4-2 Minutes of Discussions (Basic Design Survey II)

MINUTES OF DISCUSSIONS
BASIC DESIGN STUDY (II)
ON THE PROJECT FOR CONSTRUCTION OF THE MEASLES VACCINE PRODUCTION FACILITY
IN THE SOCIALIST REPUBLIC OF VIET NAM

In response to a request from the Government of the Socialist Republic of Viet Nam(hereinafter referred to as "the Viet Nam"), the Government of Japan decided to conduct a Basic Design Study on the Project for Construction of the Measles Vaccine Production Facility (hereinafter referred to as "the Project") and entrusted the study to the Japan International Cooperation Agency (hereinafter referred to as "JICA") .

JICA sent to Viet Nam the Basic Design Study Team (II)(hereinafter referred to as "the Team"), which is headed by Mr. Hisashi Noguchi , Assistant Director, Grant Aid Division, Economic Cooperation Bureau, Ministry of Foreign Affairs, and is scheduled to stay in the country from 22 to 30 May, 2002.

The Team held discussions with the officials concerned of the Government of Viet Nam and conducted a field survey at the study area.

As a result of discussions and field survey, both parties confirmed the main items described on the attached sheets.

Hanoi, 30 May, 2002

Hisashi Noguchi

Mr. Hisashi Noguchi
Leader
Basic Design Study Team (II)
Japan International Cooperation Agency

Prof. Nguyen Van Thuong
Vice Minister for Health
The Socialist Republic of Viet Nam

Witnessed by

Mrs. Pascale Brudon
WHO Representative in Viet Nam

ATTACHMENT

1. Reconfirmation of the previous Minutes of Discussions

The Vietnamese side and the Japanese side reconfirmed validity of all the contents in the two previous Minutes of Discussions concluded at the first Basic Design Study on 1 April, 2002 and at the Preliminary Study on 21 June, 2001.

2. National Regulatory Authority (NRA)

The Vietnamese Government requested WHO to grant the support for strengthening the NRA. WHO had their experts' review of the Plan of Action established by CENCOBI as the NRA of Viet Nam and prepared the recommendations for the institutional development and training plan. The Vietnamese side expressed the understanding of importance to strengthen the NRA and to establish the legal basis for enforcement of an internationally acceptable standard of GMP. They also promised that the NRA should receive WHO assessment and achieve the full qualification of the six critical functions by the end of the year 2005.

3. Agreement for Technology Transfer between the POLIOVAC and the Kitasato Institute

The Vietnamese side and Japanese side confirmed that the resource for seed virus and bulk vaccine is not included in the scope of the Grant Aid Scheme. Therefore, the Vietnamese side committed that the contractual basis should be established through negotiations between the POLIOVAC and the Kitasato Institute and that the both parties need to conclude the legal Agreement for technical transfer for this Project at the earliest stage possible.

This Agreement should include but not limited to the following items;

(1) The conditions for supplying the seed virus (AIK-C) and the bulk vaccine necessary for the first two years after the substantial completion of the Facilities.

(2) The conditions for the technology transfer regarding measles vaccine production and quality control technology.

4. Contents of the Facilities

The Vietnamese side and Japanese side agreed about the contents of the Facilities, which are indicated in the ANNEX 1.

The following items are included in the scope of responsibility on the Vietnamese side.

- Allotment of 8,500 sqm of land in Thanh Tri District for the Project.
- Leveling of the site to the proposed level indicated in the detailed design document.
- Construction of the following work
  - -Administration building
  - -Parking Garage
  - -In-site road

-Canteen
-Security guard house
-Landscaping of the site

5.Procurement of production equipment

The Vietnamese side requested the production equipment necessary for the Project which is indicated in ANNEX 2 with items categorized into five groups according to its priority. Further study will be made to conclude the selection of equipment.

6.Technology upgrading scheme proposed by the Vietnamese side

The Vietnamese side established their technology-upgrading scheme as shown in the ANNEX 3 and proposed it to the study team. The objective of this scheme is to achieve the self-reliant capabilities for production of measles vaccine in the years to come. The Vietnamese side stated in this scheme that the source of technology transfer regarding measles vaccine production should be from the Kitasato Institute, Quality Control Technology from the Kitasato Institute or other relevant institutions and the advisory institute for the GMP will be selected with the recommendation from WHO.

The Vietnamese Government, Japanese Government and WHO will respectively share the responsibility for the technical input to such technology transfer. The training will take place either in Japan, Vietnam or other countries.

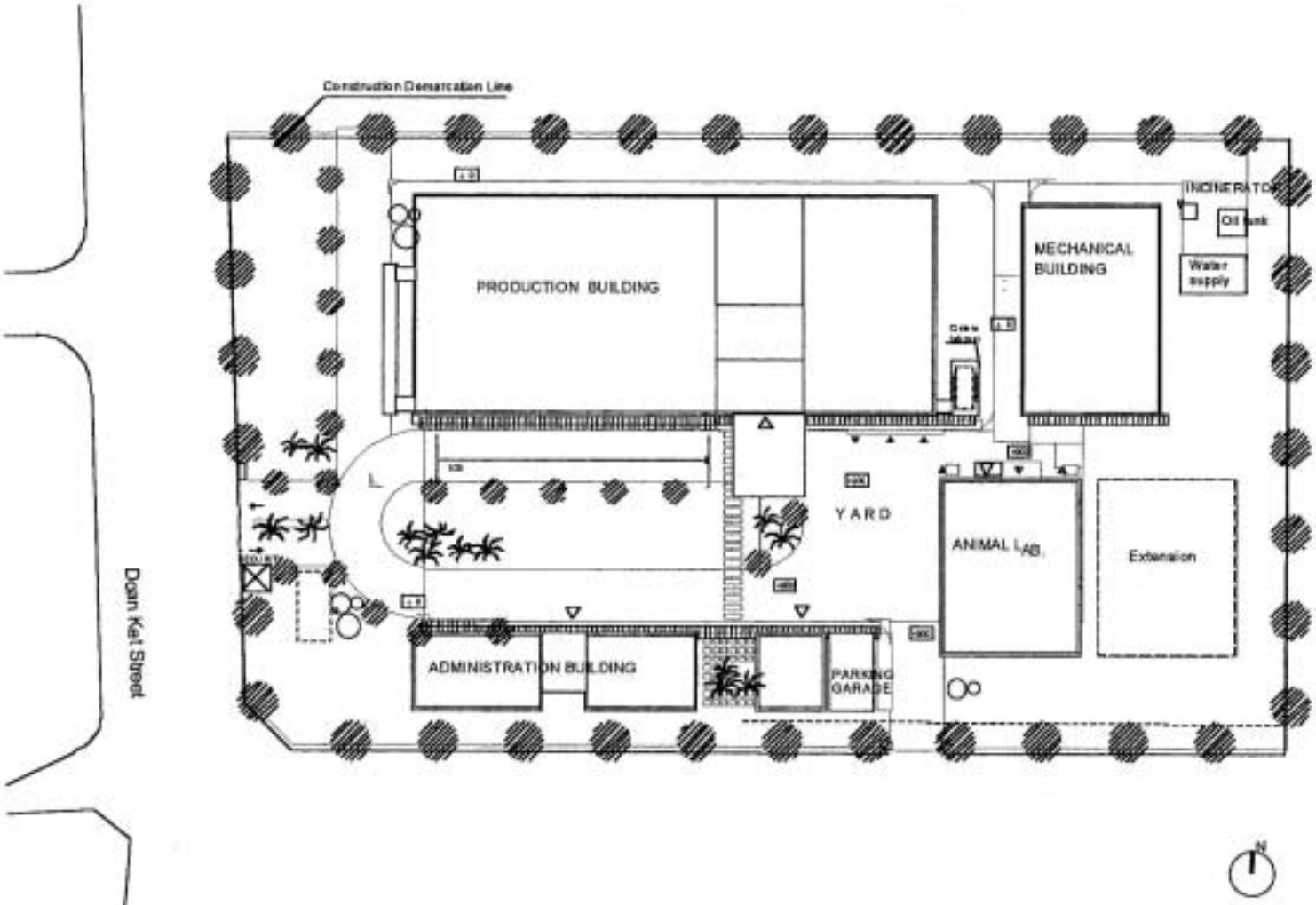
7.Soft Component of the Grant Aid Project

The Vietnamese side requested the Japanese side to include the consulting services for a part of validation and facility maintenance in the Project as a "Soft Component" of the Project.

The Japanese side explained that it is included in the Project although the extent of such "Soft Component" is limited to these areas.

8.Other relevant issue

The Vietnamese side will complete the official appraisal for the Project and obtain the governmental approval for the implementation of the Project by the end of October 2002.



ANNEX 1-1 SITE PLAN

ANNEX 1-2

Requested contents of facilities

	Requested functions	Requested rooms
I .Production Building	1. Ancillary area	1) Entrance hall 2) Changing rooms 3) Toilets 4) Rest space 5) Others
	2. Production area	
	2.1 Bulk production area	1)Documents room 2) Storage room for materials 3) Washing room 4) Preparation room 5) SPF eggs incubation room 6) Medium preparation area 7) Cell culture area 8) Virus culture area 9) Others
	2.2 Final production area	1)Record room 2) Storage room for materials 3) Preparation & Washing room 4) Ante -room 5) Final bulk composition area 6) Vial washing & sterilization room 7) Filling line room 8) Freeze-drying room 9) Capping room 10) Inspection room 11) Storage freezer room of final products 12) Storage cold room of WFI 13) Packaging room 14) Others
	3. Quality control area	1)Documents room 2) Cold room 3) Storage room for samples / materials 4) Others
	3.1 Clean area for cell culture & sterility test	1) Washing room 2) Preparation room 3) Ante-room 4) Cell culture area 5) Sterility test area 6) BSL 2 room 7) Others
	3.2 Chemical & Immunological test area	1) Chemical test room 2) Moisture content test room 3) Immunological test room & Laboratory 4) Others

Ⅱ. Animal Laboratory	4.1 Common area	1) Changing room 2) Toilet 3) Record room 4) Storage room for materials 5) Storage room for feed 6) Others
	4.2 Animal test area	1) Changing room 2) Animal quarantine room 3) Clean Storage room 4) Mice test room 5) Guinea pigs test room 6) Spare test room 7) Inoculation room 8) Autopsy room 9) Washing room 10) Others
Ⅲ. Mechanical Buildings	1. Power Supply	1) Substation room 2) Generator room
	2. A/C Plant	1) Chiller Room 2) Boiler room
	3. Water Supply	1) Water reservoir and pump room 2) Water treatment plant
	4. Medical Gas Supply	1) Compressed /Vacuum air machine room
	5. Sewage	1) Waste water treatment plant
	6. Others	
Ⅳ. Incinerator		

ANNEX 2

Requested Items of Equipment

Name of area and room	*Name of Equipment*	Priority
1. Production Building		
2. Production area		
2.1 Bulk production area		
3) Washing room & Preparation room	*Large Autoclave*	A
	Large Dry Oven	B
	Plasma Sterilising Machine	E
5) SPF eggs incubation room	*Egg Incubator*	D
	Electric Cleaner	D
	Incubator for Egg Stock	D
	Candling set	D
6) Medium preparation	*Pooling Tank(100l)*	A
	Pooling Tank(200l)	A
	Pooling Tank(small)	C
	Pump	D
	Electric Balance(15kg)	D
	Electric Balance(2kg)	D
	Electric Balance(300kg)	D
	Weight for calibration	C
	Freezer(-30 ℃)	B
	Electric Cleaner(HEPA)	D
	Air Verocity Mater	D
	Filtration Device	A
	Integlity testmachine	B
	Table for Integlity testmachine	D
	pH meter	D
	Stirrer	D
	Stainless container	D
	Water bath	D
	Personal computer	D
	Vaccum pump	D
	Carriage	D
	Balance Table	D
7) Cell culture	*Microscope*	D
	Cell counter(manual)	D
	Water Bath	D
	Hand Washer	D
	Hand Alcohol splay	D

Name of area and room	*Name of Equipment*	Priority
	Cell centrifuge	B
	Magnetic Stirrer(large)	D
	Magnetic Stirrer(ordinary)	D
	Icemaker	D
	Trypsinaization set	D
	Eggs Opening kit	D
	Electric Dispenser(100cc)	C
	Carriage(3shelfs)	D
	Carriage	D
	Carriage	D
8) Virus culture	*Electric Dispenser(200cc)*	D
	Electric Dispenser(20cc)	C
	Pooling Tank	A
	Filtration Device	C
	Integlity testmachine	B
	Autoclave	A
	Hand Washer	D
	Hand Alcohol splay	D
	Deep Freezer(-70 ℃)	A
	Vacuum Pump	D
	Electric Balance	D
	Microscope	D
	Manual Mixing device	D
	Icemaker	D
2.2 Final production area		
3) Washing room and Preparation room	*Hand Alcohol splay*	D
	Large Autoclave	A
	Carriage(3shelfs)	D
	Carriage(1shelf)	D
	Large Dry Oven	B
6) Final bulk composition	*Pooling Tank*	A
	Formalin Perfusion System	B
7) Vial washing & sterilization room	*Vial Washing Machine*	A
	Drying Sterilizing Cooling Tunnel	A
8) Filling line room	*Tray Loading Machine*	A
	Filling Machine	A
	Stopper Washing and Sterilization Machine	A
	Stopper Handling Unit	A
9) Freeze-drying room	*Freeze Dryer*	A

Name of area and room	*Name of Equipment*	Priority
10) Capping room	*Capping Machine(including in Filling Machine)*	
	Table & Lamp stand for Visual inspection	D
14) Packaging room	*Labelling Machine*	A
	Printing Machine	A
3. Quality control area		
3) Storage room for samples	*Freezer(-20 ℃)*	B
	Refrigerator	D
	Deep Freezer(-70 ℃)	B
3.1 Clean area for cell culture & sterility test		
1) Washing &Preparation room	*Dryer*	D
	Dry Oven	D
	Pipet Washer	D
	Autoclave	A
	Icemaker	D
4) Cell culture	*Hand Washer*	D
	Hand Alcohol splay	D
	CO2 Incubator	B
	Centrifuge	B
	Microscope Fluorescent Type	B
	Water Bath(large)	D
	Water Bath(Small)	D
	Lab. Autoclave	B
	Test Tube Mixer	D
	Rotator for Microtiter Plate	D
	Clean Bench	A
	Cell Centrifuge	B
	Microscope(Inverted)	B
	Microscope	D
	Magnetic Stirrer	D
	N2 Liquid Stocker	D
	Refrigerator(4 ℃)	D
	Deep Freezer(-70 ℃)	B
	Freezer(-20 ℃)	D
	Incubator(58 ℃)	D
5) Sterility test	*Incubator(23 ℃)*	D
	Incubator(37 ℃)	D
	Filtration Device for mycoplasma	C
	Filtration Device for bacteria	D

Name of area and room	*Name of Equipment*	Priority
	Vacuum Pump	D
	Incubator(31 ℃)	D
6) BSL 2 room	*Hand Alcohol splay*	D
	Lab. Autoclave	D
	Incubator(31 ℃)	D
	Safety Cabinat	B
	Incubator(23 ℃)	D
	Incubator(37 ℃)	D
3.2 Chemical & Immunological test area		
1) Chemical test room	*pH meter*	D
	Balance Table	D
	PC Bottle	D
	Purified Water Equipment	A
	Osmometer	B
	Mixer	D
	Hot Plate	D
	Equipment Balance(Macro)	D
	Equipment Balance(Micro)	D
	Desicator	D
	Pipet Washer	D
	Draft chamber	A
	Water Bath	D
	Endotoxin Analyser	B
2) Moisture content test room	*Desicator*	D
	Balance Table	D
	Moisture Content Apparatus	B
	Rotator for Microtiter Plate	D
	Plate Washer	D
	ELISA reader	B
	Mixer	D
4)Laboratory for experiments	*Lab. Autoclave(for Test)*	D
	Lab. Autoclave(for dirty)	D
	Microscope	D
	Clean Bench	B
	Incubator(31 ℃)	D
	Incubator(35 ℃)	D
	Mixer	D
	Incubator (37 ℃)	D
	Pipet	D
	Freez Dryer for QC	B
	Mercury Vaporizer Unit	D
	Total Organic Carbon Analyzer	B

Name of area and room	*Name of Equipment*	Priority
	Liquid Chromatography Electrospray Lonization	A
	Conductivity Meter	D
	Automatic Potentiometric Titrator w/ Printer	C
	Particle Counter for Pharmaceutical Injections	B
	Polarimater	B
II. Animal Laboratory		
4.1 Common area		
4.2 Animal test area		
	Freezer(-20 ℃)	D
	Cage for Mice	D
	Cage for Rabbits	D
	Cage for Guinea Pigs	D
	Rack for Mice Cage	D
	Rack for Rabbits Cage	D
	Rack for Guinea Pigs Cage	B
	Mice water bottle	D
	Rabbits water bottle	D
	Guinea Pigs water bottle	D
	Operation table for Mice	D
	Operation table for Rabbits	D
	Operation table for Guinea Pigs	D
	Feeding Container	D
	Electrical Balance for Rats(1kg)	D
	Electrical Balance for Mice(200g)	D
	Hand Washer	D
	Hand Alcohol splay	D
	Autoclave	A
	Formalin Perfusion System	B
	Aqua Filter System	D
	Feed Container	D
	Autopsy kit	D
5. Common Equipment		
	Water purification system	A
	Syphon Dispenser	A
	Glassware	C
	Plastic materials	C

Name of area and room	*Name of Equipment*	Priority
	Metallic materials	C
	Chemicals	D
	Machinery Maintenance Tools	B
	Electronic Service Tools	B
	Airconditioner Maintenance Tools	B
	Laundry Machine	D
	Materials for Clean room	B
	Stainless steel made working table(for all clean rooms)	B
	Dust free and autoclavable garments for clean area	A
	Particle counter(Handy)	B
	Particle counter(System)	B
	Stainless steel wagon(for all clean rooms)	C
	Materials for Clean room	B
	Themomiter (wireless)	C
	Air Tester	B
3. Quality control area		
3.2 Chemical & Immunological test area		
4)Laboratory for experiments	*Conductivity Meter*	D
	Cabinet	E
	Work Table(Laboratory Table)	B
	Others	

Priority;

A; Items expensive and essential for measles vaccine production with the least availability in Viet Nam.

B; Items expensive and essential for measles vaccine production with domestic availability in Viet Nam.

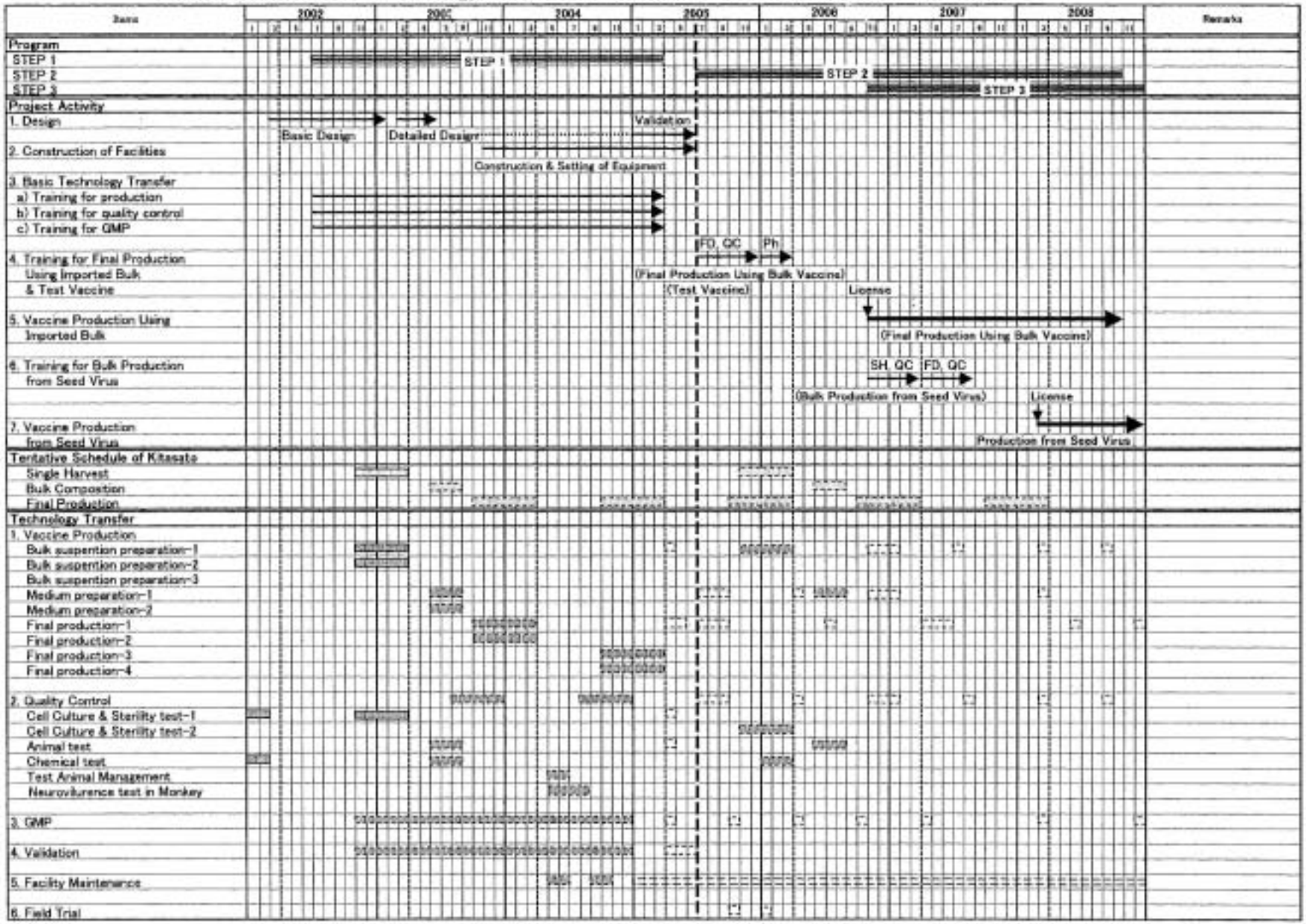
C; Items relatively inexpensive and essential for measles vaccine production with the least availability in Viet Nam.

D; Items relatively inexpensive and essential for measles vaccine production with domestic availability in Viet Nam.

E; Items not essential for measles vaccine production.

ANNEX 3

Tentative Schedule of Technology Transfer for Measles Vaccine Production in Viet Nam



4-3 Minutes of Discussions (Basic Design Explanation Team)

MINUTES OF DISCUSSIONS
ON THE BASIC DESIGN STUDY
ON THE PROJECT FOR CONSTRUCTION OF
THE MEASLES VACCINE PRODUCTION FACILITY
IN THE SOCIALIST REPUBLIC OF VIET NAM
(EXPLANATION ON DRAFT REPORT)

From March through April 2002 and May 2002, the Japan International Cooperation Agency (hereinafter referred to as "JICA") dispatched Basic Design Study Teams on the Project for Construction of Measles Vaccine Production Facility (hereinafter referred to as "the Project") to the Socialist Republic of Viet Nam (hereinafter referred to as "Viet Nam"), and through discussion, field survey, and technical examination of the results in Japan, JICA prepared a draft report of the study.

In order to explain and to consult the Vietnamese side on the components of the draft report, JICA sent to Viet Nam, the Draft Report Explanation Team (hereinafter referred to as "the Team"), which was headed by Mr. Hisashi Noguchi, Deputy Director, Grant Aid Division, Economic Cooperation Bureau, Ministry of Foreign Affairs, from August 26, 2002 to September 3, 2002.

In the course of discussions, both parties confirmed the main items described on the attached sheets.

Hanoi, 30 August 2002

Hisashi Noguchi

Mr. Hisashi Noguchi
Leader
Draft Report Explanation Team
Japan International Cooperation Agency

Prof. Nguyen Van Thuong
Vice Minister for Health
The Socialist Republic of Viet Nam

Witnessed by

Mrs. Pascale Brudon
Representative
Office of the World Health Organization
in The Socialist Republic of Viet Nam

Mr. Ho Quang Minh
Deputy Director General
Department of Foreign Economic Relations
Ministry of Planning and Investment (MPI)
The Socialist Republic of Viet Nam

ATTACHMENT

1. Components of the Draft Report

The Government of Viet Nam has agreed and accepted in principle the components of the draft report explained by the Team.

2. Reconfirmation of the previous Minutes of Discussions

The Vietnamese side and the Japanese side reconfirmed validity of all the contents in the three previous Minutes of Discussions concluded at the Preparatory Study on 21 June 2001, the first Basic Design Study on 1 April 2002, and the Second Basic Design Study on 30 May 2002.

3. Japan's Grant Aid Scheme

The Vietnamese side understands the Japan's Grant Aid Scheme and the necessary measures to be taken by the Government of Viet Nam as explained by the Team and described in Annex-2 and Annex-3 of the Minutes of Discussions signed by both parties on 1 April, 2002

4. Schedule of the Study

4-1. The consultant members will proceed to conduct further study in Viet Nam until 3 September 2002.

4-2. JICA will complete the final report in accordance with the confirmed item and send it to the Government of Viet Nam by February 2003.

5. Recent Condition of National Regulatory Authority

The English version of the Guidelines on GMP for Vaccines and Biologicals manufacturing in Viet Nam as revised on 6 – 8 August should be translated into Vietnamese before the end of September 2002. (The English language Code has been forwarded to Viet Nam WHO Representative and WHO Headquarter for information.) It must then go to a review committee. The committee decision is expected mid October 2002. It should then be presented to the Minister for Health, for her endorsement who will have final decision as to whether it becomes law. It is recommended that the National Center for Quality Control of Medical Biologicals (CENCOBI) stress the importance of adopting this Code of GMP into the legal framework of licensing.

6. Contents of the facilities

The Vietnamese side and Japanese side agreed about the contents of the Facilities, which are indicated in the Annex-1 to 4. Both side agreed about the scope of each responsibility indicated in Annex-2.

The following items are included in the scope of responsibility on the Vietnamese side.

- Allotment of 8,500 sqm of land in Thanh Tri District for the Project.
- Leveling of the site to the proposed level indicated in the detailed design document.
- Construction, procurement and other works
  - Administration building
  - Parking Garage
  - Site works
  - Canteen
  - Security guard house
  - Wells
  - Incinerator
  - Mechanical Building (Architectural and structural works, Detailed Design, and supervision works)
  - Equipment (see Annex-4)

7. Necessary measures

The Vietnamese side confirmed that the Ministry of Health of Viet Nam will be responsible for the operational costs and the allocation of the necessary personnel as described in Annex 5 and 6 once the facilities enter into production.

8. Technology upgrading scheme and "Soft Component" of the Grant Aid Project

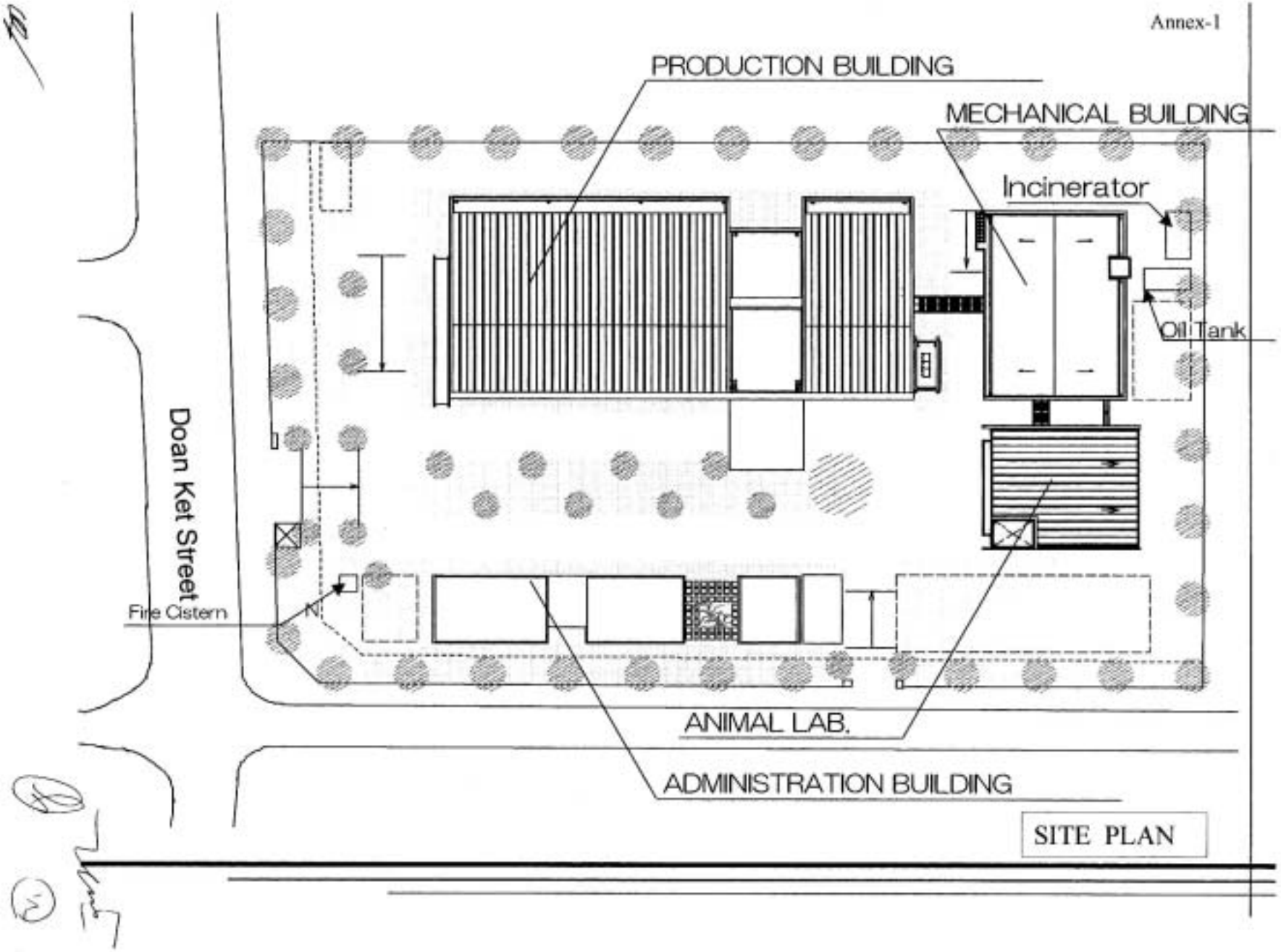
The Japanese side confirmed that total four persons (two "Bulk Suspension Preparation" and two "Quality Control") could be accepted for counterpart training in Japan in Japanese Fiscal year 2002. The Vietnamese side and the Japanese side confirmed that other technical transfer will be discussed further among the Vietnamese side, the Japanese side, and WHO, and that a part of validation and facility maintenance would be included in the Project as a Soft Component of the Project.

9. Other Relevant Issues

9-1 The Vietnamese side will complete the official appraisal for the Project and obtain the government approval for the implementation of the Project by the middle of November 2002.

9-2 The Vietnamese side committed that the legal agreement for the technical transfer, the supply of the seed virus (AIK-C strain) and the bulk vaccine between the POLIOVAC and the Kitasato Institute would be completed by the middle of November 2002.

Annex-1



SITE PLAN

Annex-2

Scope of Responsibilities for both countries

Scope of works on Japanese responsibilities	Scope of works on Vietnamese responsibilities
1. Architectural and Structural Works - Vaccine Production Building - Animal Test Building 2. Electrical Works - Vaccine Production Building - Animal Test Building - Mechanical Building 3. Air-conditioning, Sanitary and Plumbing Works - Vaccine Production Building - Animal Test Building - Mechanical Building 4. Medical Gas Works - Vaccine Production Building 5. External Works for Production Building & Animal Test Building - Concrete slabs surrounding building - Drainage works upto first diversion box 6. Equipment listed in Annex-3	1. Landfill and grading of the site 2. Construction of the following buildings including Architectural, Electrical and Mechanical Works - Administration Buildings - Parking Garage - Canteen - Security Guard House - Architectural and Structural Works of Mechanical Building 3. Site Works - Fences and gates - Landscaping - All of in-site roads and pavements 4. Lead-in Works and connection of utilities - Connection of incoming utilities, electrical power, telephone line and city water - Sewer after sewage tank. Drainage after first diversion box 5. Furniture and Fixture for Production Building, Mechanical Building and Animal Test Building - Curtains and Blinds (curtain rails and boxes provided by Japanese side) - General furniture 6. Equipment listed in Annex-4 7. Wells 8. Incinerator 9. Others - Relocations of existing furniture and equipment

Annex-3

Equipment List to be covered by the Japanese Side

No.	Name of equipment	Q'ty
1	Water supply unit	1
2	Vial washing machine	1
3	Dry sterilizing, cooling tunnel	1
4	Filling machine	1
5	Capping machine	1
6	Tray loading machine	1
7	Freeze dryer	1
8	Print & Labelling machine	1
9	Laminar flow unit	1
10	CO_2 Incubator	2
11	Rotator for microtiter plate	5
12	pH meter	2
13	Safety cabinet	1
14-1	Dry oven A	2
14-2	Dry oven B	1
15-1	Incubator A (23, 31, 35, 37℃) (23℃*2, 31℃*4, 35℃*1, 37℃*2)	9
15-2	Incubator E (58℃)	1
16-1	Centrifuge A	1
16-2	Centrifuge B	3
17	Endotoxin analyzer	1
18-1	Autoclave A	3
18-2	Autoclave B	2
18-3	Autoclave for lab	7
19	Thermo-hygrometer	5
20	Moisture content apparatus	1
21	Integlity testmachine , table	3
22	Dryer	1
23	ELISA reader	1
24-1	Refrigerator(4℃)	3
24-2	Freezer(-30℃)	9
24-3	Deep freezer(-70℃)	10
25	Filteration device	20
26	Clean bench	5
27	Cell counter(manual)	10
28-1	Microscope	4
28-2	Fluorescent-typed microscope	1
28-3	Inverted microscope	3
29	Water bath	3
30	Hand washer	15
31-1	Electric dispenser A (20cc*1, 100cc*4)	5
31-2	Electric dispenser B (200cc)	1
32-1	Vacuum pump	5
32-2	Pump tubing	1
33	Osmometer	1
34	Stirrer stand	1
35	Icemaker	3
36	N_2 liquid stocker	1
37	Test tube mixer	6
38	Ultrasonic washer	1
39	Desiccator	3
40-1	Electric balance A	1
40-2	Electric balance B	4
40-3	Electric balance C	3
40-4	Electric balance D	2
40-5	Electric balance E	1
41	Table for electric balance	4
42	Weight for calibration	1

No.	Name of equipment	Q'ty
43	Draft chamber	1
44	Pipet washer	3
45-1	Pooling tank A (10L)	100
45-2	Pooling tank B (20L)	10
45-3	Pooling tank C (70L)	2
45-4	Pooling tank D (100L)	2
45-5	Pooling tank E (200L)	2
45-6	Pooling tank F (70L, waste)	1
46-1	Egg incubatorA	1
46-2	Egg incubatorB	1
47	Incubator for egg stock	1
48	Plate washer	1
49	Hot plate	1
50	Formalin perfusion system	2
51-1	Magnetic stirrer A	1
51-2	Magnetic stirrer B	2
52	Hand alcohol splay	20
53	Particle counter(for Air)	4
54	Manual mixing device	1
55	Laundry machine	1
56	Drying machine	1
57	Total organic carbon analyzer	1
58	Conductivity meter	2
59	Air verocity meter	2
60	Equipment for cooling , generating steam	1
61	Cooling tower with pump	1
62	Specific items(trypsinization, syphon dispenser, etc.)	1
63-1	Sink : 1,200*750*800	13
63-2	Sink : 1,500*750*800	2
63-3	Sink : 1,800*750*800	7

Annex- 4

List of Equipment to be covered by the Vietnamese Side

No.	Equipment	Q'ty
1	PC bottles	2
2	Electric cleaners	2
3	Electric cleaners (HEPA filter)	2
4	Personal computer	1
5	Carriage (flat)	3
6	Carriage (3 shelves)	5
7	Table & lamp stand for visual inspection	1
8	Pipettes	100
9	Stainless containers	2
10	Glassware set	2
11	Plastic materials	2
12	Metallic materials	2
13	Chemicals	2
14	Materials for clean room	2
15	Garments	100
16	Machinery maintenance tools	1
17	Air conditioner maintenance tools	1
18	Electronic Service tools	1
19	Candling set	10
20	Shoe shelves	18
21	Chairs for clean room	41
22	Locker A	12
23	Locker B	17
24	Stainless rack	1
25	Moving shelves	2
26	Moving racks	25
27	All items of equipment for animal lab. except an autoclave	1
28	All of working tables	1

Items to be covered by Vietnamese Side (Tentative)

(1) Construction Costs

Security Guard House	Administration Building	Canteen	Parking Garage	Site Works	Wells	Incinerator	Mechanical Building*	Equipment	Total $901,600

*; Construction of architectural / structural works only. Design and supervision fee shall be incurred in addition to construction costs.

(2) Initial and Operational Costs

	2003	2004	2005	2006	2007	2008	2009	2010	2011
1) Initial Costs (Construction)	←	US$901,600	→						
2) Initial Costs (Costs for Technology Transfer & Training)	←		US$1,000,000		→				
3) Operational Cost				← Using Bulk	→	←	Using Seeds →		
				Training Phase ←		→ Production Phase			

Remarks;

Explanations for operational costs are indicated in the Chapter 4, Section 4-4 of the Draft Report, "Basic Design Study on the Project for Construction of the Measles Vaccine Production Facilities".

Annex-6

Allocation of Necessary Personnel

Name of Departments	Manager	Chief Engineer	Staff	Total
(1) General Manager	*1			1
(2) Medium Adjustment / Washing	*1	*2	*4	7
(3) Production	*1			1
1) Bulk Production		*3	*4, +2	9
2) Final Product				
- Vial Filling Freeze-drying		*3	*2, +2	7
- Labeling/Packing		*1	*3, +2	6
(4) Quality Control	*1			1
1) Microbiological test		*2	*1, +2	5
2) Animal test		*1	*2	3
3) Chemical test		*1	*2	3
4) GMP/Validation		*1	+3	4
5) Animal Breeding		*1	*1	2
(5) Administration				
1) Management		*1	+2	3
2) Accounting		*1	+1	2
3) Production Plan / Procurement		*1	+1	2
4) Maintenance (Building / Equipment)	*1	*1	+2	4
5) Security		+1	+2	3
Total	*5	*19, +1 (Total 20)	*19, +19 (Total 38)	63

Remarks: * Transfer from POLIOVAC

+ New employment