABORATORY

NATIONAL INSTITUTE OF HEALTH ISLAMABAD
PAKISTAN
REPORT NO. 1
MARCH - 1990

Maj.Gen(Retd) M.I.Burney - MBBS,FCPS,FRC
PATH(LONDON)

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1ST REPORT ON TETANUS TOXOID PRODUCTION LABORATORY
NATIONAL INSTITUTE OF HEALTH, ISLAMABAD.

BY

Maj.Gen.(Retd) M.I. Burney - MBBS, FCPS, FRC Path (London)

28th March 1990

Situation analysis on 8th Feb 1990:

Time schedule was badly disturbed as can be seen from the progress state given below :

- A. Construction of main building and remains of old building.
- Only pillar and beam construction was completed, the incomplete Mezzanine had openings which were made without consulting the air conditioning plans, which too were not finalised.
 - The work was said to be held up because of a decision on a wall separating the Toxoiding process and purification facility.
 - The flow lines of personell, material, process, areas of sterility and positive pressures were not well understood by P.W.D. because of lack of direction due to untimely death of Mr. Binnerts.
 - Hot water and cold water lines were laid out according to instructions of Project Manager and approval of Chief B.P.D. These were tested also.
 - Open drain was still unplastered as slabs were to be made after finalization of plastering of drains.
 - Service drawings which were to be finalized in Canada remained unapproved which would have been scrutinized by July 89.
 - The measurements as depicted on blue prints did not match actual dimensions on the ground e.g. culture room was shown as 12'x6" whereas actually it was 11'-5" x 5' .= 6" Laminar flow which was to be installed in this room measured 6' in length which in any case could not be fitted in this room. The other items of equipment could also not be installed in this small room hence the necessity of revising the dimensions of laminar flow/Biosafety Cabinet, as well as increasing the length of the room by taking space from corridor.

- Old service lines and electric wires and conduites were hanging all over in the old building, and there were openings in the floor directly over the old basement, this state of affairs was also due to lack of decision making which needed the advice of consultant.
- Stairs to the Mezzanine floor could not be constructed due to lack of decision and recommendation of consultant on the technical aspect of filtered and conditioned air supply.

B. External Services :

The situation remained as in May 89 i.e. functionalization of steam boilers, the standby generator and electric substation was non operational and required reorientation of equipments in the plant room.

C. Internal Services :

The situation was the same as in May 89. Final decision on load of electricity, the distribution according the requirement of equipment, location of distribution points, and service outlets were not identified. Same was the case regarding steam, compressed air and sui gas.

Action Taken :

1. Meeting with Chief B.P.D. alongwith Project Manager, and local P.W.D. staff was arranged and decisions got approved by Executive Director N.I.H.
 - a) The wall which was to be seperating the toxoiding operation and purification of toxoid was considered unnecessary and such a wall would pose problems for process and material flow.
 - b) The old building remnants of unnecessary walls, redundant wires, pipes were to be cleared off.
 - c) The holes leading to basement of old building were to be filled.
 - d) Mezzanine was to be completed.
 - e) Actual measurements of rooms were to be made by P.W.D. and drawings were to be corrected and updated.
 - f) After a repeat check of water pipes lying on the floor, semi finish of floor was to be carried out.

- g) Exterior walls to be erected without plastering in specified areas only.
- h) Clear instructions be given to supervisory staff to do only brick work of partition walls with provision of service lines. It was to be ensured that a perfect coordination is maintained with civil and E/M staff.

2. Drawings of the following requirements were made after thorough technical discussions. These drawings were discussed with Dr. Goldman on 1st March 90 and were faxed to Dr. Weber in Canada for comments.

- a) Areas of sterility distribution viz. (i) sterile non-contaminated (ii) sterile contaminated (iii) clean areas and (iv) locations of air locks were demarcated.
- b) Material flow to be clearly understood by all concerned indicating flow of dirty material, contaminated material and sterilized material.
- c) Personnel movement according to sterility areas already identified were charted.
- d) After long discussion and consultants advice a process flow diagram was agreed which may need comments by Dr. Weber (International expert).
- e) Areas of air pressure distribution indicating clearly high pressure medium pressure and ambient pressure areas were identified. Location of Hepa filters both on inlets and outlets were identified as on these diagrams the air conditioning system was to be based, which was not carried out even at this late stage. (To be discussed with Dr. Weber)
- f) The design presented by air conditioning staff of P.W.D. was completely unacceptable and physically impossible. The beam separating the old building and Mezzanine floor was not taken into consideration at all and only lines of ducting drawn on the blue prints of the building. P.W.D. staff when taken to the Mezzanine floor understood the point.

Finally it was decided a high powered meeting involving, Chief Engineer PWD, Suptd Engg Civil, S.E. Electrical, XEN Civil, XEN Elect., Asstt Eng. Civil, A.E. Elect., Subs Engineers alongwith N.I.H. development deptt staff be called to consider the following issues. This action had the approval of Executive Director N.I.H.

Issue to be discussed :

- a) Air conditioning ducting design and provision of Hepa filters.
- b) Compressed air distribution.
- c) Electring wiring and load identification.
- d) Steam and gas distribution.
- e) Hooking design with plant room for steam, compressed air and power.
- f) Partition walls, road finishing.
- g) Floor laying time schedule.
- h) Aluminum doors and windows progress.
- i) Provision of stair case for Mezzanine.

The report is annexed (1)

3. External training :

Progress has been made in this area, but has to be expedited. Ms Mumtaz and Mr. Abid would be leaving soon for Netherland. Their documents have been completed and the action is on the part of embassay of Netherland. Tickets are awaited. Mr. Arfan's case has been cleared by M/O Health and is received in E.A.D. for final clearance.

4. Fermenter :

The fermenter along with ancillaries have been received in N.I.H. The packages have been cleared from customs but inspection for insurance has still to be carried out.

5. Ancillary Equipment(funded by US-AID) has been scrutinized.

Some changes viz.

- a) Replacement of laminar flow cabinets with biohazard cabinets has been recommended (also supported by Dr. Weber).
- b) Hepa filters which were missed in the original list have been

included.

- c) Toxoid bulk which formed integral part of the project and was included in computerised Activity Time frame chart (Appendix 3 of Mr. Binnert's report of May 29 1989 as C-3 has been requested vide letter at annex. (2)

Meeting with USAID Dy. Chief Commodities (Mr. Stephen Claus) was very fruitful, and important issues were raised in this meeting.

6. Equipment to be procured by NIH :

Action is in hand by deptt concerned in NIH for the procurement of the listed items. Finance and Accounts Officer (FAO) of NIH had some reservations which have been discussed and consultant has clarified necessary financial objections. Present position is shown at annex (3).

7. Project Cost :

- a) N.I.H. - Air conditioning and air filtration system was not understood by P.W.D. in 1987 and their estimates were extremely low. A revision of P.C.1 is being made giving justifications for cost acceleration.
- b) USAID : Extraordinary delay and snail speed progress made by this vital project for P.H.C. and child survival goals achievement has put the project into jeopardy. Now it has been put on the rails again but two things would be required.
 - 1) Extension of the project completion period due to unavoidable circumstances .ie untimely death of foreign consultant and non availability of a National Consultant, having know how and understanding of local conditions. This project is not a "Technology Transfer" but a nationally executed vaccine production facility having USAID support.
 - 2) Full availability of funds required for the project.

8. Revised Activity-Time Chart which has been prepared after thorough discussions and personal guidance given to N.I.H. Technical/Administrative staff and P.W.D. The time frame has been formulated by a PERT network analysis in view of the present circumstances .

Evolution of new strategy has enabled to identify the critical path and the slack periods of the project.

The possibility of starting intermediate production from the 'bulk toxoid' immediately after the installation of filling, stoppering capping facilities and washing/sterilizing equipment can be considered to enhance the time schedule - needs discussion with Dr. Weber along with Revised Activity-Time Frame (Annex 4).

9. Progress report by Project Manager is annexed at Annex-5.



M.I. BURNEY
National Consultant (USAID)
N.I.H. Islamabad.

Dated : 28th March 1990.

MINUTES OF THE MEETING HELD ON 18-02-1990
IN THE COMMITTEE ROOM OF NIH, ISLAMABAD,
TETANUS TOXOID (USAID) PROJECT

A meeting was held in the Committee Room of NIH, Islamabad, on 18-02-1990 at 1000 hrs. under the Chairmanship of Maj.Gen(Retd) M.I. Burney, National Consultant ^{to US AID} in connection with the progress of Tetanus Toxoid Project at NIH, Islamabad.

The following officers/officials attended the meeting:-

- 1. Maj. Gen.(Retd) M.I. Burney, Chairman
USAID Consultant.
2. Ch. Mohammad Rafique, Chief Engineer North,
Pak. P.W.D.
3. Mr. Zafar Ali, Chief, BPD, NIH, Isl-amabad.
4. Mr. Arfan Mahmood, SSO, BPD, NIH, Islamabad.
5. Mr. Mohammad Riaz, S.E. E/M, Pak. PWD.
6. Mr. Zahid Pervez, E.E. (E/M), Pak. PWD.
7. Mr. Qamar Shah Khan, XEN, Civil, Pak.PWD.
8. Mr. Ijaz Hussain Memon, A.E.E., Pak.PWD.
9. Mr. Mohammad Naeem Akhtar, A.E.E, Pak.PWD,
10. Mr. Ijaz Ahmed Khan, A.E. (E/M), PWD.
11. Mr. Arshad Javed, Sub Engr. Civil.
12. Mr. Mohammad Younas Khan, Sub Engr. E/M,
13. Mr. Khalid Mansoor, Sr. Accountant, Dev. Section.

The following points were discussed:-

1. Compressed air provision of
2. Air conditioning Ducting & provision of Hepa Filter
3. Elect. wiring (Power & ordinary)
4. Steam Line & Gas Line layout & supply
5. Hooking with Boiler Generator from Generator Station
(Polio)
6. Partition & side walls & road finishing
7. Floor laying & finishing with Mosaic
8. aluminium Doors/Windows progress
9. Provision of stair case for constructed mazzanine floor.

After the detail discussion the following have been mutually/unanimously agreed by the Pak. PWD both departments:-

- 1) Compressed Air: It will be provided from existing compressor lying in the basement of old Tetanus building which shall be shifted to Plant room. As such no need for revision in PC-I form regarding the provision of Compressor is necessary.
2. Air Conditioning: Pak. PWD was provided with all type of details instructions by the NIH Officers as per requirement and instructions of National Consultant (USAID)
Pak. PWD will get estimates by 25-02-90 from the contractor and will submit the same to NIH on 27-02-90.
3. Electrical Wiring: The details will be determined with the Pak.PWD, & NIH, and Pak PWD will finalize it in coordination with the Civil contractor of P.W.D. on Top priority basis. The specification & details of wiring was given to Mr. Younas, final drawing of which will be approved by E.D., NIH, in consultation with USAID consultant.
4. Steam Line Layout and Supply of Gas: The details given to Pak.PWD E/M department S.E. (E/M) will coordinate and cooperate personally with NIH officers & PWD Civil personnel.
5. Hooking with Boilers: The details given to Pak.PWD (E/M) Deptt. Hooking up of the lines with the new Boilers and also from the old existing steam lines, The problem if any, for hooking up from new Boiler will be sorted out by PWD in a shortest possible time as per assurance given by Chief Engineer & Supdt. Engineer (E/M).
6. Ducting of A/C: The drawings will be handed over by E/M Pak PWD to the Civil Deptt of PWD on 25-2-90 The Civil work will be started accordingly for the ducting by 1st week of March, 1990

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7. Partition wall: The partition walls excluding the middle walls to be completed immediately and XEN (Civil) assured that the walls will be completed within a week.
8. Floor laying & Finishing: The XEN (Civil) also assured that the floors of room in T.T. Building will be completed by the middle of March, 1990.
9. Alluminium Doors/Windows: The Chief Engineer instructed the XEN Civil that the orders for the purchase of alluminium Doors/windows must be placed well in time and the estimates of the above items will be checked and approved by the Chief Engineer personally.
10. Road Layout: The construction work of External roads will be started in 1st week of May, 1990 and will be completed by the end of May, 1990. Duct Accross the roads for steam etc. is to be laid down as per instructions keeping in view the expected load of crane and movement of other heavy vehicles for movement of machinery etc.
11. Stairs to Mazzanine: The instructions has been given to the Pak.PWD Civil for the stairs to Mazzanine floor by National Institute of Health. The Civil Engineers assured the completion of job according to demand & schedule.
- 12, Coordination: The Chief Engineer, Pak.PWD directed the Executive Engineers, both Civil & E/M that they will meet at the site every week and the progress report will be submitted to the Chief Engineer, as well as to the USAID consultant.

After submission of revised Estimates of Air Conditioning and Electrification etc. and some civil work detail by Pak.PWD, the NIH will start work on the revision of PC-I form for T.T. project building & Airconditioning as per recommendations of USAID Consultant (late Mr. **Binnerts** and National Consultant of USAID, Islamabad.

E.D(NIH)

c.c. All participants.


(ZAFAR ALI)
CHIEF,

F.1-18/89-BPD 834-

11 March, 1990.

Dr. (Mrs.) Heather W. Goldman,
Deputy Chief, Health, Population
and Nutrition,
USAID,
ISLAMABAD.

Subject: - TETANUS TOXOID PRODUCTION PROJECT OF
PROCUREMENT OF BULK PURIFIED TETANUS TOXOID.

Dear Madam,

I would like to refer to our discussion on
7th March, 1990 in your office, for procurement of above
material. Please find the following details and
specification of the material required:-

"Purified and Concentrated Tetanus Toxoid
having 4000 to 5000 LF Unit per ml".
Requirement is of 30 Lit. for processing of
3 batches.

Please also refer to my letter No.F.1-18/89-801
dated 11th February, 1990. The required material of
Tetanus Toxoid may please be procured from CLL Canada
or any other WHO recognized Institution of Europe/USA.

Your cooperation in the matter is appreciated.

With regards.

Yours sincerely,



H. L. BURNLEY
(H. L. BURNLEY)
NATIONAL CONSULTANT USAID.

*T.T. file
GA*

*Received
2/11*

TETANUS TOXOID (USAID) PROJECT, NIH.LIST OF ANCILLARY EQUIPMENT - PRESENT POSITION

<u>S.No.</u>	<u>Description</u>	<u>Qty.</u>	
<u>MEDIA PREPARATION</u>			
01.	Waterbath	01	Already purchased
02.	Analytical Balance.	01	-do-
03.	20 Litres Pyrex bottles wide mouth.	20	L.C will be opened in April, 1990.
04.	10 Litres Pyrex bottles wide mouth.	20	-do-
<u>MANUFACTURE OF PRODUCTION SEED</u>			
05.	Upright Freezer, -20°C 10 cft. capacity.	01	Under shipment.
06.	Hot Plate with Magnetic stirrer.	01	Already purchased
07.	Refrigerator 14 cft, +2 to +4°C.	01	-do-
08.	Table Model CO ₂ Incubator (anaerobic)	01	L.C will be opened in April, 1990.
09.	Laboratory Binocular Microscope.	01	Already purchased.
<u>PRODUCTION OF TOXIN</u>			
10.	Vacuum pump.	01	L.C. will be opened in April, 1990.
<u>PRODUCTION OF TOXOID</u>			
-	Incubator Room +35 to +37°C.	01	Under construction.
-	Cold Room +2 to +4°C	03	-do-
11.	20 Lit. Pyrex bottles	40	L.C will be opened later on.
<u>SERVICES:</u>			
12.	Steam Boiler, 2.5 ton.	01	Already purchased
13.	Stand-by Generator, 200 KVA, diesel operated, automatic start within 10 seconds from grid failure.	01	-do-

NATIONAL INSTITUTE OF HEALTH
REPORT TYPE : STANDARD LISTING

TETANUS TOXOID PLANT

U.S.A.I.D PROJECT

PRINTING SEQUENCE : Earliest Activities First

SELECTION CRITERIA : BB (BUILDING ERECTION)

PLAN I.D. : TTVAC VERSION 21

TIME NOW DATE : 1/MAY/89

ACTIVITY DESCRIPTION	EARLIEST START	EARLIEST FINISH	LATEST START	LATEST FINISH	DURATION	FLOAT
10- 20 BB1 : DET LOADS	1/MAY/89	29/MAY/89	1/MAY/89	29/MAY/89	25	0 †
10- 30 BB2 : IND OPN IN EXT WALLS	1/MAY/89	29/MAY/89	1/MAY/89	29/MAY/89	25	0 †
40- 65 BB3 : CONST EXT +D274	30/MAY/89	15/MAY/90	30/MAY/89	15/MAY/90	299	0 †
40- 50 BB2 FINAL INT LAYOUT +D237	30/MAY/89	31/MAR/90	12/JUL/89	15/MAY/90	262	37
70- 80 BB5 CONST INT	16/MAY/90	13/JUN/90	16/MAY/90	13/JUN/90	25	0 †
82- 90 BB7.1 PLASTERING	19/AUG/90	19/SEP/90	19/AUG/90	19/SEP/90	25	0 †
90- 100 BB6.1 BASE FLOORING	20/SEP/90	18/OCT/90	20/SEP/90	18/OCT/90	25	0 †
90- 110 BB7.2 PAINTING	20/SEP/90	18/OCT/90	20/OCT/90	17/NOV/90	25	25
100- 120 BB6.2 FLOOR COVERING	20/OCT/90	17/NOV/90	20/OCT/90	17/NOV/90	25	0 †
130- 140 BB8 INSPEC BLDG	18/NOV/90	16/DEC/90	18/NOV/90	16/DEC/90	25	0 †
140- 150 BB9 READJUST BLDG	17/DEC/90	15/JAN/91	17/DEC/90	15/JAN/91	25	0 †
150- 160 BB10 REINSPECT AND T/O BLDG	16/JAN/91	13/FEB/91	16/JAN/91	13/FEB/91	25	0 †

PLAN I.D. :TTVAC VERSION 20

		1989				1990				1991																					
PERIOD COMMENCING DATE	MONTH	!1	!3	!1	!5	!2	!7	!4	!2	!6	!3	!3	!7	!5	!2	!7	!5	!1	!6	!3	!1	!5	!2	!2	!6	!4	!1	!6	!3		
PERIOD COMMENCING TIME UNIT		!1	!29	!53	!83	!107	!161	!215	!263	!315	!367	!411	!462	!515	!563	!617	!671														
10- 20 BB1 : DET LOADS		!CC!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!
10- 30 BB2 : IND OPN IN EXT WALLS		!CC!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!
40- 65 BB3 :CONST EXT +D274		!	C!CC!	CC!	!	!	!	!	!	!	!	!	!	!	!	!															
40- 50 BB2 FINAL INT LAYOUT +D237		!	!==!	!==!	!==!	!==!	!==!	!==!	!==!	!==!	!==!	!==!	!==!	!==!	!==!	!==!	!==!	!==!	!==!	!	!	!	!	!	!	!	!	!	!	!	!
70- 80 BB5 CONST INT		!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!
82- 90 BB7.1 PLASTERING		!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!
90- 100 BB6.1 BASE FLOORING		!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!
90- 110 BB7.2 PAINTING		!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!
100- 120 BB6.2 FLOOR COVERING		!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!
130- 140 BB8 INSPEC BLDG		!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!
140- 150 BB9 READJUST BLDG		!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!
150- 160 BB10 REINSPECT AND T/D BLDG		!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!

Barchart Key:- CCC :Critical Activities == :Non Critical Activities NNN :Activity with neg float ... :Float

NATIONAL INSTITUTE OF HEALTH
REPORT TYPE :STANDARD LISTING

TETANUS TOXOID PLANT

U.S.A.I.D PROJECT

PLAN I.D. :TTVAC VERSION 21

PRINTING SEQUENCE :Earliest Activities First
SELECTION CRITERIA :ES (EXTERNAL STUDIES)
TIME NOW DATE : 1/MAY/89

ACTIVITY DESCRIPTION	EARLIEST START	EARLIEST FINISH	LATEST START	LATEST FINISH	DURATION	FLOAT
10- 210 ES4 : ELECT LEAD TO BLDG +d326	1/MAY/89	16/JUN/90	26/JUN/89	18/AUG/90	351	48
10- 180 ES2 : STEAM LEAD TO BLDG +d326	1/MAY/89	16/JUN/90	26/JUN/89	18/AUG/90	351	48
10- 190 ES1 : FUN R-UP BOIL +D299	1/MAY/89	13/JUN/90	28/JUN/89	18/AUG/90	349	50
10- 280 ES5 : FUN S-BY GEN +D255	1/MAY/89	21/APR/90	19/AUG/89	18/AUG/90	305	94
10- 200 ES3 : FUN E/SUB STAT +D255	1/MAY/89	21/APR/90	19/AUG/89	18/AUG/90	305	94

PLAN I.D. :TTVAC VERSION 21

PRINTING SEQUENCE :Earliest Activities First
SELECTION CRITERIA :ES External Studies
TIME NOW DATE : 1/MAY/89

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=====1989=====1990=====1991=====
PERIOD COMMENCING DATE      !1 !3 !1 !5 !2 !7 !4 !2 !6 !3 !3 !7 !5 !2 !7!5 !1 !6 !3 !1 !5 !2 !2 !6 !4 !1 !6 !3 !
MONTH                        !MAY !JUL !SEP !NOV !JAN !MAR !MAY !JUL !SEP !NOV !JAN !MAR !MAY !JUL !
PERIOD COMMENCING TIME UNIT !1 !29!53!83!107 !161 !215 !263 !315 !367 !411 !462 !515 !563 !617 !671 !
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10- 210 ES4 : ELECT LEAD TO BLDG +d326 !!!!!!!...! ! ! ! ! ! ! ! ! ! ! ! !
10- 180 ES2 : STEAM LEAD TO BLDG +d326 !!!!!!!...! ! ! ! ! ! ! ! ! ! ! ! !
10- 190 ES1 : FUN R-UP BOIL +D299      !!!!!!!...! ! ! ! ! ! ! ! ! ! ! ! !
10- 280 ES5 : FUN S-BY GEN +D255       !!!!!!!...! ! ! ! ! ! ! ! ! ! ! ! !
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10- 200 ES3 : FUN E/SUB STAT +D255     !!!!!!!...! ! ! ! ! ! ! ! ! ! ! ! !
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Barchart Key:- CCC :Critical Activities == :Non Critical Activities NNN :Activity with neg float ... :Float

NATIONAL INSTITUTE OF HEALTH
REPORT TYPE :STANDARD LISTING

TETANUS TOXOID PLANT

U.S.A.I.D PROJECT

PLAN I.D. :TTVAC VERSION 21

PRINTING SEQUENCE :Earliest Activities First
SELECTION CRITERIA :IS *Internal Services*
TIME NOW DATE : 1/MAY/89

ACTIVITY DESCRIPTION	EARLIEST START	EARLIEST FINISH	LATEST START	LATEST FINISH	DURATION	FLOAT
10- 170 IS-1 : PLACEMENT EQUIP +D238	1/MAY/89	3/MAR/90	10/JUN/89	11/APR/90	263	34
170- 220 IS-2:PREP IS /BP;ELEC,ST,GAS,CAIR,W,	4/MAR/90	5/MAR/90	12/APR/90	14/APR/90	2	34
220- 230 IS-3:CHECK BP INT SER	6/MAR/90	5/MAY/90	15/APR/90	13/JUN/90	50	34
230- 240 IS-4:INSTALL INT SER	14/JUN/90	18/AUG/90	14/JUN/90	18/AUG/90	50	0 #
240- 250 IS-5:RUN UP INT SER	19/AUG/90	19/SEP/90	18/NOV/90	16/DEC/90	25	75
250- 260 IS-6:READJUST INT SER	20/SEP/90	18/OCT/90	17/DEC/90	15/JAN/91	25	75
260- 270 IS-7:VALIDATE INT SER	20/OCT/90	17/NOV/90	16/JAN/91	13/FEB/91	25	75

PLAN I.D. :TTVAC VERSION 20

PRINTING SEQUENCE :Earliest Activities First
 SELECTION CRITERIA :IS *Internal Services*
 TIME NOW DATE : 1/MAY/89

	1989				1990				1991							
PERIOD COMMENCING DATE	1	3	5	7	9	11	13	15	17	19	21	23	25	27	29	31
MONTH	MAY	JUL	SEP	NOV	JAN	MAR	MAY	JUL	SEP	NOV	JAN	MAR	MAY	JUL	SEP	NOV
PERIOD COMMENCING TIME UNIT	1	29	53	83	107	161	215	263	315	367	411	462	515	563	617	671
10- 170 IS-1 : PLACEMENT EQUIPMENT +d	==	==	==	==	==	==	==	==	==	==	==	==	==	==	==	==
170- 220 IS-2:PREP IS /BP;ELEC,ST,GAS,C	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!
220- 230 IS-3:CHECK BP INT SER	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!
230- 240 IS-4:INSTALL INT SER	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!
240- 250 IS-5:RUN UP INT SER	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!
250- 260 IS-6:READJUST INT SRE	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!
260- 270 IS-7:VALIDATE INT SER	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!

Barchart Key:- CCC :Critical Activities == :Non Critical Activities NNN :Activity with neg float ... :Float

NATIONAL INSTITUTE OF HEALTH
REPORT TYPE :STANDARD LISTING

TETANUS TOXOID PLANT

U.S.A.I.D PROJECT

PRINTING SEQUENCE :Earliest Activities First
SELECTION CRITERIA :HV *High Ventilation Airflow*
TIME NOW DATE : 1/MAY/89

PLAN I.D. :TTVAC VERSION 21

ACTIVITY DESCRIPTION	EARLIEST START	EARLIEST FINISH	LATEST START	LATEST FINISH	DURATION	FLOAT
220-1300 HV1 : APP SPECS HVAC	6/MAR/90	9/APR/90	22/MAY/90	25/JUN/90	30	64
1300-1320 HV2 :TENDERING HVAC	10/APR/90	16/MAY/90	26/JUN/90	5/AUG/90	30	64
1320-1330 HV3 : CONTRACTING HVAC	17/MAY/90	3/JUN/90	6/AUG/90	23/AUG/90	15	64
1330-1340 HV4 : INSTALL HVAC	4/JUN/90	30/AUG/90	25/AUG/90	17/NOV/90	70	64

PRINTING SEQUENCE :Earliest Activities First
 SELECTION CRITERIA :HV *May Ventilation System*
 TIME NOW DATE : 1/MAY/89

PLAN I.D. :TTVAC VERSION 20

	1989				1990				1991																				
PERIOD COMMENCING DATE	!1	!3	!1	!5	!2	!7	!4	!2	!6	!3	!3	!7	!5	!2	!7	!5	!1	!6	!3	!1	!5	!2	!2	!6	!4	!1	!6	!3	!
MONTH	!MAY	!JUL	!SEP	!NOV	!JAN	!MAR	!MAY	!JUL	!SEP	!NOV	!JAN	!MAR	!MAY	!JUL	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!
PERIOD COMMENCING TIME UNIT	!1	!29	!53	!83	!107	!161	!215	!263	!315	!367	!411	!462	!515	!563	!617	!671	!	!	!	!	!	!	!	!	!	!	!	!	!
220-1300 HV1 : APP SPECS HVAC	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!
1300-1320 HV2 :TENDERING HVAC	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!
1320-1330 HV3 : CONTRACTING HVAC	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!
1330-1340 HV4 : INSTALL HVAC	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!

Barchart Key:- CCC :Critical Activities == :Non Critical Activities NNN :Activity with neg float ... :Float

ACTIVITY DESCRIPTION	EARLIEST START	EARLIEST FINISH	LATEST START	LATEST FINISH	DURATION	FLOAT
10- 320 FF1: FOLLOW UP WITH NBS	1/MAY/89	22/OCT/89	16/MAY/90	17/NOV/90	150	324
30- 340 FF2: SHIP FERM TO KBF	23/OCT/89	19/DEC/89	18/NOV/90	15/JAN/91	50	324
40- 350 FF3:ST CLEAR FERM	29/DEC/89	3/JAN/90	16/JAN/91	30/JAN/91	13	324
50- 360 FF4:TRN FERM TO ISI	4/JAN/90	17/JAN/90	31/JAN/91	13/FEB/91	12	324
360- 370 FF5:INSPEC FOR INS FERM	18/JAN/90	31/JAN/90	14/FEB/91	27/FEB/91	12	324
370- 380 FF6:STORE FERM IN NIN	1/FEB/90	1/FEB/90	28/FEB/91	28/FEB/91	1	324
380- 390 FF7:INSTALL FERM	14/FEB/91	14/MAR/91	2/MAR/91	30/MAR/91	25	13
390- 400 FF8:RUN UP FERM	16/MAR/91	13/APR/91	31/MAR/91	28/APR/91	25	13
400- 410 FF9:VALIDATE FERM	14/APR/91	27/APR/91	29/APR/91	12/MAY/91	12	13

PLAN I.D. :ITVAC VERSION 20

	1989				1990				1991			
PERIOD COMMENCING DATE	'81	'83	'85	'87	'89	'91	'93	'95	'97	'99	'01	'03
MONTH	MAY	JUL	SEP	NOV	JAN	MAR	MAY	JUL	SEP	NOV	JAN	MAR
PERIOD COMMENCING TIME UNIT	11	13	15	17	19	21	23	25	27	29	31	1
10- 320 FF1:FOLLOW UP WITH NRS
320- 340 FF2:SHIP FERM TO KAR
340- 350 FF3:CUST CLEAR FERM
350- 360 FF4:TRAN FERM TO ISL
360- 370 FF5:INSECT FOR INS FERM
370- 380 FF6:STORE FERM IN MIN
380- 390 FF7:INSTALL FERM
390- 400 FF8:RUN UP FERM
400- 410 FF9:VALIDATE FERM

Barchart Key:- CCC :Critical Activities == :Non Critical Activities NNN :Activity with neg float ... :Float

ACTIVITY DESCRIPTION	EARLIEST START	EARLIEST FINISH	LATEST START	LATEST FINISH	DURATION	FLOAT
10- 600 TT1 : REDEF SPECS	1/MAY/89	29/MAY/89	11/APR/90	12/MAY/90	25	296
600- 610 TT2:PRELIM D/QUOTES FOR TANKS	30/MAY/89	27/JUN/89	13/MAY/90	10/JUN/90	25	296
610- 620 TT3:APP DWGS FOR TANKS	28/JUN/89	26/JUL/89	11/JUN/90	11/JUL/90	25	296
620- 630 TT4:ORDER TANKS	27/JUL/89	24/AUG/89	12/JUL/90	13/AUG/90	25	296
630- 640 TT5:FOLLOWUP WITH MAN OF TANKS	26/AUG/89	20/NOV/89	15/AUG/90	13/NOV/90	75	296
630- 650 TT6:PROD OF TANKS	26/AUG/89	20/NOV/89	15/AUG/90	13/NOV/90	75	296
660- 670 TT7:SHIP TANKS	21/NOV/89	17/JAN/90	14/NOV/90	12/JAN/91	50	296
670- 680 TT8:CUST CLEAR AT KAR TANKS	18/JAN/90	1/FEB/90	13/JAN/91	27/JAN/91	13	296
680- 690 TT9:TPT TO ISL TANKS	3/FEB/90	17/FEB/90	28/JAN/91	11/FEB/91	13	296
690- 700 TT10:INSPEC TANKS FOR INS	18/FEB/90	4/MAR/90	12/FEB/91	26/FEB/91	13	296
700- 710 TT11:STORE AT NIH	5/MAR/90	5/MAR/90	27/FEB/91	27/FEB/91	1	296
710- 720 TT12:INSTALL TANKS	14/FEB/91	28/FEB/91	28/FEB/91	14/MAR/91	13	12
720- 730 TT13:RUN-UP TANKS	2/MAR/91	30/MAR/91	16/MAR/91	13/APR/91	25	12
730- 740 TT14:VALIDATE TANKS	31/MAR/91	28/APR/91	14/APR/91	12/MAY/91	25	12

PLANT I.D. :TTVAC VERSION 20

	1989												1990																
PERIOD COMMENCING DATE	!1	!3	!1	!5	!2	!7	!4	!2	!6	!3	!3	!7	!5	!2	!7	!5	!1	!6	!3	!1	!5	!2	!2	!5	!4	!1	!6	!3	!
MONTH	!MAY	!JUL	!SEP	!NOV	!JAN	!MAR	!MAY	!JUL	!SEP	!NOV	!JAN	!MAR	!MAY	!JUL	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!
PERIOD COMMENCING TIME UNIT	!1	!29	!53	!83	!107	!161	!215	!263	!315	!367	!411	!462	!515	!563	!617	!671	!	!	!	!	!	!	!	!	!	!	!	!	!
10- 500 TT1 : REDEF SPECS	!..	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!
500- 510 TT2:PRELIM D/QUOTES FOR TANKS	!..	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!
510- 520 TT3:APP DWGS FOR TANKS	!..	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!
520- 530 TT4:ORDER TANKS	!..	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!
630- 640 TT5:FOLLOWUP WITH MAN OF TANKS	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!
630- 550 TT6:PROD OF TANKS	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!
660- 670 TT7:SHIP TANKS	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!
670- 680 TT8:CUST CLEPR AT KAR TANKS	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!
680- 690 TT9:TPT TO ISL TANKS	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!
690- 700 TT10:INSPEC TANKS FOR INS	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!
700- 710 TT11:STORE AT NIH	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!
710- 720 TT12:INSTALL TANKS	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!
720- 730 TT13:RUN-UP TANKS	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!
730- 740 TT14:VALIDATE TANKS	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!

Barchart key:- CCC :Critical Activities == :Non Critical Activities NNN :Activity with neg float ... :Float

NATIONAL INSTITUTE OF HEALTH
REPORT TYPE :STANDARD LISTING

TETANUS TOXOID PLANT

U.S.A.I.D PROJECT

PRINTING SEQUENCE :Earliest Activities First
SELECTION CRITERIA :AA /
TIME NOW DATE : 1/MAY/89

PLAN I.D. :TTVAC VERSION 21

ACTIVITY DESCRIPTION	EARLIEST START	EARLIEST FINISH	LATEST START	LATEST FINISH	DURATION	FLOAT
10- 330 AA1 : FINAL EQUIP SPECS	1/MAY/89	29/MAY/89	25/MAY/89	22/JUN/89	25	21
330- 420 AA2:TEND ANC EQUIP #0264	30/MAY/89	2/JUN/90	24/JUN/89	26/JUN/90	314	21
420- 430 AA3:ORDER ANC EQUIPMENT	3/JUN/90	1/JUL/90	27/JUN/90	28/JUL/90	25	21
430- 440 AA4:FOLLOW UP WITH MAN OF ANC EQUIP	2/JUL/90	7/OCT/90	29/JUL/90	31/OCT/90	75	21
450- 450 AA5:PROD OF ANC EQUIP	2/JUL/90	7/OCT/90	29/JUL/90	31/OCT/90	75	21
450- 470 AA6:SHIP ANC EQUIP	8/OCT/90	4/DEC/90	1/NOV/90	30/DEC/90	50	21
470- 480 AA7:DUST CLEAR ANC EQUIP	5/DEC/90	18/DEC/90	31/DEC/90	13/JAN/91	12	21
480- 490 AA8:TPT TO ISLAMABAD ANC EQUIP	19/DEC/90	3/JAN/91	14/JAN/91	28/JAN/91	13	21
490- 500 AA9:INSPEC FOR INS ANC EQUIP	5/JAN/91	19/JAN/91	29/JAN/91	12/FEB/91	13	21
500- 510 AA10:STORE ANC EQUIP AT NIH	20/JAN/91	20/JAN/91	13/FEB/91	13/FEB/91	1	21
510- 520 AA11:INSTALL ANC EQUIP	14/FEB/91	14/MAR/91	14/FEB/91	14/MAR/91	25	0 ↓
520- 530 AA12:RUN-UP ANC EQUIP	16/MAR/91	13/APR/91	16/MAR/91	13/APR/91	25	0 ↓
530- 540 AA13:VALIDATE ANC EQUIP	14/APR/91	12/MAY/91	14/APR/91	12/MAY/91	25	0 ↓

PLAN I.D. :TTVAC VERSION 20

PRINTING SEQUENCE :Earliest Activities First
 SELECTION CRITERIA :AA
 TIME NOW DATE : 1/MAY/89

	1989												1990												1991																																																		
PERIOD COMMENCING DATE	1	3	5	7	9	11	13	15	17	19	21	23	25	27	29	31	1	3	5	7	9	11	13	15	17	19	21	23	25	27	29	31	1	3	5	7	9	11	13	15	17	19	21	23	25	27	29	31																											
MONTH	MAY	JUL	SEP	NOV	JAN	MAR	MAY	JUL	SEP	NOV	JAN	MAR	MAY	JUL	SEP	NOV	MAY	JUL	SEP	NOV	JAN	MAR	MAY	JUL	SEP	NOV	JAN	MAR	MAY	JUL	SEP	NOV	MAY	JUL	SEP	NOV	JAN	MAR	MAY	JUL	SEP	NOV	JAN	MAR	MAY	JUL	SEP	NOV																											
PERIOD COMMENCING TIME UNIT	1	29	53	83	107	131	155	179	203	227	251	275	299	323	347	371	1	29	53	77	101	125	149	173	197	221	245	269	293	317	341	365	1	29	53	77	101	125	149	173	197	221	245	269	293	317	341	365	389																										
10- 330 AA1 : FINAL EQUIP SPECS	!..	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!																									
330- 420 AA2:TEND ANC EQUIP +D264	!..	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!																								
420- 430 AA3:ORDER ANC EQUIPMENT	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!																							
430- 450 AA3:PROD OF ANC EQUIP	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!																					
430- 440 AA4:FOLLOW UP WITH MAN OF ANC	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!																			
450- 470 AA6:SHIP ANC EQUIP	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!																
470- 480 AA7:CUST CLEAR ANC EQUIP	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!												
480- 490 AA8:TFT TO ISLAMABAD ANC EQUIP	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!								
490- 500 AA9:INSPEC FOR INS ANC EQUIP	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!					
500- 510 AA10:STORE ANC EQUIP AT NIH	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!		
510- 520 AA11:INSTALL ANC EQUIP	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!		
520- 530 AA12:RUN-UP ANC EQUIP	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	
530- 540 AA13:VALIDATE ANC EQUIP	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!	!

Barchart Key:- CCC :Critical Activities == :Non Critical Activities NNN :Activity with neg float ... :Float

PLAN I.D. : TTVAC VERSION 21

PRINTING SEQUENCE : Earliest Activities First
 SELECTION CRITERIA : AN *Ancillary Equipment to be purchased by NIH*
 TIME NOW DATE : 1/MAY/89

ACTIVITY DESCRIPTION	EARLIEST START	EARLIEST FINISH	LATEST START	LATEST FINISH	DURATION	FLOAT
10- 750 AN1 : FINAL EQUIP SPECS +d235	1/MAY/89	27/FEB/90	2/SEP/89	3/JUL/90	260	106
750- 760 AN2:ORDER ANC EQUIP NIH	28/FEB/90	26/APR/90	7/JUL/90	9/SEP/90	50	106
760- 770 AN3:FOLLOW UP ANC EQUIP NIH MAN	30/APR/90	14/MAY/90	10/SEP/90	25/SEP/90	13	106
770- 780 AN4:PROD ANC EQUIP NIH	15/MAY/90	14/JUL/90	26/SEP/90	22/NOV/90	50	106
780- 790 AN5:SHIP ANC EQUIP NIH	15/JUL/90	18/SEP/90	24/NOV/90	21/JAN/91	50	106
790- 800 AN6:CUST CLEAR ANC EQUIP NIH	19/SEP/90	6/OCT/90	22/JAN/91	7/FEB/91	15	106
800- 810 AN7:TPT TO ISL ANC EQUIP NIH	7/OCT/90	21/OCT/90	9/FEB/91	23/FEB/91	13	106
810- 820 AN8:INSPEC ANC EQUIP NIH	22/OCT/90	5/NOV/90	24/FEB/91	10/MAR/91	13	106
820- 830 AN9:STORE ANC EQUIP NIH	6/NOV/90	6/NOV/90	11/MAR/91	11/MAR/91	1	106
830- 840 AN10:INSTALL ANC EQUIP NIH	14/FEB/91	3/MAR/91	12/MAR/91	28/MAR/91	15	22
840- 850 AN11:RUN-UP ANC EQUIP NIH	4/MAR/91	18/MAR/91	30/MAR/91	13/APR/91	13	22
850- 860 AN12:VALIDATE ANC EQUIP NIH	19/MAR/91	16/APR/91	14/APR/91	12/MAY/91	25	22

PLAN I.D. :TIVAC VERSION 20

	1989												1990												1991																															
PERIOD COMMENCING DATE	1	3	5	7	9	11	13	15	17	19	21	23	25	27	29	31	1	3	5	7	9	11	13	15	17	19	21	23	25	27	29	31	1	3	5	7	9	11	13	15	17	19	21	23	25	27	29	31								
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Sarchart key:- CCC :Critical Activities == :Non Critical Activities NNN :Activity with neg float ... :Float

PROGRESS REPORT
TETANUS TOXOID PROJECT, H.I.H.

Annex-5

DATED: = MARCH 27th, 1990.

Please find below the latest position concerning the progress of Tetanus Toxoid project.

S.No.:	activity	Present position
1.	Exterior construction of the building;	1.1) All the exterior walls completed 1.2) The drainages diverted and reconstructed. 1.3) Man holes completed, sewage lines layed. 1.4) Stairs to the Mazzanine floor discussed, and instructions given to Mr. P.W.D.
2.	Interior layout.	2.1) All the interior walls completed (except four walls, purposely stopped for the transportation of equipment/machinery, 2.2) Water Hot/Cold lines layed out and checked for leakage. 2.3) Floor given primary treatment Mosaic layer yet to be layed. 2.4) Unwanted openings in the floor of the old building approaching to the basement closed, hanging un-necessary old pipe lines, cables etc. removed. 2.5) Position of the equipment/ machinery in various rooms settled and finalized. 2.6) Interior location of various electrical points (Single & Three Phase), their load, quantity and type completed and accordingly instructed to Mr. P.W.D.

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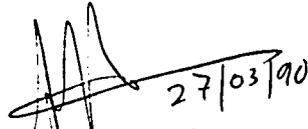
S.No.	Activity	Present position
3.	Plant Room.	<p>2.7) All the Steam, compressed air and natural gas supply points, their location, quantity and type accordingly instructed to Pak. P.W.D.</p> <p>2.8) All the Aluminium doors, windows, their type, dimension etc. revised and reinstructed to Pak. P.w.D.</p> <p>2.9) Mazzanine floor construction completed, floor finish of this mazzaine completed, wall plaster completed Roof treatment completed.</p> <p>2.10) Positions for the opening in the mazzanine for A/C ducts etc. reins- tructed to Pak. P.w.D. w/r^{to} latest Blue prints.</p> <p>2.11) Internal electrification./lighting rechecked, altrations made and accordingly P.w.D. instructed.</p> <p>3.1) Functionalization and run up of Steam Boiler, standby Generator, its piping and hooking up with the main building discussed, changes made, finalized and necessary instructions given to Pak. P.W.D. for immediate action.</p> <p>3.2) Compressed air, its piping, location of points in various rooms etc. checked, reallocated, agreed upon by Pak. P.w.D., relevant instructions given to the concerned Division.</p>

S.No.	Activity	Present position.
4.	Airconditioning system.	<p>4.1) Redesigning of A/C System as per specific requirement of Tetanus Toxoid environments has been done and instructions given to P.w.D. to strictly follow G.M.P. requirements.</p> <p>4.2) Revised Blue print has been scrutinized and approved.</p> <p>4.3) HEPA Filter, quantity has been increased and in this reference USAID requested to provide these filters for which they have agreed upon.</p>
5.	Fire Alarm, Smoke detector, Intercom system.	<p>5.1) Additional estimate has been given by Pak. P.w.D. since these systems were not previously included in the master plan.</p>
6.	Ancillary equipments.	<p>6.1) Fermentor of NBS, its accessories, filtration system of Millipore and few other equipments (Cartons, not yet opened since we are waiting for the shipment list) received at NIII, Islamabad.</p> <p>6.2) The remaining list, of ancillary equipment to be provided by USAID, has been revised by the consultant and submitted back with changes and alterations in the specifications.</p>

S.No.	Activity	Present position
7.	Nil, component.	1. Ancillary equipment to be purchased by NIH is in progress. In this reference some L/C's are expected to open within a very short period however some of these items have been already purchased.

Submitted for information please.

Maj.Gen.(Rtd) M.I, Burney
National Consultant
USAID, Islamabad


27/03/90
(ARFAN MAHMOOD)
PROJECT MANAGER
TETANUS TOXOID PROJECT
N.I.H. ISLAMABAD,