タイ国国立衛生研究所プロジェクト
計画打合せ専門家チーム報告書／
その他資料

1986年12月

国際協力事業団

タイ国国立衛生研究所プロジェクト
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その他資料

１９８６年１２月

国際協力事業団

序　　文

当事業団は，昭和61年6月29日より同年7月5日迄，深井孝之助プロジェクト国内委員を団長とする専門家チームを派遣した。

本チームの任務は，日ータイ双方のプロジェクト関係者によるステアリングコミティー及び第2回コーデイネーティングコミティーに出席し，昭和60年8月の開始後一年が経過した本プロジェクトを前半時点で見直し，当初計画との調整を図りつつ将来計画についてタイ側と協議を行うことであった。

またＮＩＨ建物の竣工は昭和61年秋に見込まれていることから，円滑な施設運営への対策の必要性をタイ側に認識させることも併せて本チームに課せられた任務であった。

本報告書は，上記目的のもとに派遣されたチームのタイ側との協議内容及び実情調査内容をとりまとめたものであり，関係各位のお役に立てば幸いである。

専門家チーム各位，専門家各位，その他関係各位のご協力に対し心から謝意を表したい。

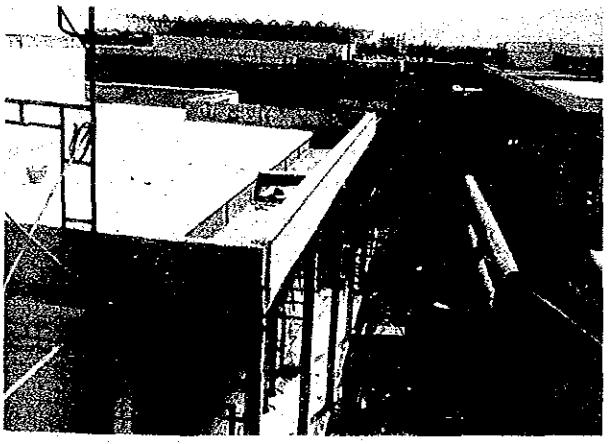
昭和61年12月

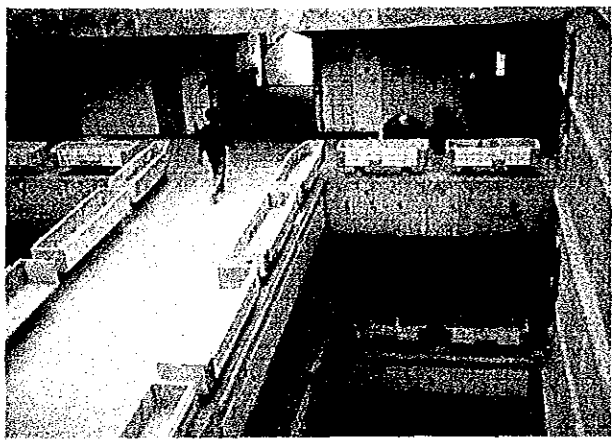
国際協力事業団

医療協力部長　小畑　美知夫

第10回　ステアリングコミティー

第2回　コーディネーティングコミティー





NIH建設風景

目　　次

1. 計画打合せ専門家チームの派遣

1－1 チーム派遣の経緯と目的

本プロジェクトは昭和60年8月1日より開始された。約1年を経過した時点で，運営上の諸問題，実施計画についてタイ側と協議し，残る4年間の協力をより効率化することが本チームの目的であった。

具体的には 1. 今後の協力計画
2. 中堅技術者養成協力事業
3. ＮＩＨの運営管理

である。

1－2 チーム構成

団長	深　井　孝之助	本プロジェクト国内委員 （財）阪大微生物病研究会　理事長
団員	金　井　興　美	本プロジェクト国内委員 国立予防衛生研究所　副所長
団員	山　中　　隆	国際協力事業団 医療協力部医療協力課

1－3 チーム日程表

6/29 日	深井	11:10 大阪 ——TG621——→ 17:30 バンコク 16:30
	金井・山中	東京 12:50 ——JL717——→ バンコク 16:30
30 月	9:30	日本大使館表敬
	11:00	DTEC表敬
	14:30	DMS 表敬
	15:50~19:00	チーム，事務所 日建設計，清水建設　打合せ
7/ 1 火	9:30~16:00	Steering Committee at DMS
2 水	〃	〃　〃
3 木	9:00~10:00	金井　DMS ヒアリング，他は打合せ
	10:30~12:00	GPO 見学
	14:30~16:00	ＮＩＨ 建設現場視察

4 金	9:30~12:00	第2回 Coordinating Committee at DMS			
	19:00~	調査団主催　招宴			
5 土	深井	10:30 バンコク	TG620	19:55 大阪	
	金井，山中	8:30	JL474	東京 16:30	

1－4　主要面談者

organization	name	position
日本大使館	浦　部　和　好	参　事　官
	高　山　康　信	一等書記官
JICA タイ事務所	甲　斐　寿　治	職　　員
DTEC	Mr.Pracha Chaowasilp	Deputy Director-General
	Mr.Sutin Susila	Chief, Japan Sub-Division
	Mr.Surayuth Kungsadan	Member, 〃
DMS	Dr.Somsak Varakamin	Director General
	Dr.Boonluan Phanthumachinda	Deputy Director-General

1－5　プロジェクト実績（専門家・研修員）

1－5－1　専門家

	氏　名	分　野	格付	所属先	期　間
1	中島衡平	調整員	3		85. 8. 1–90. 7.31 (5年)
2	村田良介	チームリーダー	医特–1		85. 9. 5–85.10.15
3	百村薫	免疫化学	5－2		85. 9. 5–85. 9.26
4	阪崎利一	細菌学	特－2		85. 9. 5–85. 9.30
5	佐藤保	生化学	1－1	予研	85.11.20–86. 2.19
6	吉田正道	日本脳炎ワクチン	1–2('86,3月迄 2–1)	(財)阪大微研	85.12.11–87.12.10 (2年)
7	三輪谷俊夫	細菌学	医特–2	大阪大学微研	86. 2.23–86. 3. 9
8	本田武司	〃	医 2–1	〃	86. 2.23–86. 3.16
9	岩佐三郎	生物統計	特2	予研	86. 5.28–86. 8.27
10	深井孝之助	計画打合せ	医特1	(財)阪大微研	86. 6.29–86. 7. 5
11	金井興美	〃	医特1	予研	〃
12	山中隆	〃	4	JICA	〃
13	鈴田達男	免疫学	医特2	東京医科大学	86. 7.25–86. 8.26

以上 FY60分

	氏名	分野	格付	所属先	期間
14	和田義人	昆虫学	特2	予研	86. 8. 10 － 86. 8. 30
15	伊藤嘉典	真菌毒素	3号	〃	86. 9. 14 － 86. 12. 13
16	中川雅郎	実験動物	特2	〃	86. 12. 1 － 87. 1. 31
17	根路銘国昭	生物製剤	1－2	〃	86. 12. 5 － 86. 12. 26
18	山西弘一	免疫学	医1-2	大阪大学微研	86. 12. 6 － 87. 1. 5
19	森谷清樹	昆虫学	特2	神奈川県衛研	86. 12. 21 － 87. 1. 20
20	阪崎利一	細菌学	特1		87. 2. 10 － 87. 2. 20
21	時吉幸男	狂犬病ワクチン計画打合せ	2－2	化血研	87. 2. 16 － 87. 2. 22
22	坂本国昭	〃	2－2	化血研	87. 2. 16 － 87. 2. 22
23	加藤茂孝	ラジオアイソトープ	2－1 (87.4以降 1－2)	予研	87. 2. 18 － 87. 4. 17
24	浅野敏彦	実験動物	2－1	〃	87. 3. 4 － 87. 4. 28

1－5－2　研修員

1. Mrs. Preeya Kashemsant Deputy Director General, DMS	「Management of Medecal Institute and regional health labo.」 84. 9. 24－84. 10. 10	予研, (財)微研
2. Mrs. Preeya Kashemsant Deputy Director General, DMS	「Management of Medical Institute and regional health labo.」 85. 7. 22－85. 8. 9	予研, (財)微研他
3. Dr. Boonluan Phanthumachinda Director, Division of Medical Entomology, DMS (当時)	「Health research planning and management」 85. 9. 18－85. 12. 18	予研, (財)微研他
4. Dr. Yoawapa Pongsuwanna Medical Scientist, Virus Research Institute	「Genetic study of virology」 85. 9. 18－87. 3. 31	予研
5. Miss Wallapa Israngkul Na Ayuthya Medical Scientist, Virus Research Institute, DMS	「Immunochemistry」 85. 10. 29－86. 10. 28	大阪大学
6. Dr Surachai Tishyadhigama Medical Scientist, Division of Clinical Pathology, DMS	「Genetic study of bacteriology」 85. 12. 10－87. 5. 26	東京医科歯科大

7. Miss Noppavan Janejai Medical Scientist, Division of Drug Analysis, DMS	「Radioisotope Technique」 86. 3. 25–87. 3. 20	予研
8. Mrs. Surang Dejsirilert Medical Scientist, Division of Clinical Pathology, DMS	「Systematic Bacteriology」 86. 3. 25–87. 3. 20	予研
9. Mr. Tanawat Nantamingcharern Medical Scientist, Division of Medical Research, DMS	「Laboratory animal care」 86. 4. 27–86. 10. 31	予研
10. Mrs. Teeranart Jivapaisarnpong Medical Scientist, DMS	「Bioassay & method development for new biological products」 86. 12. 2–87. 12. 1	(財)微研
11. Miss. Natteewan Poonwan Medical Scientist, Mycology Section DMS	「Experimental pathology」 86. 12. 2–87. 12. 1	(財)微研

2. チーム報告

2－1　金井興美　団員

2－2　山中　隆　団員

2. チーム報告

2－1　金井興美　団員

1986年6月30日より7月5日に至る1週間，深井孝之助博士を団長とし，JICA医療協力部山中隆氏とともにタイ国バンコク市を訪問し，現地大使館，JICA事務所の関係者の協力のもとに，表記の件についてタイ側と協議を行った。この期間における協議スケジュールと両国の協議参加メンバー等については別途報告があるものとし，ここでは全般的な印象（意見）を述べ，さらに村田国内委員長ならびに深井団長より特に私に課せられた二，三の局面について報告を行ないたい。

1. 全般的印象と意見

1）技術援助対象国として，タイ国は対応のし易い国であるとの印象をうけた。これは私がこれまで経験した国々（フィリピン，インドネシア，トンガ，ケニア，コロンビア，韓国）と比較してのことである。しかしそれ故の問題がないわけではない。これについて二，三の意見を加える。

——タイ国は植民地化した歴史がなく，宗主国をもたないためか，外国に対する屈曲した国民感情はすくない。逆に言えば，それだけ自然なプライドは高い筈であるが，民族性として，あるいは仏教徒として，プライドは顕在性ではなく，闘争の形をとらないように見受けられる。このことは，DMSのみならず関連機関の人達との接触の中で常に感じられた。したがって，協議はごく友好的な雰囲気の中で進行した。

——プライドの高いことは，対外国という限られた範囲のことではなく，タイ社会日常生活の人間関係においても同様である。このことはこの国の行政組織が日本以上に“タテ割り”であり，横の連絡が形成されがたい理由であり，伝達された技術が波及効果をもちがたい原因でもあろう。

——私達の述べる意見には，比較的すみやかにタイ側の反応があり，最後のThe Second Coordinating Committee Meetingにおいては，“Revised”の資料，あるいは追加資料の形で出されてきた（後述）。ただ，こうした従順さがかえって“たよりない”印象を与える場合のあることも否定できない。

——ひとつの問題について，他から（外国等）の文書をもとに計画書をつくる能力はすぐれている。しかし，現実に則して実質的な発展の筋道を自からシステム化することは，かならずしも充分ではないようである。とすれば，話し合いの順調さはかならずしも実行の確実性を裏打ちしているものではないようである。

——DMS，したがってNIHに移行した場合も同様であるが，主要職員（staff）の大部分が女性であるという現実は多分に奇異であった。たしかに彼女らはそれなりにすぐれており，研究者としてのキャリアーと実績のもとにその立場にあると信ずるが，もし，これが女

性の職場としての緊張り的な結果であるとすれば問題であろう。

——いろいろなちがいはあっても，タイ国の人達は日本人と生活感覚はかなり共通的であるし，また，能力の高い民族である。タイで成功しないことは他の国では一層困難であろう。

——あたらしい考え方の若い世代がＤＭＳに養っていることもたしかであり，彼女等の今後の活動に期待して技術援助は可能性をもっている。

2）以上，多少きびしい表現にもなったが，工夫を加えることによって，このプロジェクトは効果をあげ得るものと考えられる。その基本的な考え方として，

——技術協力はあくまでも日本側の研究方法や実験技術の伝達であって，思想，社会通念，価値観等を含めるものではない。

——タイ国ＮＩＨ側の自主性を重んじ，研究活動における自発性を促進する方向で技術伝達を実施する。

——援助計画の目的にかなう限り，またＲＤの示す範囲において，タイ国側の希望には柔軟的に対処する。

——現実に則し足が地についた技術援助を主体とすべきである。しかし，タイ側が先端的な分野に関心をもつ場合，それを全面的に否定することは，先方のプライドを傷つけることになる。研究所の士気を鼓舞し，教養番組という意味でも，ある程度その希望に応ずべきであろう。

——ＮＩＨはひとつの研究機関であって，単なる検査機関ではないことを強調すると同時に，政府保健省に所属し，一般大学とは異なり，衛生行政の技術的中核になるという認識を徹底させる。そのためには，レファレンス・サーベイランス，生物製剤の試験製造と品質管理に充分機能しうるよう，潜在能力を備える必要がある。それがＮＩＨの研究活動の使命であり，日本側の技術援助の目的である。（Coordinating Committee で指摘した）

——しかし上項のことは，ＮＩＨが閉鎖的になれということではなく，逆に大学を含めた外部機関との連携を強めて相互に利益を交換することが得策であり，必要でもある。今回NIHがタイ国内では他にみられないすぐれた研究環境，設備をもったことは，そうした連携の推進に大きく役立つ筈である。

2. 専門家派遣と研修生のうけ入れ

1）今後の専門家派遣にあたっては，ＤＭＳ→ＮＩＨへの移転（引越し）があるので，現地での技術援助作業がそれによってdisturb されないよう配慮する必要がある。新庁舎がまだ充分機能しない時期に派遣するのも避ける。

2）専門家の派遣については，昨年来，村田国内委員長ならびに深井委員の努力によって順調に進行しており，その結果，タイの事情にもなじみ，援助活動に一層の関心を強めている日本側の研究者もあるかに聞いている。こうした経験者が，今後も状況の許すかぎりにおいて，再三タイ国ＮＩＨに赴くことは，すくなくとも先方にとっては有益であろう。

3）タイ側には専門家の長期滞在を望む声が強いと聞いているが，これはメリットも大きい一面，専門家に対する先方の依存心のみを高める場合もないわけではない。その辺を考慮すれば，一般の技術伝達は長くて3ケ月程でよいと判断される。

4）ワクチン生産のシステム導入等の技術指導においては，当然ながら1～2年という期間を必要とすることはありうる。

5）タイＮＩＨスタッフの多くが女性研究者であるという点を考慮すれば，女性専門家の起用も積極的に考えてよいであろう。

6）国家公務員に60才定年制が導入された現在，そうした退職者のうちプロジェクトに合致する研究経歴者の起用が考えられる。

7）ある分野においては，タイＮＩＨのスタッフと共同研究を実施する作業の中で，研究方法，実験方法の伝達ができるのではないか。ＮＩＨの建物と施設はそうした環境の提供に充分である。

8）長期出張者は，一度短期出張し，先方の実情をよく調査し，帰国後よく準備を整えて行くようにすべきである。

9）言葉の不自由さを克服して技術伝達の効率をあげるために，各専門家はできるだけタイＮＩＨの現状に合った実際的なマニュアルを英文で作り，帰国に際してこれをタイ側に残してゆくことが望まれる。手技に関するシェーマ，写真などを，説明の録音テープと連関したスライドにしておけば波及効果は更に大きく，こうした蓄積がこれからの4年間になされるならば，プロジェクト終了時にはタイＮＩＨに対する大きな置土産になるであろう。供与機材を用いての実験マニュアルであるから，その意味は大きい。このような教材は所（ショ）のものとすると利用度がおちるし，また個人にあずけても私物化するので，コピーをいくつか用意することが必要であろう。

10）1986年後半から1987年度にかけての専門家派遣についての個人的試案は別紙に記した。

11）会計年度に研修生の受入れ3名という枠は大きな制約である。貴重な枠の有効利用を慎重に考えるべきであり，WHO fellowshipの利用についてもタイ側に努力を要請すべきであろう。

12）特定分野について研修生の受入れを先行させ，同人の帰国後に専門家を派遣して，同研修生をcounterpartとすれば，技術援助の効率を高めることができよう。しかしこの場合，技術伝達が両者の間のみに終らず，広い波及効果をもちうるよう配慮すべきである。

3. ＮＩＨの保守管理に関する諸問題

これらについては同行したJICA医療協力課山中隆氏の報告にゆずるが，私の個人的意見としての二，三をつけ加えたい。

ＮＩＨ新庁舎は，機能的によく整理されたレイアウトになっており，特に共通利用施設はゆきとどいた配慮によって，その経済効率のよい使用が可能な設計となっている。しかも，一般研究

室を含め，ある程度研究者自身で電気系統など施設の管理ができうるように工夫なされた。これも建物の引渡後に対する配慮である。

しかし，タイ側にとってはこれまで経験しなかった施設，設備が多く，建物を含めそれらの保守管理については相当の覚悟を必要とする。引渡し後もしばらくは，日建職員による指導はあるにしても，できるだけ早い時期にタイ側の自主的管理に移行しなければならない。このためのＮＩＨの組織として，別添資料のようにScientific Equipment Center があり，４つの機能分担セクションにわかれて，実験機器，装置，コンピュータシステムのみならず，建物それ自体の電気，水道，電話，ガス，真空，エレベーター，空調，下水の維持管理に責任をもつ計画である。しかし，こうした広範な仕事に対応できる経験者を当面期待できない。これらからの人員補充をもつと対処するとのことであるが，その間におけるDr.Somkiat の負担は極めて大きいものになろう。この点に関する議論は大変深刻であったが，それ以上をでることはできなかった。ＮＩＨ発足にあたって人員増が許されるならば，最優先として建物施設の保守管理要員にふりむけられるべきであり，あるいは，業者と委託契約を結ぶ予算をタイ側が獲得する必要がある。

ＮＩＨの運営予算に関しては，担当部局の責任者は“Don't worry about ”と私達ミッションの前で明言した。その発言に期待せざるを得ない。この９月には，マニラの熱帯医学研究所を訪問し，プロジェクトに関する技術交換の予定と聞いているが，参考になる点が多い筈である。また，日建側には，建物，施設の使用法と保守管理に関して，一般職員にも協力の可能な部分については，わかり易い図式のマニュアルを用意されることを要望したい。

各　　論

レファレンスシステムについて

ＤＭＳにおけるレファレンス業務は，Department of Clinical Pathology が細菌関係を主体として実施してきた。この部の詳細については，事前調査報告書の記述で充分であるので，ここでは今回の協議で得られたタイ側の発言と資料から，ＮＩＨ発足後におけるレファレンスシステムの将来を問題としたい。

日本側の発言に対しては，主として上記臨床病理部の部長であるDr.Ratanasudaが対応した。第2回目のCoordinating Committee で提出されたタイ側の計画案は，この討議内容をふまえたＮＩＨのレファレンス強化策であり，“Reference System” という一項目となって“Bacteriology”の将来プランに添付された。同時に，これまで臨床病理部が関係諸機関と連絡網を作って実施してきたレファレンスシステムが，フローチャートの形で提出された（別紙）。これはサーベイランスシステムを含めた概念図であり，ＮＩＨ成立後も同様の形で作動するか否かは明白ではない。ＮＩＨの組織においては，Department of Clinical Pathology は，Bacteriology, Mycology, Parasitology の3部に分化して再発足することになる。このうち細菌部が従来の延長線上でレファレンス任務を担当することは予想される。なお箇条書きに幾つかの局面を考えたい。

1）レファレンス活動はＷＨＯの方針に沿って，微生物に関する臨床（病院）検査と公衆衛生検査の双方を包含しており，これはタイの現実にかなうものと考えられる。

2）ＮＩＨの中央レファレンス機能強化策として，①病原菌の生物学的，遺伝学的同定法修得のための研修生の派遣（1989/1990，12ヶ月）　②マイコプラズマ研究室の設置　③リケッチア・クラジミア研究室の設置が要望されている。②，③については日本側からの専門家の派遣によってその発足に援助ができるであろう。

3）今回あらたにＲＤを結んだ中堅スタッフの訓練コースも，その効果がＮＩＨのレファレンスセンターとしての能力強化につながることは，日本側の質問に対してタイ側もその認識を表明した。その第1回コースは本年度中に開催が予定され，受講者はＮＩＨスタッフにかぎられている。このコースを将来においては，The Regional Medical Science Center Laboratories の職員にも及ぼすことは，タイのレファレンスシステムの強化につながると考えられるが，日本側の質問に対して“I hope so.”の返事にとどまっていることは，実施上になにか困難な事情があるのであろうか。

しかし，タイ側もＮＩＨの支所であるRegional Center の職員に対し，別途の訓練コースを設けることは計画しており，各種細菌，真菌の分離同定を中心に技術伝達をすすめ，レファレンスシステムの強化を意図している。

4）別紙のように，“細菌学におけるレファレンスシステムの現状”と題して，フローチャート

が提出された。これは概念的には，わが国におけるサーベイランス・レファレンスシステムと似かよったもので，保健省疫学課が患者情報を，ＤＭＳの臨床病理が病原体分離情報の収集還元のセンターをなし，相互に地方の連携機関とネットワークを形成して，患者情報，病原体情報の総合と連関がなされるように配慮されている。

将来の計画として，いくつかの周辺プロビンスラボラトリーに対して，ＤＭＳの地区センターが指導的役割を果し，レファレンスサブセンターとしての立場を強化してＮＩＨを援助するような案となっている。これもわが国の構想を範としているように見えるが，階級制度が強固であり，日本以上にたてわり社会でセクショナリズムの強いこの国において，どの程度作動してきたのか，あるいは作動するであろうか，はかならずしもあきらかではない。

5）タイのレファレンスシステムの将来を考える場合，JICA としては，1度は Regional Medical Sciences Center と Provincial Laboratories の現状をみておく必要がある。レファレンスシステムの効率化を計るには，仕事の集中化と分散化を上手に組合せるのがよく，ＮＩＨで集中的に処理した方が適切なものを，わざわざ分散させることはない。地方には極めてルチーン的なものについて，技術を安定させることが得策であり，その可能性と限界を知るためには上記の調査をJICA 専門家がなすべきである。

バイオハザードラボラトリーについて

時代の要請もあり，ＮＩＨ構想の中でバイオハザード対策も浮上し，その庁舎設計の中でＰ３レベルの実験室がひとつ用意され，機材供与の中に，24 台の safety cabinet が含まれている。

今回のタイ側との協議の中で，バイオハザードに関する専門家の派遣が高い優先順位の要請となっているので，それに関連して意見の交換を行った。

ＮＩＨ新庁舎が発足するにあたって，安全施設，安全機器の使用法は習熟することは勿論必要であるが，安全基準をつくり，それを順守する制度面もそれに伴なって整備されることが望ましい。日本側の質問に答えて，タイ側はあらたに作成した Guideline を提出した。その内容はWHOが先年示した基本的な考え方，一般的な方針をうけついだものであり，今後，タイに個有の疫学条件，環境条件を考慮した病原微生物の危険度分類など，もうすこし具体案をすすめる必要がある。

Ｐ３施設を含むバイオハザードラボラトリーは，ＮＩＨの組織図において，特定の部に属さず，動物実験センター，放射能実験室，科学機器センターなどと同列においてＮＩＨ所長に直属し，研究支援機構として機能する計画である。

日本側の意見として，バイオハザードに対する安全性確保のために一番重要なことは，施設，安全キャビネット，規約づくりではなく，病原微生物を扱う基本的な方法を実行すること（Good Laboratory Practice）であることを強調した。

いずれにしても，タイ側の要請に答え，ＮＩＨ新庁舎への移転後，適当な時期に専門家を派遣し，施設，機器の使用，あるいはＰ３ラボの運営法について指導し，あわせてGuideline一般についてTraining course を実施することは有益と思われる。このことは庁舎全体の“使い方”の指導にもつながるからである。

ＲＩラボラトリーについて

ＮＩＨ新庁舎においては，“all fresh-air type”の独立空調系をもったＲＩ管理区域が，充分なスペースで共通利用施設棟の中に用意され，排水系も独立しており，RI廃棄物の処理槽を含め，タイではもっとも整備されたものとなろう。また，“Gencral Precaution in Radio-isotope Laboratories”と題するＲＩ安全使用ガイドライン（別紙）も作成され，一般的な注意はすべて記載されている。しかし，新庁舎のＲＩラボのための個有の運営規則はまだ準備されておらず，したがってＲＩ使用者の登録とその健康管理計画といったこともこれからの仕事である。タイ側の問題であるが，健康管理責任者としては，M.D. であるDr. Paiboon が適任ではなかろうか。彼はDMSのDivision of Radiation Protection Services のDirectionであり，ＲＩＡ Committee の Chairman でもある。

ＮＩＨ新組織においては，Radio-isotope Lab. は特定の部に属さず，動物実験センター，バイオハザードラボなどと同じくＮＩＨ所長に直属の研究支援サーヴィス機構として働くことになる。その実際上の運営は，必然的にＲＩＡ Committee が担当することになろう。この委員会のメンバーと責任範囲については，別紙の示す通りであるが，その内容はＲＩ使用者に対するコンサルタントグループ，そして評価委員会であり，Lab，施設の維持管理，廃棄物処理，あるいはＲＩの入手，保管等に関する実務と事務処理を誰がするのかという点で不安がある。委員の１人にDr. Somkiat Wungkobkiat の名がみえるが，Scientific Instrument Centerの責任者として広範な負担をもつ彼に，ＲＩラボ施設に関する上記の仕事までが全面的に押しつけられることになるのは問題であろう。この委員会をSteering Committee として，その下に実動しうる放射能管理室（予研の技術部のような）の存在は不可欠と考えられる。

放射能（ＲＩ）取扱いの資格について，日本における“放射線取扱主任者”のような制度についての質問に対して，返答はかならずしも明瞭ではなかった。しかし，タイ国の法律にAtomic Energy for Peace Act”の条項 Section 12 において，the Commissionから出されるライセンスの必要なことが記されているので，日本流に考えればＮＩＨに１人有資格者がおり，ＲＩラボの直接責任者となることが望ましい。

DMSにおけるDivision of Radiation Protection Servicesは，ＮＩＨ に移行しないと聞いている。しかし，ここの部長であるDr. Paiboonに面接の折，DMSの Radioisotope Laboratory Expansion Project という文書を受けた（別添資料）。このプロジェクトは実際にはＮＩＨで実施される予定のもので，他部のアイソトープ使用実験に協力するという支援活動

とは別途に，ＲＩラボ自体の業務であり，自主的研究活動，開発研究であると理解してよいであろう。

そのプロジェクト内容を要約すると，その基本目的においては，前述の細菌検査のレファレンスシステムと同じく，ＮＩＨをセンターラボラトリーとし，全国６ケ所のＤＭＳの地方支所をサブセンターとし，さらに地方検査所や病院検査室を含めてネットワークをつくり，ＲＩ技術に関して全国的な管理，指導，精度管理ならびに支援体制を樹立することにある。

具体的な仕事内容は，大別して２つの系統になる。ひとつはまづ抗血清（何を対象とするかは今後の課題）をつくり，それにヨードでラベルして診断用トレーサーあるいは診断用キットとする。こうした生産システムと，その品質管理体制をＮＩＨのＲＩラボの中につくること。次には，抗血清のような“生物学的製剤”ではなく，一般の病院むけの診断用放射能製剤の生産とその品質管理である。この後者は今回のプロジェクトの範囲内であるか否かも問題であるが，タイ側の関心と要望が極めて高いのはそれなりの理由があるのであろう。前者に関しては，ラベル以前の問題として，充分な抗体価をあげうる基本技術がまだ確立していないようであるし，またラベル操作後の精製技術を修得して，ＲＩの比活性をあげることも，上記の生産と品質管理に不可欠である。今後の専門家派遣の目的は，その出発点の確立に手を貸すことであろう。

なお，ＲＩに関するタイ側の受入れ体制について触れれば，結局はＲＩＡ Committee のSecretary であるMiss Wiyada Charoensiriwatana を窓口として，その積極性と活力に頼らざるを得ない。彼女のとらわれない資質はそれに適任であるし，また，委員長であるDr. Paiboon の信頼も厚い印象をうけた。帰国する研修生Miss Noppavan ともども，再度専門家としてタイに赴くDr.Kato の指導によって，ＲＩラボの設立に貢献できることを期待したい。

資料1　1986年後半から1987年度にかけての専門家派遣に関する状況と私案

1. 細　菌　学：吉崎氏が考慮されていると聞いている。
2. 真　菌　学：予研で考えて欲しい旨，深井委員からの希望があった。帝京大学医学部医真菌研究センターの山口英世博士に依頼して専門家をえらぶか，むしろ研修生にきてもらう。しかし，Histoplasmosis などもタイ側の関心事（将来プラン）になっているので，そうした事情はもう少しつめる必要がある。
3. DPT ワクチンを含む生物学的製剤：もっと内容を specify する必要がある。赤真部長に積極的な協力の気持あり。
4. バイオハザート：予研の腸内ウイルス部小松俊彦主任研究官が適任であるが，短期派遣でないと予研自体が困ることになる。都合がつかない場合は私（金井）が代行しても可。
5. 環境毒性学と癌原性：Ames test の技術伝達としてのみ取りあげるのがよい。専門家として衛生試験所の三瀬部長，その他阪大微研や大阪府立公衆衛生研究所に人材がいる筈。
6. 細菌毒素：腸内細菌の毒素が主体であるので，深井委員から阪大微研にお願いするのがよい。
7. マイコプラズマ：タイ側の希望は，呼吸器感染病としてのマイコプラズマであるが，菌の分離培養技術の技術伝達であれば，予研生物製剤管理部の木原光城室長が適切。マイコプラズマを扱う基本的手技の伝達に加えて，組織培養やウイルスワクチン管理の指導にもなる。無菌試験を中心とした検定業務のシステム，品質管理のあり方を担当しては。なお，同氏は62年4月1日をもって退職の予定。
8. リケッチア，クラミジア：予研から出すとすれば，クラミジアに関して獣疫部の萩原敏旦主任研究官。リケッチアに関しては，タイ国でも感染例がわが国同様に増加しているための要請。
9. アルボウイルスに対する単クローン抗体の作成：単クローン抗体作成の一般的基本技術の伝達が先であろう。予研であれば幾人か候補者がいるであろう。
10. 狂犬病ウイルスの生物学的研究と家兎中和抗体の迅速測定法：化血研大友博士の狂犬病ワクチン製造に関する技術援助計画の中で考える。
11. 動物実験：予研福井部長，中川室長が86年度既に派遣されることになっているので，

更に翌年度１ケ月間の中でタイ側が期待するものは何かを確認しておく。

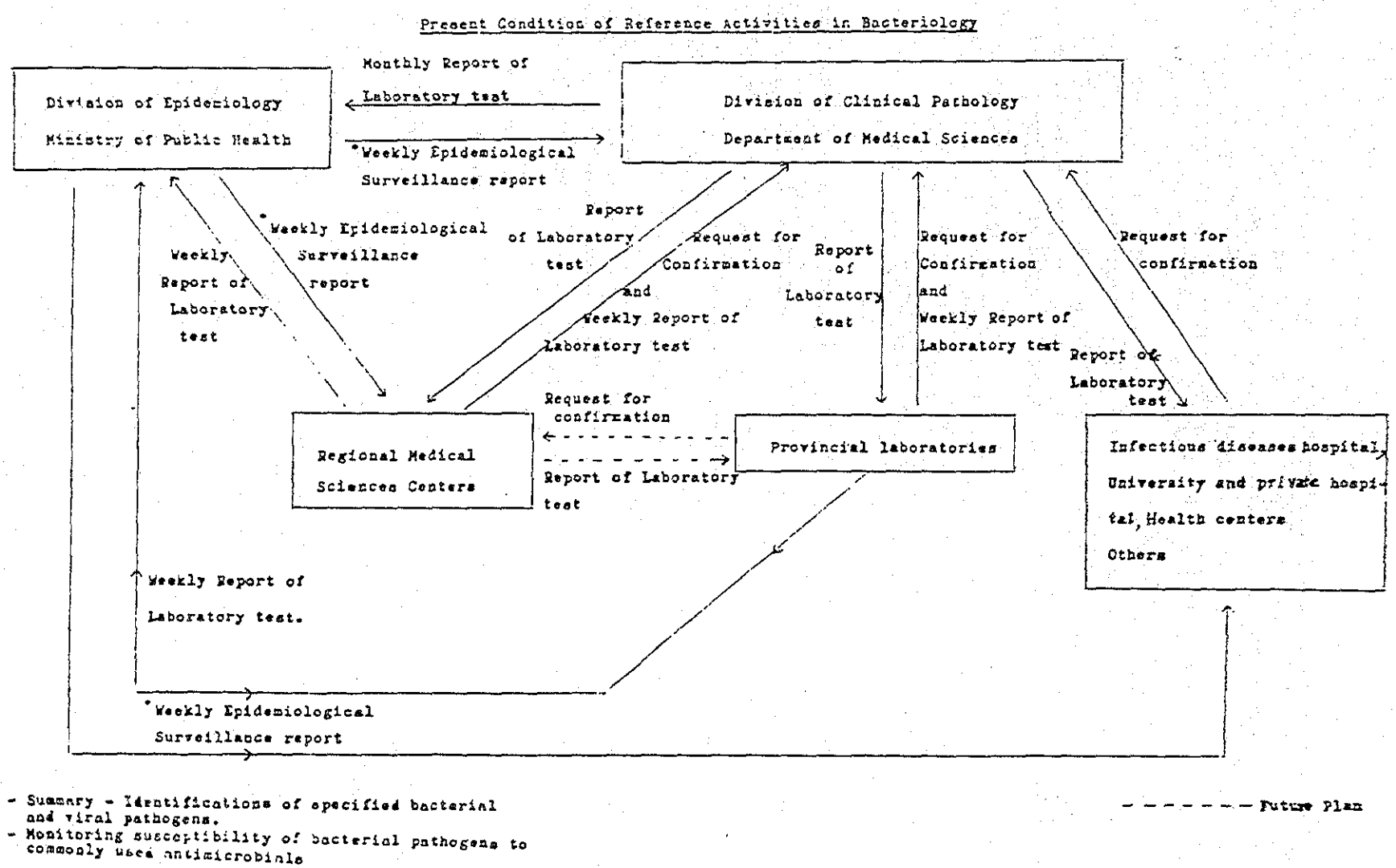
12. 遺伝子工学：中谷教授のところに既に研修生がきているので，その帰国後において，適当な専門家を中谷教授に依頼する。

13. ＲＩ　：Radio pharmaceutical drug の Quality control が主目的であると聞いているが，それであればむしろ衛生試験所におねがいしては如何。予研としてはＲＩラボの運営管理について前川室長がごく短期でもＮＩＨ移転初期に派遣できれば，極めて有効である。それがむしろ先決のように思われる。ＲＩについて別途詳細に論ずる。

14. ヴェクターに関するレファレンスシステム：予研和田部長，小山部長に問合せる。目黒寄生虫館，国立博物館なども考慮にいれる。

以下　略。

資料 2


Present Condition of Reference Activities in Bacteriology
Division of Epidemiology
Ministry of Public Health
Monthly Report of
Laboratory test
*Weekly Epidemiological
Surveillance report
Division of Clinical Pathology
Department of Medical Sciences
*Weekly Epidemiological
Surveillance
report
Weekly
Report of
Laboratory
test
Report
of Laboratory
test
Request for
Confirmation
and
Weekly Report of
Laboratory test
Report
of
Laboratory
test
Request for
Confirmation
and
Weekly Report of
Laboratory test
Request for
confirmation
Report of
Laboratory
test
Request for
confirmation
Regional Medical
Sciences Centers
Report of Laboratory
test
Provincial laboratories
Infectious diseases hospital,
University and private hospi-
tal, Health centers
Others
Weekly Report of
Laboratory test.
*Weekly Epidemiological
Surveillance report
- Summary - Identifications of specified bacterial and viral pathogens.
- Monitoring susceptibility of bacterial pathogens to commonly used antimicrobials
Future Plan

資料 3

MEMBER OF RIA COMMITTE

1.	DR. PAIBOON SA-NGOBWACHAR	CHAIRMAN
2.	DR. M.L. RATANASUDA PHANURAI	
3.	DR. SOMKIAT WUNGKOBKIAT	
4.	MR. KRIRK RATARPA	
5.	MR. WATTANA AUVANICH	
6.	MISS WIYADA CHAROENSIRIWATANA	SECRETARY

RESPONSIBILITY OF THE COMMITTE

1. Act as a consultant group for scientists who do the research in the area of Medical Health Sciences using radioisotope technique and equipments as well as the radiation protection process.

2. Follow up and evaluation the research projects which utilize the radioisotope technique , equipments and report to the Department of Medical Sciences.

3. Act as a co-ordinator in maintenance the RI equipments.

4. Act as a co-ordinator in requesting the technical assistance, scholarship and training fellowship from the International Organization.

General Precaution in Radioisotope Laboratories

1.1 General procedures in laboratories and radioisotope departments.

1.1.1 Each institution must draw up its own detailed local rules for handling unsealed radioactive substances which must be supplemented by careful training of staff at all levels. Major changes in procedures and new procedures must be approved from the point of view of radiological protection by the Radiological Safety Officer of the relevant department and should be tried out by dummy runs, with or without radioactive substances.

1.1.2 A system must be provided for checking and recording the activity and identity of unsealed radioactive substances before administration to patients. Equipment used for this purpose must be calibrated at regular intervals with standard sources. The terms millicurie and microcurie should be written out in full to avoid mistakes.

1.1.3 Working procedures should be designed to minimize the spread of contamination from the working area, not only in the interests of the safety of persons but also to prevent interference with measurements of radioactivity. For this reason, all dispensing of radioactive substances should be done in a fume cupboard or glove box especially when particulates or aerosols are involved.

1.1.4 Because of the danger of direct transfer of radioactive substances into the body, eating, drinking, smoking, and the application of cosmetics must be forbidden in laboratories using unsealed radionuclides. A drinking fountain, however, is admissible.

1.1.5 Laboratory coats (or protective gowns), preferably reserved specifically for work with radioactive substances, and surgical or similar gloves must be worn for all procedures involving dispensing of radioactive substances and their administration to patients. In addition, especially for work with higher activities, overshoes should be worn. Gloves used for manipulating radioactive substances must not be used outside the active laboratory. The method of putting on and removing gloves should be based on the surgical technique so as to avoid transferring activity to the hands or to the inner surfaces of the gloves. Contaminated gloves should be washed before they are taken off. Regular systematic monitoring of the hands and gloves should be carried out.

1.1.6 When equipment is provided specifically for the safe handling of unsealed radioactive substances, it must be used. Such equipment should not be moved from the working area in which it is used. The operation by mouth of pipettes and wash-bottles must be forbidden.

1.1.7 The working area must be kept thoroughly clean and tidy. Cleaning methods (including those for the floors) should be chosen so as to avoid raising dust.

1.1.8 Specialized equipment for handling radioactive substances must be routinely serviced and protective clothing, especially gloves, must be routinely examined so that faulty items can be rejected when defects occur.

1.2 Monitoring of laboratories and working areas

1.2.1 Wards, operating theatres, clinics, and laboratories in which work with unsealed radioactive substances is undertaken must be monitored both for external radiation and for surface contamination, on a regular and systematic basis. Adjacent rooms and corridors must also be monitored periodically. The purpose of such monitoring is to establish the adequacy, from the point of view of radiological protection of current working methods and to provide experience in the light of which new techniques may be safely introduced. Monitoring results must be properly recorded for future reference.

1.2.2 Maximum permissible doses and derived working limits for surface contamination are given in Appendices B and D respectively.

1.2.3 Monitoring for external beta and gamma-radiation must be instituted whenever work is undertaken with unsealed radioactive substances having an activity greater than 1 millicurie.

1.2.4 The most suitable instruments for this purpose are portable battery-operated exposure-rate meters. For the measurement of gamma-radiation these may be of the ionization chamber, GM counter, or scintillation detector type. Some ionization chamber types of instrument are suitable for the measurement of both beta and gamma-radiation. The instruments should be capable of measuring exposure-rates from about 1 mR^{-1} upwards. When highly active gamma-ray sources are being manipulated, the provision of instruments that give an aural or visual alarm or both of the presence of high exposure-rates should be considered.

1.2.5 Monitoring for contamination involves the following :

1.2.5.1 All working surfaces and the floor of the laboratory or ward must be regularly and systematically monitored for contamination. Surveys of similar surfaces in adjacent rooms and corridors must be carried out as necessary. Equipment and other items should be monitored while situated in, and on removal from, active areas. Direct monitoring should be the rule but, where this is not practicable, wipe testing should be used.

1.2.5.2 Clothing, including shoes, of staff working in active areas must be monitored, particularly when leaving the active area. To encourage regular use, a monitoring instrument should be placed near the exit from the laboratory.

1.2.5.3 Staff working in active areas must ensure that their hands are regularly monitored after work and before eating, drinking, smoking, or the application of cosmetics. An instrument for monitoring the hands should be available where the hands are washed. This monitoring should extend to other skin areas, e.g. the face, if there is any reason to suspect that these areas may have become contaminated. Care must be exercised in the measurement of low levels of skin contamination since, with some instruments, the contamination can only be satisfactorily measured if the levels of background radiation are commensurately low.

1.2.6 A wide variety of detector probes in association with battery or mains-operated ratemeters is available for contamination monitoring; the types most suitable for any particular application will depend upon local circumstances.

1.2.7 Contamination monitoring for tritium is particularly difficult because of the very low energy of the emitted beta-particles. The radiotoxicity of tritium, however, is very low and good laboratory practice will usually reduce the need for monitoring to occasional measurements where activities of the order of up to a few tens of millicuries are routinely manipulated. Urine analysis is the most reliable guide in contamination control of tritium. Systematic urine analysis should be undertaken if regular and significant exposure to tritium is unavoidable.

1.2.8 Under normal working conditions with diagnostic or therapeutic activities of unsealed radioactive substances air monitoring is not necessary. In the event of an emergency involving a serious spill those concerned with the cleaning up procedures should if necessary were well-fitting respirators or breathing apparatus appropriate to the radioactivity being handled and approved by the Radiological Safety Committee, so that even under these conditions air monitoring can be avoided.

1.3. Decontamination procedures

1.3.1 Persons working with radioactive substances should wash their hands thoroughly with mild soap and water before leaving working areas and especially before eating, drinking, smoking, or the application of cosmetics. Particular attention should be paid to cleaning the fingernails. After washing, the hands should be checked with a radiation monitoring instrument.

1.3.2 If washing the contaminated skin with soap and water fails to reduce the contamination to the required level, an appropriate detergent should be tried. If this fails, treatment with a saturated solution of potassium permanganate followed by decolourization with 5 per cent sodium bisulphite may be used (potassium permanganate should not be applied to contaminated hair as there is a risk of causing temporary change of hair colour). Chemical treatment should not be applied too vigorously as the skin may become porous. Even when the contamination has not been reduced to the required level, none of these procedures should be carried on to the stage of injuring the skin.

1.3.3 When high level contamination of parts of the body, other than the hands, is suspected or when the procedures described above are ineffective, the Radiological Safety Officer of the relevant department and the Head of the Department should be notified at once. Special care needs to be taken in the decontamination of areas near the eyes and in preventing spread of contamination to other parts of the body (e.g. showerbaths should only be taken after the major areas of contamination have been cleansed.)

1.3.4 If the skin is broken or a wound is sustained in conditions where there is a risk of radioactive contamination, the injury should be irrigated immediately with tap water. As soon as the first aid measures have been taken, the person should report to the Supervisory Medical Officer for further treatment including decontamination if necessary. In such cases, details of the incident must be recorded on the radiation dose record.

1.3.5 Paintwork should be cleaned with detergent and water or, in severe cases of long-lived contamination, removed with a paint remover. Polished linoleum and epoxyresin floor coverings should be cleaned with detergent and water. Linoleum should preferably be sealed with a varnish, e.g. polyurethene, and water emulsion polish used to maintain it. For short-lived radionuclides, if activity still remains, the surface should be suitably covered until the radioactivity has decayed to a sufficiently low level; sisalcraft paper is very suitable for this purpose. In the case of high levels of contamination with long-lived radionuclides, it may be necessary to remove and replace the floor surface.

1.3.6 Glassware should preferably be cleaned with an alkaline detergent immediately after use. If the contamination has been allowed to dry, the glassware should be marked and segregated for special attention when cleaning. Glassware and porcelain can usually be cleaned by any of the normal chemical agents, of which chromicsulphuric acid solution (which should be handled with care) is probably the most effective. Other cleaning agents are ammonium citrate and other chelating agents (such as EDTA), of various proprietary solutions. The solutions used for cleaning must not be returned to the stock bottle.

1.3.7 Dilute nitric acid can be used to clean plastic, since it will usually be effective without damaging the material. Care should be taken to avoid the use of ketonic solvents and certain chlorinated hydrocarbons.

1.3.8 All metal tools, trays, sinks, and equipment should be monitored to detect possible contamination. They may be cleaned by washing with a havy-duty detergent of the type used for laundering, followed if necessary by inhibited phosphoric acid, or by dilute sulphuric acid, or by mixtures of citrates with EDTA or ammonium oxalate. For stainless steel, hydrochloric acid must be avoided as it is likely to corrode the equipment. When other procedures fail with stainless steel, a mixture of 6 per cent nitric acid with 1 per cent sodium fluoride may be used. In all cases, the cleaning agent should be used only for a minimum time, otherwise corrosion of the equipment is likely to occur thus causing greater difficulty in future decontamination. Stubborn contamination may often be removed by the use of a slightly abrasive polish but only at the expense of some damage to the surface.

1.3.9 Decontamination procedures may not reduce the activity of equipment and glassware to acceptable levels. In this case, if long-lived radionuclides are concerned, the items must be regarded as radioactive waste. For short-lived radionuclides, it may be feasible to store certain articles until the radio-activity decays sufficiently. However, in either event, care must be taken to ensure that the proposed action does not contravene the regulations for the storage or disposal of radioactive substances.

1.3.10 Contaminated clothing or bedding must not be sent to public laundries.

1.3.11 Articles contaminated with long-lived radionuclides should be stored in impermeable bags until the level has fallen to an acceptable value.

1.4 Control and waste disposal of radioactive substances.

1.4.1 Radioactive waste should be kept separate from normal waste in an appropriate shielded container. Solid waste can be disposed in a bin lining with plastic bag in order to minimize the problems from storage and contamination. Liquid waste in bottles should be stored in containers stated the radioactive nuclide, its activity, half-life, and date of collection.

1.4.2 The place of rodioactive waste storage must be provided with a warning of radioactive symbol. Unauthorized persons must not enter this area.

1.4.3 The Waste disposal to the sewerage system should be in the liquid stage and must not precipitate or vaporize when diluted.

1.4.4 The gaseous waste should be filtered before discharge into the atmosphere. The materials used in filtration must be treated as radioactive waste.

1.4.5. Radioactive waste product must be buried at least 1 meter depth from the ground.

1.4.6 Solid waste in a large quantity can be incinerated in a suitable incinerator site.

1.5 Emergency procedures

1.5.1 Experience has shown that most incidents involving spills of radioactive substances in hospitals do not warrant any drastic emergency action but require only simple remedial action by local staff, often as part of their routine procedures for the control of the spread of contamination. Nevertheless, a more serious incident could possible occur and some preparation to anticipate the event is necessary.

1.5.2 In any incident, the first concern must be the protection of any persons involved (whether patients or staff) and the treatment of any serious injury. The second concern is to confine the contamination as far as possible to the area originally affected. Decontamination of personnel must also take priority over any plan for decontamination of working areas, although immediate arrangements must be made to restrict the spread of contamination.

1.5.3 Local rules must be drawn up to specify :

1.5.3.1 The persons to be notified of any emergency incident.

1.5.3.2 The instructions to staff on any immediate action to be taken

1.5.3.3 The location of equipment for dealing with incidents.

The rules must be read and understood by all persons who may be concerned. They should be reviewed periodically and revised as necessary.

1.5.4 Notices must be posted in or near every active area showing :

1.5.4.1 The system for warning persons in the vicinity.

1.5.4.2 The system for contacting the Radiological Safety Officer of the department, to whom the emergency must be notified immediately.

1.5.4.3 The location and method of use of emergency equipment for dealing with the incident.

1.6 Responsibility for radioactive protection

1.6.1 The head of radioisotope department must organize the working system correctly for the staffs according to this manual by setting up the radiological Protection Committee in the department or request the aids from the division of radiation protection, Departments of Medical Science.

1.6.2 Permissible dose for staffs must be limited as low as possible

1.6.3 The persons whose occupation are dealing with radioisotope must protect themselves and others from hazardous in using radio isotops substances.

1.6.4.Radiologists should have personal does meters e.g. film-batchs or pocket ionization chambers etc. for record the exposed dose.

資料 4

SCIENTIFIC EQUIPMENT CENTER

1. CENTRAL SCIENTIFIC EQUIPMENT LABORATORY

To utilize the scientific equipments in the central laboratory effectively by giving

1.1 General management

1.2 Technical support and practical assistance

1.3 Quality assurance and control

1.4 Routine maintenance and repair.

2. COMPUTER APPLICATION SERVICE

To help the planner, manager and researcher in health science research and service to be able to use the computering technique and computer effectively by giving

2.1 General management in hardware and peopleware

2.2 Technical support and practical assistance

2.3 Development of application program

2.4 Local Area Network management

2.5 Data base and Information management

2.6 Research and development in computerizing the analizing process and the operating of instrument.

3. INSTRUMENTATION SERVICE

To give general services in instrumentation by means of

3.1 Technical support in the procurement

3.2 Inspection, installation and training program for operation

3.3 Routine maintenace and quality assurance/control program

3.4 Repair and modification

3.5 Research and development of simple but necessary analysis or research instrument.

4. RESEARCH FACILITIES MAINTENACE

Monitor, maintenance and repair of

4.1 Electric supply system

4.2 Telephone network

4.3 Water supply system

4.4 Cooling system

4.5 Elevator

4.6 Plumbing

4.7 Gases supply system

4.8 Vacuum system.

SCIENTIFIC EQUIPMENT CENTER

STAFF:

	PRESENT	TO BE RECRUITED
Research Facilities ~~PUBLIC UTILITY~~ MAINTENACE	6 #	6
CENTRAL, Scientific EQUIPMENT LABORATORY	1 *	3
COMPUTER APPLICATION Service	3 @	4
INSTRUMENTATION SERVICE	3 +	4
TOTAL	13	17

REMARK:

Non-experient temporary staff to be drawn from some divisions.

* 8 members of ad hoc working group are now in acting.

@ Including one that to be tranferred from division of Radiation Protection Service.

+ Including the chief of Scientific Instrument Center.

RADIOISOTOPE LABORATORY

EXPANSION PROJECT

DEPARTMENT OF MEDICAL SCIENCES
MINISTRY OF PUBLIC HEALTH
BANGKOK , THAILAND.

RADIOISOTOPE LABORATORY EXPANSION PROJECT

DEPARTMENT OF MEDICAL SCIENCES
MINISTRY OF PUBLIC HEALTH
BANGKOK , THAILAND.

BACKGROUND INFORMATION

The department of Medical Sciences, an only national service laboratory, has responsibilities in the health science services with the main objectives to serve as the national testing laboratories for food, drugs, toxicology, radiation instruments; to assist medical and health officers in diagnosis in central and regional areas and to promote research on virus, medicinal plants and medical entomology.

Recently, the Ministry of Public Health has laid out the policy to promote and improve the facilities available for the public health care in order to bring the better quality of life to the people. In order to fullfill this aspect, the department of Medical Sciences has decided to promote the facilities in Health Science Services by building up a new research centre known as the National Institute of Health. This institute will be fully function in October 1986 and will be one of the biggest health science research laboratories in Thailand in which the radioisotope laboratory facilities have also been included with the prime objective in solving the urgent problems in medical health sciences.

In this NIH plan, the radioisotope technique has been versatilly exploited in all the public health care purposes in order to assist the medical health officers for diagnosis in both central and rural areas. This project will be arranged as a net work scheme in the department of Medical Sciences Regional Laboratories ie: Chiang Mai, Phitsanulok, Khon Kaen, Nakhon Ratchsima, Songkhla and Chon Buri. These regional laboratories will function properly as the central communication with other provincial health services such as provincial hospitals and municipal health centers of the Ministry of Interior etc. In addition, they will act as the quality control laboratories by analysing the samples collected from the provincial areas and also perform the duty of setting up the laboratories for the provincial hospitals. The NIH radioisotope laboratory will act as the centre laboratory of the net work and will provide all the information and technology required from all the collaborative laboratories as well as the training centre in radioisotope technique.

Besides the collaborative laboratories project, the NIH radioisotope laboratory also plans to produce all the reagents used in the radioisotope technique such as RIA Kit production in order to produce more effective system in supplying the reagents to all the clinical laboratories in the country. Since one of the main problems for the clinical laboratory services is the difficulties in obtaining a standard quality of reagent on time as well as its high cost. Usually all the reagents must be imported from abroad resulted in variation of the quality during transportation. Realising of all the problems that must be urgently solved , the department of Medical Sciences has tried the best effort to fullfill all the facilities necessary for the radioisotope expansion project as much as possible and expects to start the expansion activities effectively in October 1986.

OVERALL OBJECTIVES

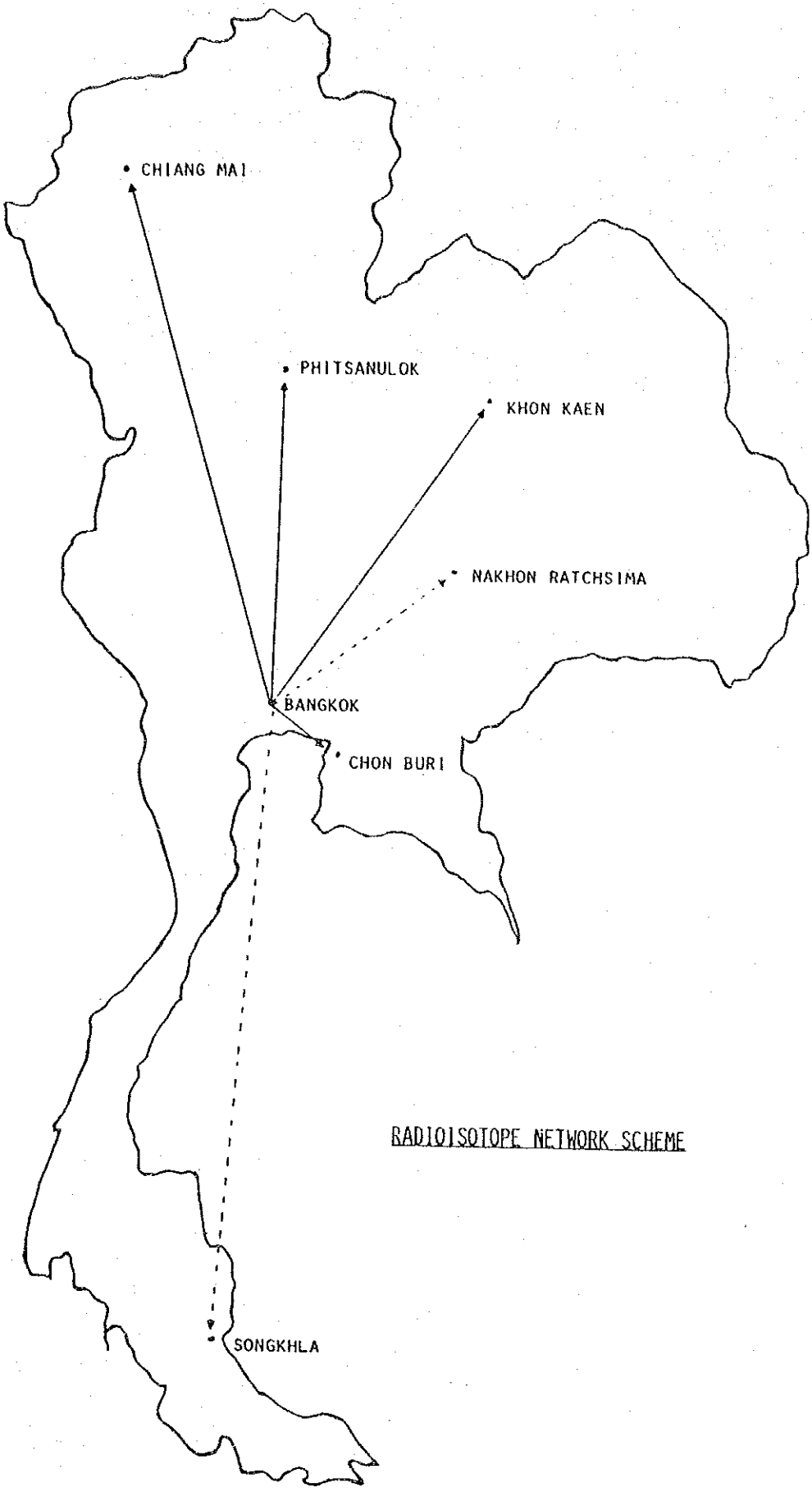
1. To promote and solve the problems of the Medical Health Services in both central and rural areas of the country.

2. To develop a rapid, sensitive, specific and inexpensive test kits supplied to laboratories and hospitals throughout the country.

3. To establish the Quality Control Aspects for the radioimmunoassay laboratories in the country.

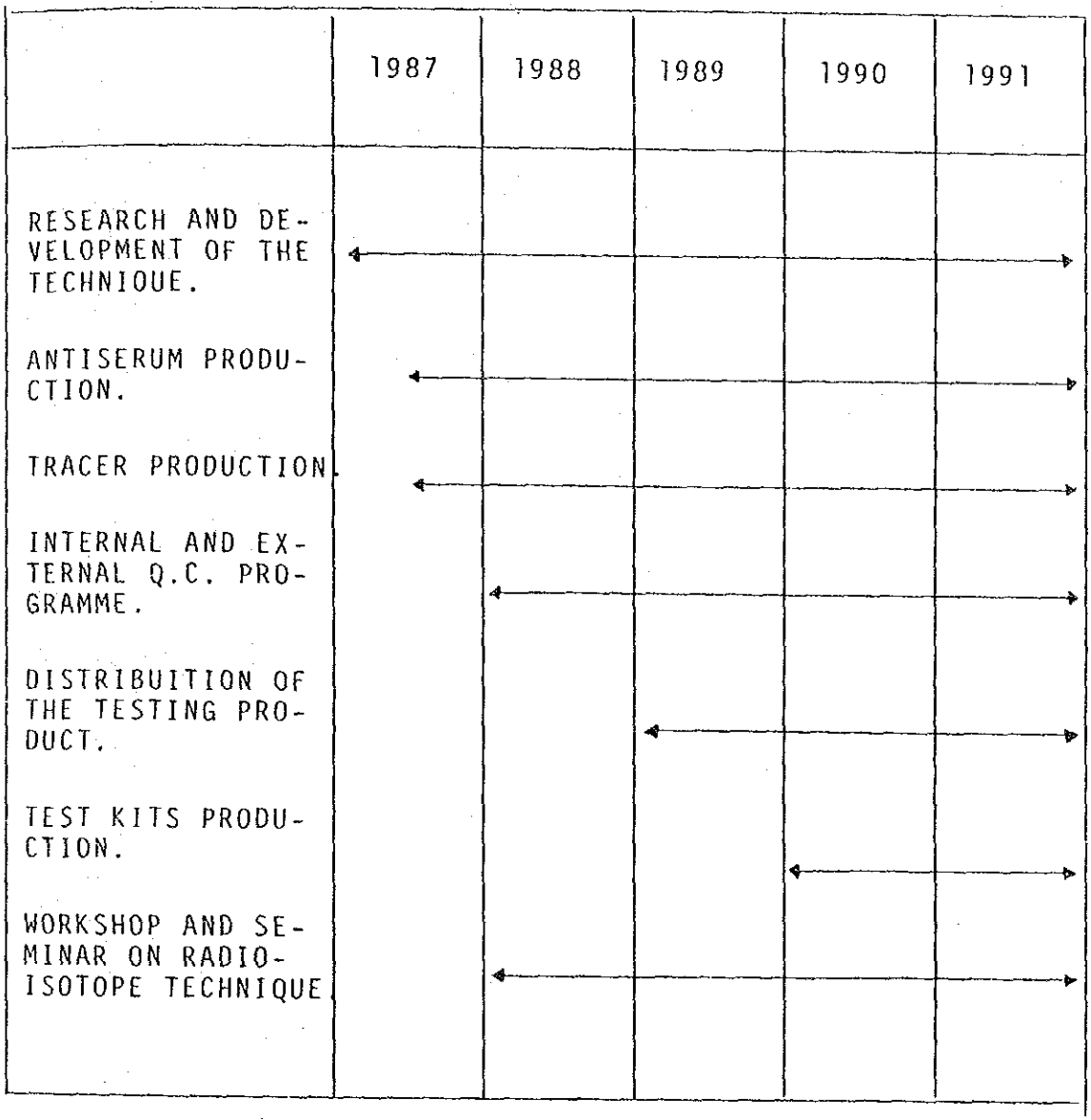
4. To transfer the appropriate technology as well as organise the training course in order to improve the laboratory performance effectively in both central and provincial areas.

5. To develop a more reliable and effective system of the Public Health Services in monitoring laboratories results in diagnosis and treatments throughout the country.

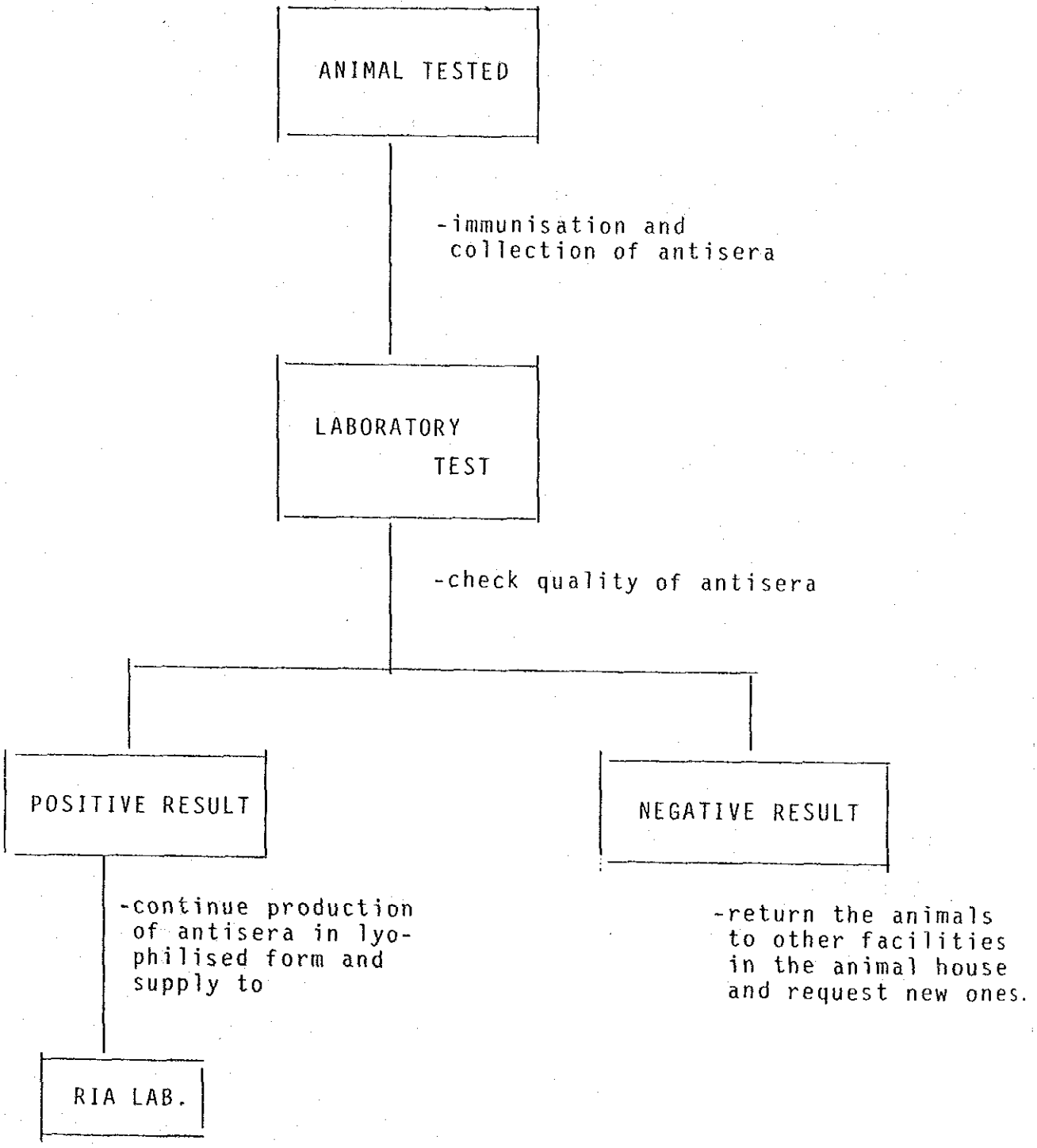


RADIOISOTOPE NETWORK SCHEME

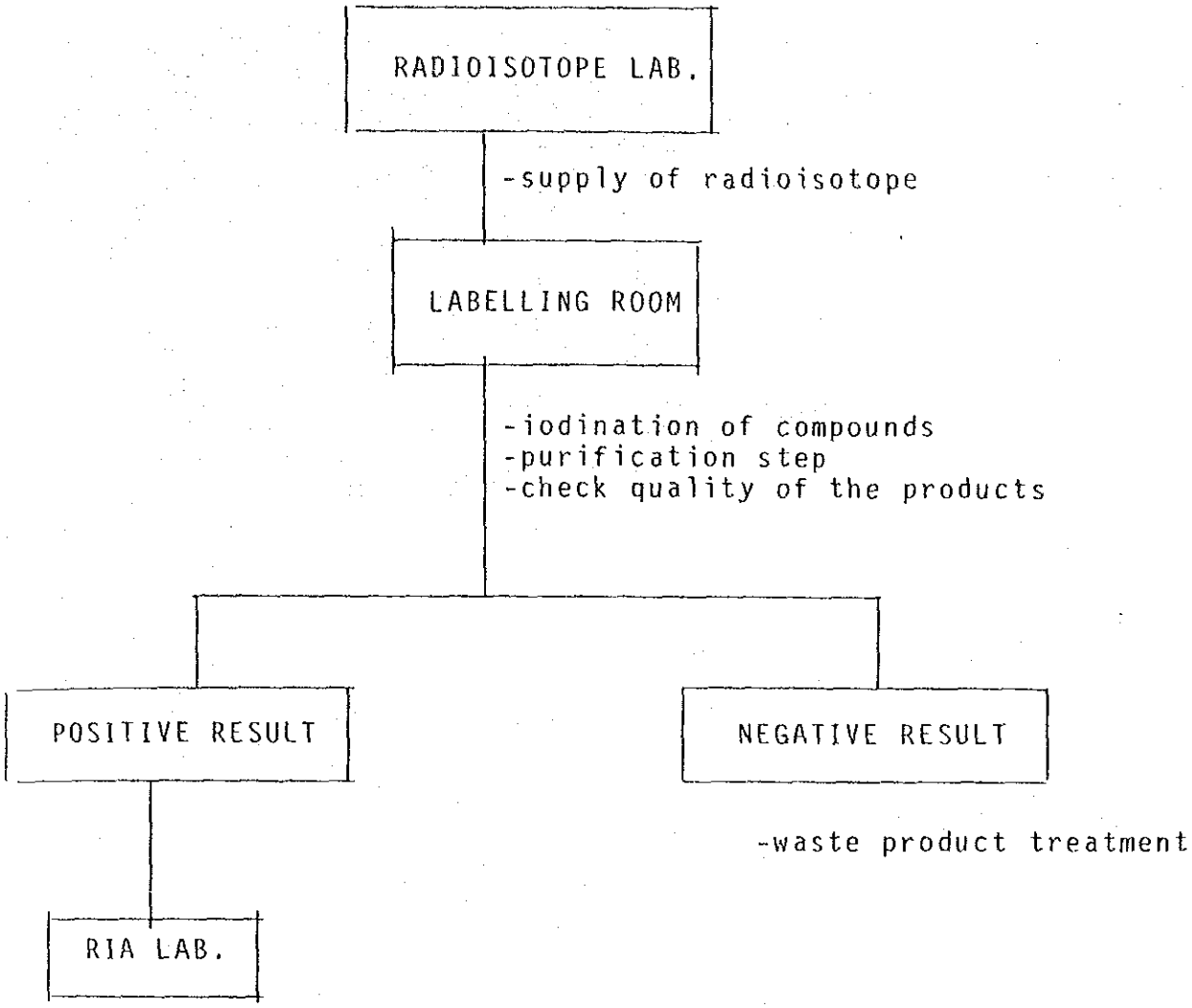
DETAILED WORK PLAN



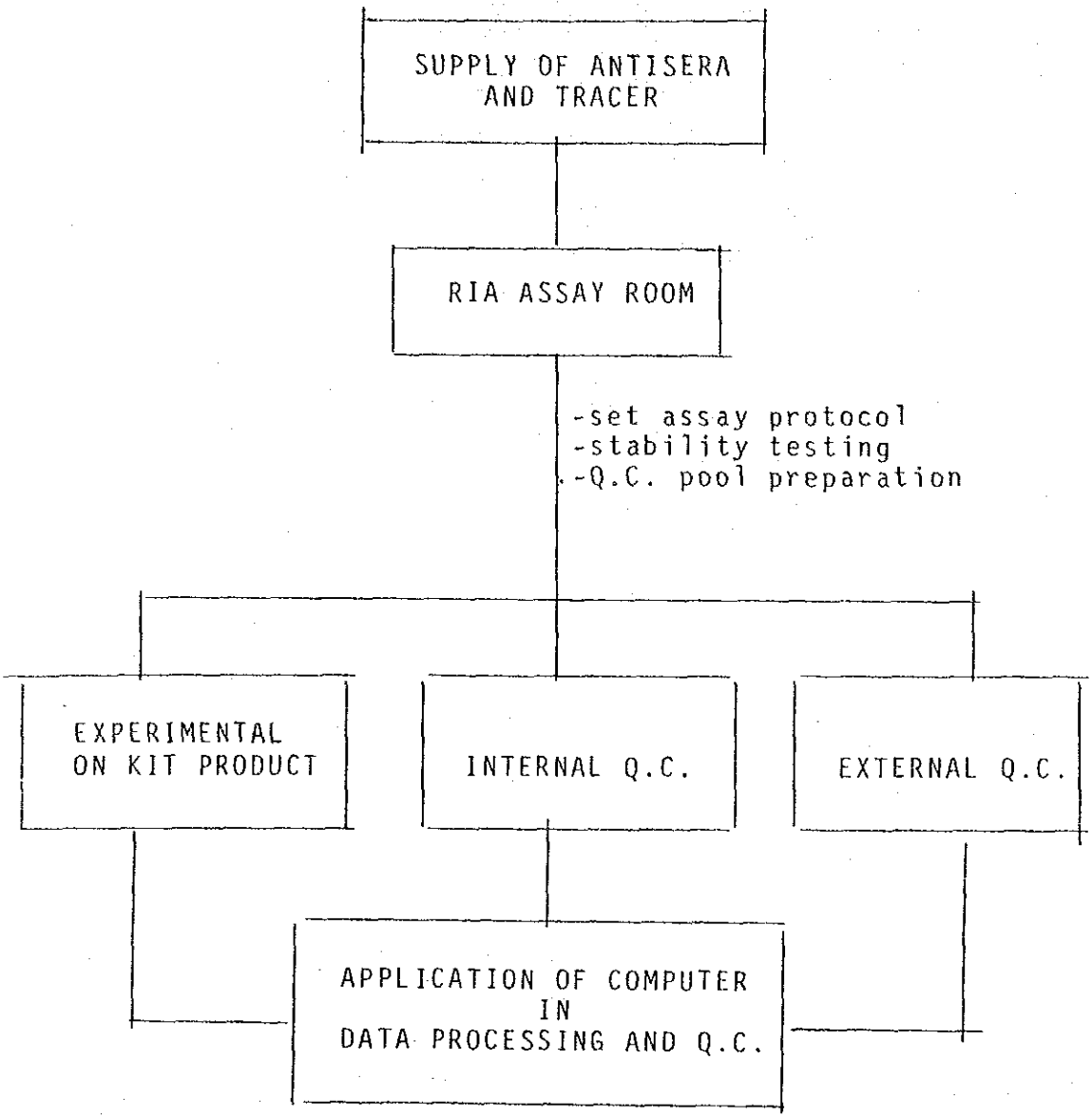
ANTISERUM PRODUCTION



TRACER PRODUCTION



ROUTINE ANALYSIS FOR RIA TECHNIQUE



FACILITY AVAILABLE FOR THE RADIOISOTOPE EXPANSION PROJECT

The facilities available for the radioisotope expansion project can be classified into three main groups ie :

1. Radioisotope Laboratory site.

2. Equipments used for the radioisotope experiments only.

3. Common facilities that can be used provided that no radioisotope contamination is produced in the process.

1. RADIOISOTOPE LABORATORY SITE

A well isolated radioisotope laboratory with approximate area of 300 sq.m. is now under construction and will be finished and fully function from October 1986. The details for the construction site can be seen in the Appendex1.

2. EQUIPMENTS USED FOR THE RADIOISOTOPE EXPERIMENTS ONLY

- Contamination prevention and radioisotope monitoring system.
- LKB Gamma Counter.
- LKB Beta Counter.
- Refrigerated Centrifuge.
- Lyophilliser.
- Fraction Collector with U.V. monitoring system.
- Deep Freezer.
- Radiation fume hoods and shielding.
- Incubators.
- Ultrasonic cleaners.
- Low temperature experimental laboratory.

3. COMMON FACILITIES

- A well isolated animal house area for antisera production. (Appendex 2)

- Common facilities in Central scientific equipment center eg. HPLC, G.C., U.V., I.R., NMR.,etc.

- Computer facilities.

ESTABLISHMENT OF RADIOPHARMACEUTICAL LABORATORY AT NIH

BACKGROUND INFORMATION

Radiopharmaceutical products have been widely used in hospitals all over the country. Unfortunately, the quality of these products have never been controlled properly since the establishment of quality assessment requires complicated facilities as well as experience scientists.

Realizing of the safety of these products consumed by the public, the Department of Medical Sciences has expanded the radioisotope laboratory which includes a radiopharmaceutical section and expected to be function in October 1986. This radiopharmaceutical section will act as the quality control laboratory of radiopharmaceuticals consumed by the public and will routinely check the products prepared in hospitals as well as private sectors in order to ensure the safety of the public.

This project does not only ensure the quality of radiopharmaceuticals but also encourages the awareness of the hospital staffs in preparation process as well as handling of the products.

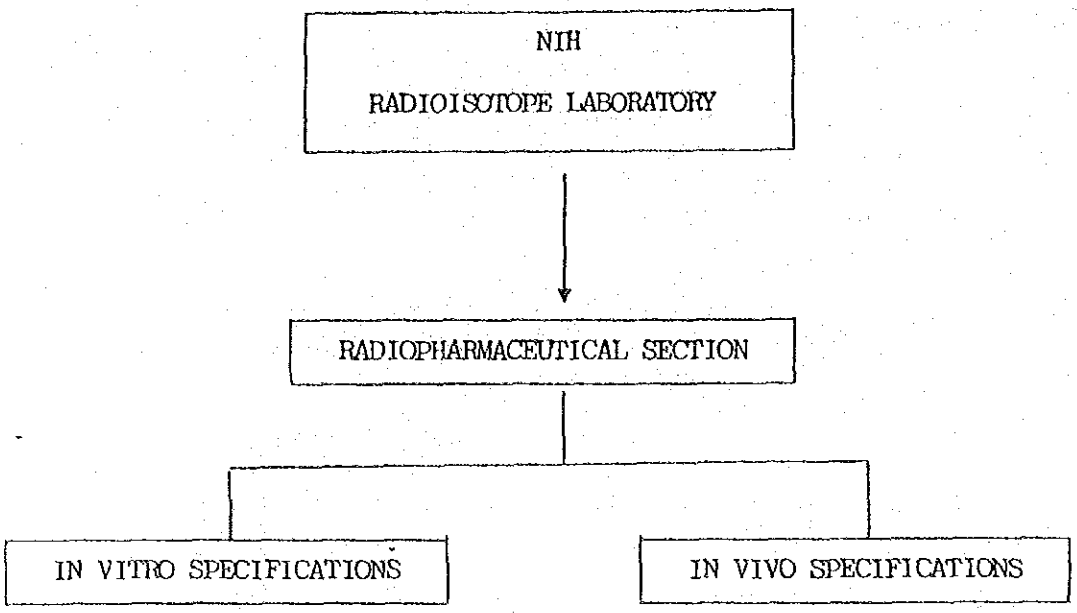
OBJECTIVES

1. To establish the radiopharmaceutical section in the Department of Medical Sciences.

2. To control the quality of radiopharmaceuticals used in public health services.

3. To encourage the awareness in handling and preparation of radiopharmaceutical products in routine work.

DETAILED WORK PLAN



- RADIOCHEMICAL PURITY
- RADIONUCLIDIC PURITY
- DOSE ASSAY
- PHYSICO-CHEMICAL SPECIFICATION

ETC.

- PYROGEN TEST
- STERILITY TEST

ETC.

	1986	1987	1988	1989	1990
1. ESTABLISHMENT OF RADIO-PHARMACEUTICAL SECTION	←———	——→			
2. ROUTINE QUALITY CONTROL PROCESS			←———	———	——→
3. DEVELOPMENT AND PREPARATION OF RADIOPHARMACEUTICAL PRODUCTS		←———	———	———	——→
4. TRAINING COURSE FOR PREPARATION AND Q.C. PROCESS				←———	——→

ASSISTANCE REQUESTED FROM INTERNATIONAL ORGANIZATIONS TO FULLFILL THE EXPANSION PROJECT EFFECTIVELY

The following are the list of technical assistance which should be requested through international organizations in order to establish the standard radioisotope laboratory in Medical Health Sciences research effectively according to the schedule planed in the project:

1. In term of EXPERTS

1.1 EXPERT IN LABELLING TECHNIQUE

1.2 EXPERT IN ANTISERA PRODUCTION

1.3 EXPERT IN RADIOPHARMACEUTICAL ESTABLISHMENT

2. In term of FELLOWSHIPS

2.1 12 months training grant in labelling technique

2.2 12 months training grant in antisera production

2.3 12 months training grant in quality control of radiopharmaceuticals

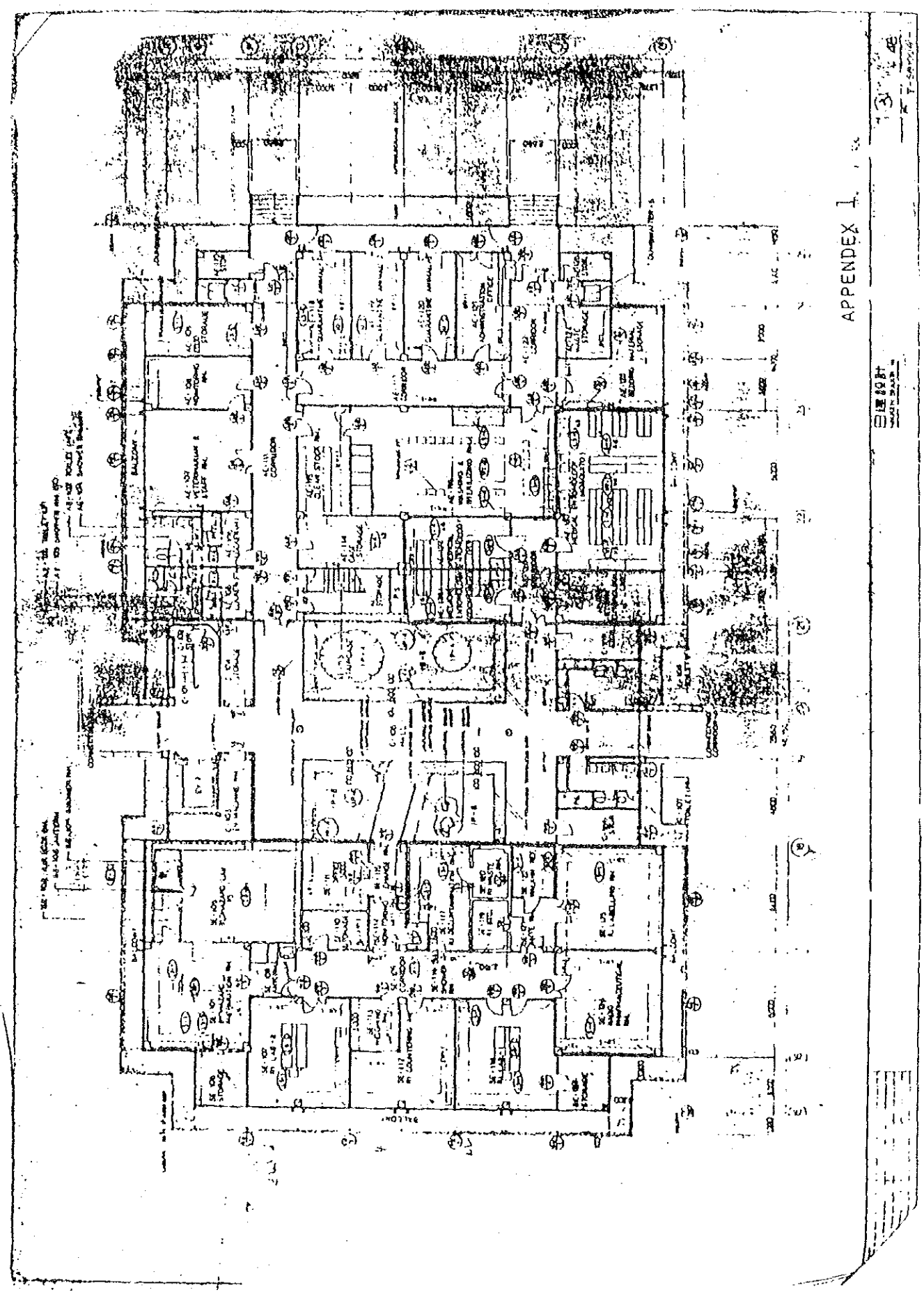
2.4 6 months training grant in KIT PRODUCTION PROCESS

3. In term of EQUIPMENTS

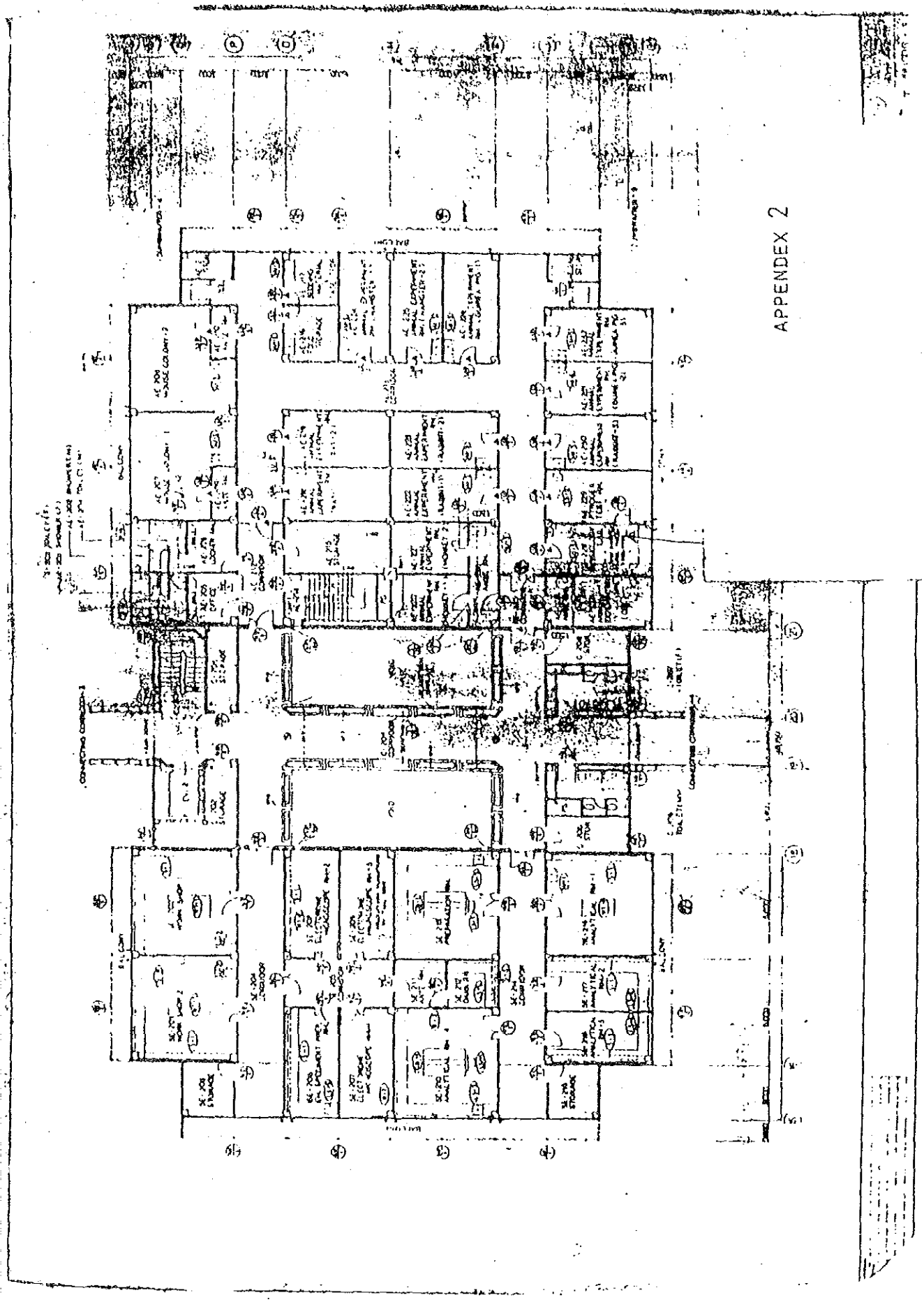
3.1 DOSE-CALIBRATOR

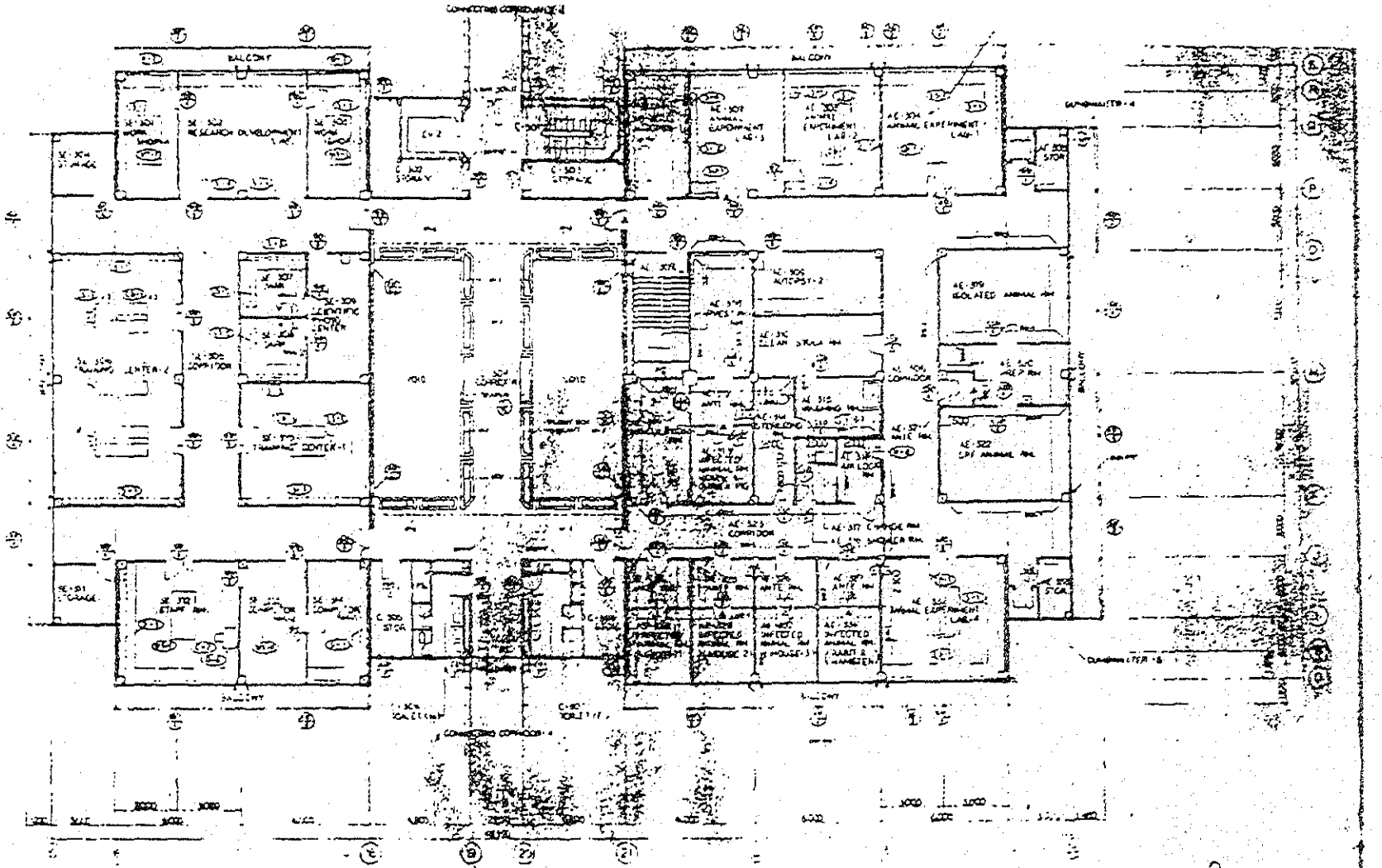
3.2 MULTICHANNEL ANALYSER

3.3 CHROMATOGRAM SCANNER


APPENDEX 1

APPENDEX 2





APPENDEX 2

2－2　山中　隆　団員

1. 予　算

DMS	全体	87,138,200 ฿	FY87
NIH	要求	22,167,000	(1986年10月～1987年9月)
NIH	獲得	18,000,000	

18,000,000＋5,600,000 (+α) ＝ 23,600,000 ฿　(約1億5,350万円)

うち Microbial Disease Research 用として 15,781,400 ฿　(約1億260万円)

内　訳　฿

Supply 1,872,800	Equipment 637,000	Electricity, Tel.
Service 605,000	Salary 8,182,000	2,248,000
Remuneration 127,100	Worker 2,109,500	

これには Food, Drug, Environment, Medicinal Plant の研究予算含まず。

2. 人　員

リスト別添

Immunology に係る組織方針　(Dr. Boonluan 談)

Chief Mr. Wattana　('86, 6下旬～1年間米国留学中)

Acting Chief　Dr. Boondee

Staff　Dr. Yoawapa

3. メンテ　(別添参照)

Scientific Equipment Center は次の4つの業務を行なう。

1. CENTRAL SCIENTIFIC EQUIPMENT LABORATORY
2. COMPUTER APPLICATION SERVICE
3. INSTRUMENTATION SERVICE
4. RESEARCH FACILITIES MAINTENANCE

1と4は過去全く経験がない。2は小規模なものは経験あるが，今回のような大規模なものの経験はない。

4について DMS は次のように約束している。

「At the beginning temporary staffs selected from some divisions in DMS will be employed for the maintenance of main building, labo and all utilities.

From October, 1987, 12 permanent technicians will be recruited from outside within 5 year plan.」

SIC Director Somkiat によると，当初各Divisionより6名のテクニシャンを選任し，Public Utility[4] 要員として使う。将来新たに6名をリクルートし計12名で，このP.U.のメンテに当たる。

最初の6名に使える目途立たない場合は，新規採用は12名とする。

Somkiat にとって過重な業務である。彼の他に適当な人材も機関もないため止むを得ない。彼はメンテの重要性をよく認識しているので，努力すると思うが，肝心なのは予算と人材である。このため彼は日本チームに対し，NIH所長にメンテの重要性を強調するよう要望していた。国内委員，専門家等日本側として，事有るごとにこの点所長に対し進言することが必要である。

建物の壁とか床等の構造物そのもの，清掃はNIHのアドミが担当する。

日建設計の施工監理担当者は12月一杯迄。清水建設，しんりょうも少なくとも12月一杯滞在する。その後も供与機材の据付けがあるため'87，3月位迄何らかのフォローがある模様。

日建は完工，引渡し前に施設の構造，使用上の注意点について説明会を開催の予定。

4. 中堅技術者養成協力事業

日本側が問題とした87年2月実施分の座学については，深井団員よりケーススタディーを内容として盛込むようアドバイスされた。

第1回は4年計画のイントロであり，内容そのものは前々から欠点を指摘されていた点であり，適切なものであろう。Dr.ブンディーを中心としてよく計画されており，タイ側主導で進行されるという理想的傾向と思われる。

7/4 の Coordniating Committee にてR/D 署名。

JICA医協部としては，タイ側にメンテへの取組みを任せざるを得ない。

タイ側の自立，医療協力の範囲を勘案して，将来日本側で協力することもあろう。その場合は施設建設に携った企業，清水，しんりょうが適当である。

5. 協力方針

これ迄の協力内容を見ると，協力範囲が広がり過ぎていると思われる。特に研修員は3名枠を覚悟しなければならない現在協力の焦点を絞り，その分野を優先する必要がある。

このままでは4年後のプロジェクト終了時に，協力の成果が見出せない恐れがある。タイ側は各部のバランスをとって諸要求をして来るのである程度，それへのおつき合いは必要だが，常に焦点を見失わないよう注意すべきである。感染症協力への気運の高まりの中で注目を受けているという観点からもそれが必要である。

具体的にはワクチン開発がその焦点として最適と思われる。現在すでに協力中のＪＥ，化血研の協力を得る狂犬病他に協力の焦点を絞り，研修員，専門家を集中してはどうか。

6. 研修員枠

本プロジェクトのような C/P のバイの大きいプロジェクトも他のプロジェクト同様３名枠はおかしいと大使館より指摘があった。感染症協力の気運盛上る中で唯一の目玉である本プロジェクトは成果を上げることが期待されており，そのためにも増枠が必要である。

例外がないのなら仕方ないとも思われるが中国のような例外もあり，考慮願いたい。文部省の留学生制度の利用も一考に値する。

7. 専門家についての要望

英語による講義・実習ができることを強く要望していた。（Dr．ブンディー）

専門家の受入れについてはタイ側も負担するものがかなりある（労力・予算）。

Personnel at NIH

	Central Admin.	Div. of Med. Ent.	Div. of Clinical Patho	Virus Research Inst.	Div. of Med. Research	Research on Drug	Research on Food	Environmental Research
1. Administrative	5	4	3	8	1*	-	-	-
2. Medical Scientist	-	-	16	25	14 + 7*	5	5	5
3. Entomologist	-	15	-	-	-	-	-	-
4. Assistant Medical Technician	-	3	6	-	-	-	-	-
5. Lab. aid	-	3	-	21	-	-	-	-
6. Mechanic	-	1	-	-	-	-	-	-
7. Artist	-	1	-	-	-	-	-	-
8. Lab. Workers	-	25	3	8	2*	-	-	-
9. Workers	-	5	1	11	2*	-	-	-
10. Drivers	-	5	1	4	-	-	-	-
Total	5	62	30	77	26	5	5	5

* Biological Control

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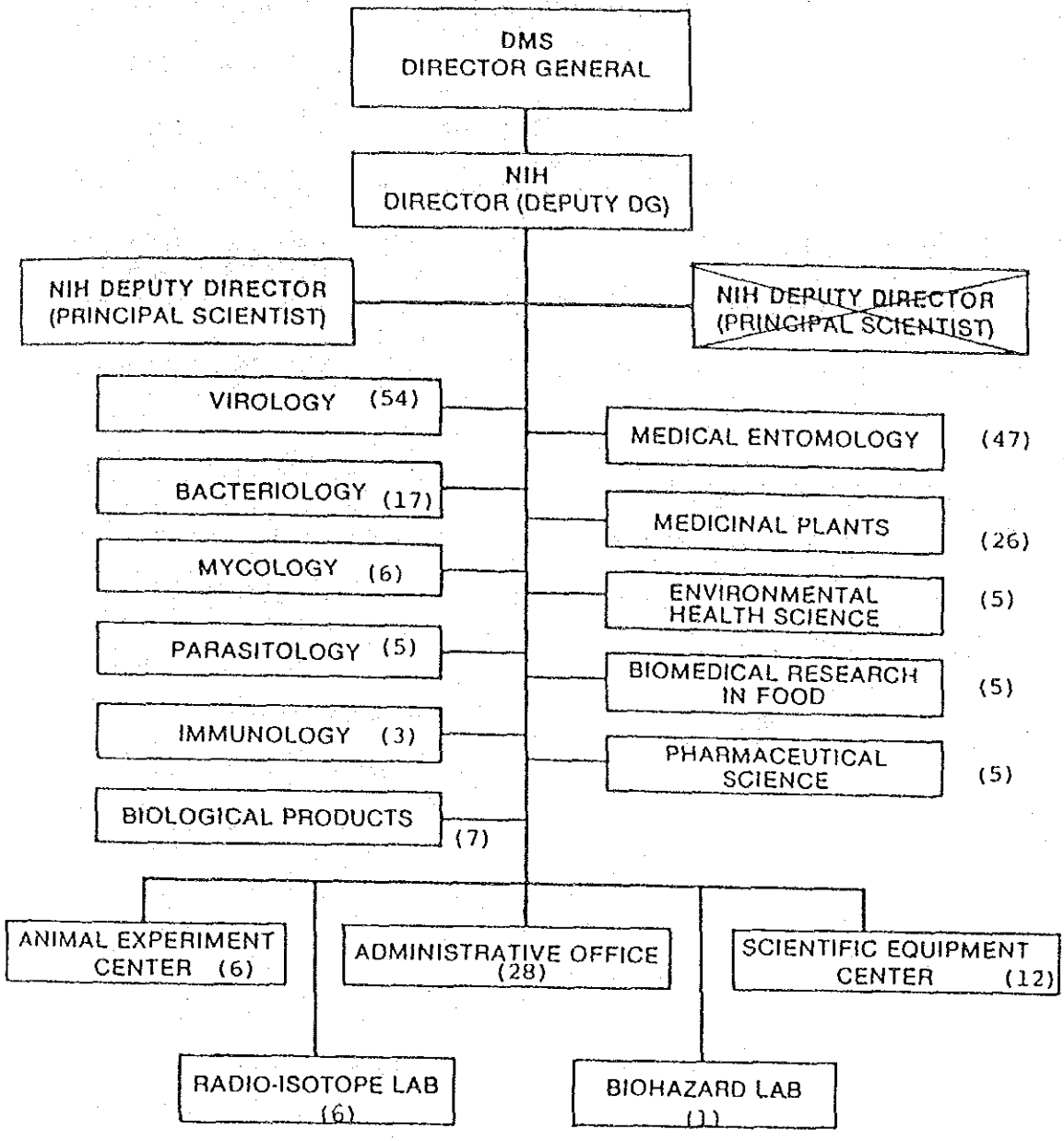
Organization of NIH (as of Nov. 1986)



( ) persons

SCIENTIFIC EQUIPMENT CENTER

1. CENTRAL SCIENTIFIC EQUIPMENT LABORATORY

To utilize the scientific equipments in the central laboratory effectively by giving

1.1 General management

1.2 Technical support and practical assistance

1.3 Quality assurance and control

1.4 Routine maintenance and repair.

2. COMPUTER APPLICATION SERVICE

To help the planner, manager and researcher in health science research and service to be able to use the computering technique and computer effectively by giving

2.1 General management in hardware and peopleware

2.2 Technical support and practical assistance

2.3 Development of application program

2.4 Local Area Network management

2.5 Data base and Information management

2.6 Research and development in computerizing the analizing process and the operating of instrument.

3. INSTRUMENTATION SERVICE

To give general services in instrumentation by means of

3.1 Technical support in the procurement

3.2 Inspection, installation and training program for operation

3.3 Routine maintenace and quality assurance/control program

3.4 Repair and modification

3.5 Research and development of simple but necessary analysis or research instrument.

4. RESEARCH FACILITIES MAINTENACE

Monitor, maintenance and repair of

4.1 Electric supply system

4.2 Telephone network

4.3 Water supply system

4.4 Cooling system

4.5 Elevator

4.6 Plumbing

4.7 Gases supply system

4.8 Vacuum system.

SCIENTIFIC EQUIPMENT CENTER

STAFF:

	PRESENT	TO BE RECRUITED
~~PUBLIC UTILITY~~ Research Facilities MAINTENACE	6 #	6
CENTRAL EQUIPMENT LABORATORY Scientific	1 *	3
COMPUTER APPLICATION Services	3 @	4
INSTRUMENTATION SERVICE	3 +	4
TOTAL	13	17

REMARK:

Non-experient temporary staff to be drawn from some divisions.

* 8 members of ad hoc working group are now in acting.

@ Including one that to be tranferred from division of Radiation Protection Service.

\+ Including the chief of Scientific Instrument Center.

3. 第10回ステアリングコミティー議事録

Report of the Tenth Steering Committee Meeting
1-3 July 1986

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1. Japanese Side

1.1 Committee

1.	Dr. Konosuke Fukai	Team Leader, Emeritus Professor of Osaka University Chairman of Board of Director, Research Fundation of Microbial Diseases of Osaka University
2.	Dr. Koomi Kanai	Deputy Director General National Institute of Health
3.	Mr. Takashi Yamanaka	Staff in charge of NIH Project Medical Cooperation Division Medical Cooperation Department, JICA
4.	Dr. Masamichi Yoshida	Japanese Expert Biological Product
5.	Dr. Saburo Iwasa	Japanese Expert Biostatistical Analysis
6.	Mr. Kohei Nakajima	Japanese Coordinator

1.2 Observer

1.	Mr. Yoichi Furukawa	Nekken Seikie

2. Thai side

2.1 Committee

1.	Dr. Nadhirat Sangkawibha	Honorable Consultant
2.	Dr. Boonluan Phanthumachinda	Deputy-Director General of DMS, Director, National Institute of Health
3.	Miss Panida Kanchanapee	Principal Scientist

4. Dr. M.L. Ratanasuda Phanurai	Director, Division of Clinal Pathology
5. Dr. Chamnong Chimapun	Director, Division of Medical Entomology
6. Mrs. Wantana Ngarmwat	Acting Director, Division of Medical Research
7. Dr. Chuinrudee Jayavasu	for Director Virus Research Institute
8. Miss Amara Vongbudhapitak	Chief, Food, Drug and Environmental Health Research
9. Dr. Somkiat Wangkobkiat	Chief, Scientific Instument Center
10. Mrs. Somsong Noitip	for Chief, Animal Experiment Center
11. Dr. Chongdee Wongpinairat	Division of Drug Analysis, Secretary of the committee
12. Dr. Boondee Atikij	Virus Research Institute Assistant Secretary of the Committee

2.2 Observers

1. Miss Ammueyphorn Puntivajakul	Director, Office of the Secretary
2. Dr. Nongluck Asawachinda	Senior Scientist, Virus Research Institute
3. Dr. Nompop Ahandrik	Senior Scientist, Virus Research Institute
4. Dr. Renu Koysooko	Senior Scientist, Division of Medical Research
5. Miss Krongkaew Supawat	Scientist, Division od Clinal Pathology
6. Mrs. Siripan Wongwanich	Scientist, Division of Clinical Pathology
7. Mrs. Kanchana Leelasiri	Scientist, Division of Medical Research

8. Dr. Boonruam Chockauychai	Scientist, Division of Medical Research
9. Mrs. Amaraluck Chantakunwanich	Division of Medical Entomology
10. Miss Orapin Thammatrakol	Office of the Secretary
11. Miss Kunyarat Kemsup	Office of the Secretary

1. Information from chairman

The chairman introduced the Japanese Planning and Consultation Survey team consisting of Dr. K. Fukai as the team leader, Dr. K. Kanai and Mr. T. Yamanaka. The team was at the DMS to discuss and exchange views regarding the progress and future plan of Technical Cooperation for the NIH.

2. Progress-report of the activities

The Steering Committee has held 9 meetings so far, to review, discuss and evaluate the overall progress of the implementation of the Research Promotion Project. In addition, the future plan of the project has also been formulated. Mr. Nakajima, on behalf of the Steering Committee summarized the overall activities accomplished as appeared in the materials for the first discussion distributed in the meeting.

So far, 6 fellows have gone to Japan for training and 7 Japanese experts were dispatched. Four training courses in Radioimmunoassay, Systematic Bacteriology, Biochemistry of Protein and Bacterial Toxins were successfully held at the DMS. The summary regarding the participants, content and evaluation of these training courses is also presented in the material for the first discussion.

There was concern regarding the effectiveness of technical transfer from the Japanese experts since most of them were short-term experts (except Dr. Yoshida). Therefore, it has been suggested that short-term experts of the same subject should be repeatedly dispatched for the continuity and effectiveness of the technical transfer. Dr. Fukai also added that the Advisory Committee was now seeking for the appropriate Team Leader for this project.

Regarding the equipment and supplies, the total of 2,609,832 Baht was provided for fiscal year (FY) 1985/86. Details on the prices and expected delivery dates are presented in the distributed ducument. It has been suggested that the DMS should request each agent to deliver the equipment on time. Mr. Nakajima finally presented the total budget

provided for FY 1985/1986 and tentative budget for FY 1986/87 and 1987/88 as appeared in the material for the first discussion.

3. Future plan of activities

3.1 Research activities (1987-1989)

The research activities proposed by the Steering Committee have been planned according to the future plan of activities for Technical Cooperation (revised) signed on April, 22, 1985 between Japanese Team Leader (Dr. Murata) and Director General of the DMS (Dr. Nadhirat). The Japanese Team and the committee discussed and exchanged views on research activities as appeared on the attached sheet No.1. Specifically, the following research projects were discussed in details.

I Production of JE vaccine from mouse brain

The research plan for JE vaccine was approved. However, Dr. Fukai has suggested that Thai standard vaccine should be developed as soon as possible. In addition the quantity of the vaccines produced should be more than 50,000 doses annually.

II Production of rabies vaccine from chick embryo fibroblast

It is expected that the Japanese Survey Team will visit the NIH in January, 1987 to investigate the facilities and equipment needed for rabies vaccine production. Following the dispatch of the Survey Team, one fellow will go to Japan for training and return to start the rabies vaccine production at the NIH under the guidance of the Japanese Expert.

III Reference system

The Reference System in Clinical and Public Health Microbiology will be established in the NIH. Improvement and standardization of techniques for isolation, collection, characterization and diagnosis of pathogenic bacteria and fungi will be emphasized. In addition, standard strains, standard serum for various pathogenic bacteria and fungi will be available as reference for other laboratories. Laboratories for Mycoplasma, Rickittsia and Chlamydia will also be established. The technology developed will be transferred to regional medical centers,

thus they will serve as the regional reference laboratories.

3.2 Experts and fellowships

Revised lists of experts and fellowships requested for FY 1986/1987 were presented as appeared in the material for the third discussion. Only Dr. Iwasa, expert in Biostatistical Analysis has been dispatched so far. Regarding the fellowships, fellowship No.6 and No.7 will be postponed to FY 1987/1988.

Tentative list of experts (not in priority order) requested for FY 1987/88 and FY 1988/89 were presented and discussed. Following the discussion, it has been suggested that expert in Biohazard should not be dispatched since expert in the area of virology (rabies vaccine production) can provide information regarding the handling of biohazard agents. In addition, the title of expert No.7 was changed to "Biological studies of rabies virus and rapid method for the determination of rabies neutralizing antibody"

There were 7 fellowships requested for FY 1987/88, two of which were transferred from FY 1986/87. Justification of each fellowship was discussed. It has been suggested that fellowship for the studies of Rickittsia and Chlamydia should be postponed until after the dispatch of the expert and the establishment of the laboratory. The Japanese team also questioned about the need of fellowship on production of hepatitis B reagents. Tentative lists of fellowships requested for FY 1988/89 and FY 1989/90 has also been proposed.

3.3 Equipment

Mr. Nakajima presented the revised list of equipment requested for FY 1986/87 as appeared in the material for the third discussion. Problems regarding the delay delivery of RI laboratory equipment were raised. According to the schedule, the expert in RI technique will be dispatched before the equipment arrives, therefore, appropriate changes of the schedule should be considered.

Regarding the equipment requested for JE vaccine production (material for the second discussion) 3 additional items including freezer (-20°c) deep freezer (-70°c) and nitrogen tank have been added on the list of equipment requested (last page of the material for the third discussion) as item number 29, 30 and 31, respectively.

4. Planning for middle level staff training

The main objective of middle level staff training is to promote the research capabilities of young scientists not only in the NIH but also in regional medical centers and provincial laboratories. The total budget provided by the Government of Japan will be approximately 2 million baht for the first year (1987) and will decrease by 20% annually. For 1986, only one training on Research Methodlogy will be held due to the limited time in this FY. The list of all training courses for middle level staff is presented in the material for the fourth discussion. Training course No.1 to No.9 are primarily for researchers in the NIH, whereas No.10 to No.22 are for those from regional medical centers and provincial laboratories. Justification of each training course has also been presented. Details regarding the objectives, content and schedule of training course on Research Methodology is presented in the same document. It has been suggested that this training course should be held annually (at the lower scale) in order to extend the knowledge to scientists in regional medical centers.

5. Problems at NIH

The committee has discussed on some problems which may occur following the establish of the NIH. The suggestions from Japanese Team and Steering Committee are summarized as follows;

5.1 maintenance, safety and security	There should be training courses on the maintenance of the building. Cooperation among administrative staff, researchers and engineers is encouraged in order to understand safety and security systems of the NIH building.

An efficient team should be organized to set the regulation and to provide information for the utilities of the building.
- Fire security system should be established.
- Expert in maintenance of equipment will be dispatched to provide advice for safety precaution on handling facilities in laboratories.

5.2 Personnel
- Chart of NIH personnel responsible for each activities has been proposed (see attached sheet No.2).
- Personnel responsible for RI and biohazard laboratory should be appointed.

5.3 Budget
- As requested by the Japanese Team, the DMS presented total annual budget which will aid the estimation of the future budget required at the NIH.

Governmental annual budget (1987)

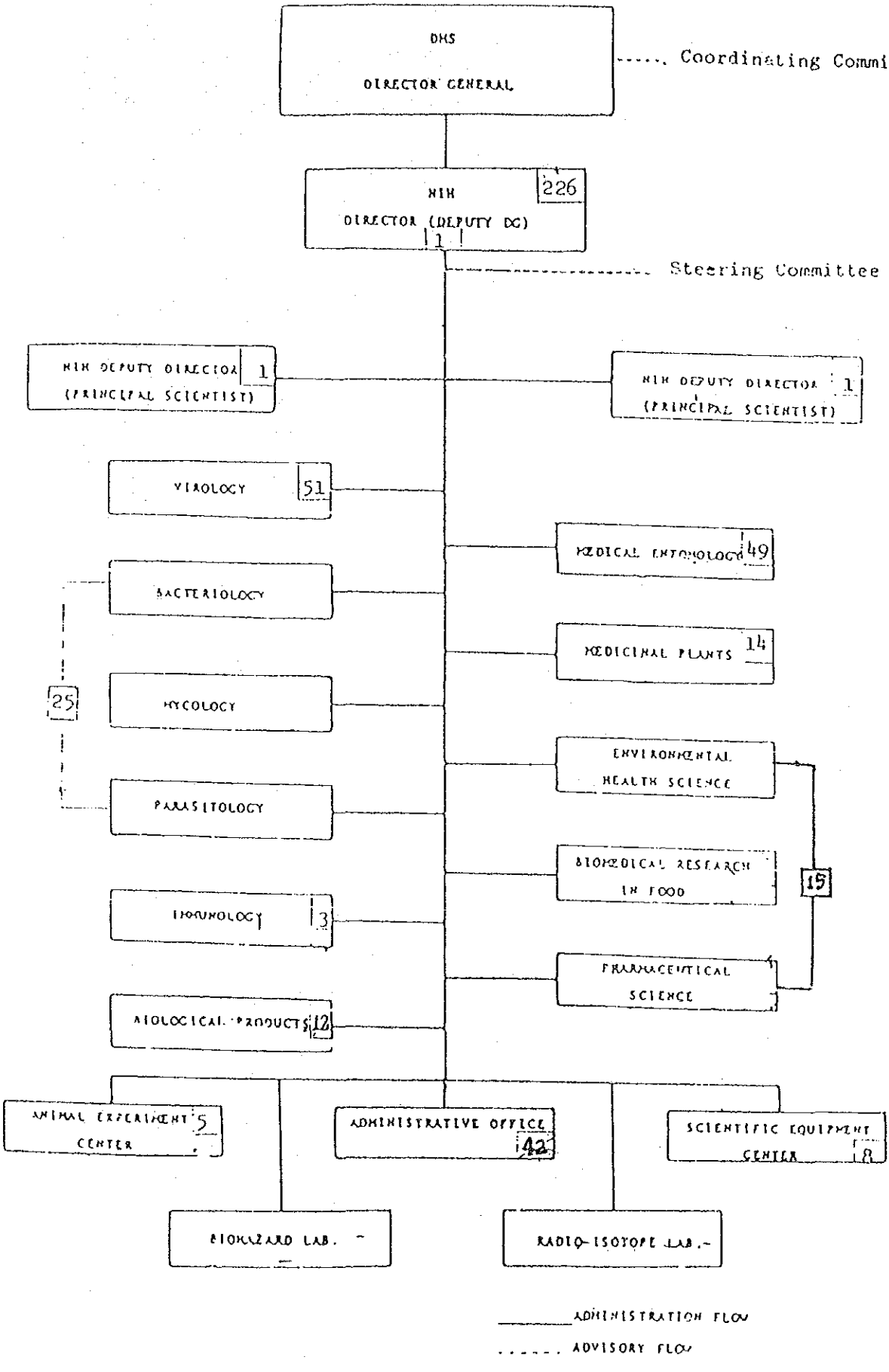
Salary	8,182,000	Baht
Fixed wage	2,109,500	"
Remuneration	127,100	"
Maintenance, Repairs and Transportation	605 000	"
Supply	1,872,800	"
Public Services	2,248,000	"
Equipment	637,000	"
Total	15,781,400	"

Additional support from the International Organization in 1987

WHO	52,959	US $
IMFJ	665	"
Total	53,624	" ≃ 1.4 Million Baht

Organization of NIH

Attached she
No. 2



4. 第２回コーディネーティングコミティー議事録

Report of the Second Meeting of

Coordinating Committee for the Research Promotion Project in NIH

2-1/1986, 4 July 1986

Conference Room, Department of Medical Sciences

Attending Committee:

1.	Mrs. Preeya Kashemsant Represented for Permanent Secretary, Ministry of Public Health and Representative from Ministry of Public Health	Chairman
2.	Dr. Nadhirat Sangkawibha	Honorable consultant
3.	Ms. Penari Assavachin Representative from Department of Technical and Economic Cooperation	Member
4.	Dr. Konosuke Fukai Team leader, Emeritus Professor of Osaka University, Chairman of Board of Director, Research Foundation of Microbial Diseases of Osaka University	Member
5.	Mr. Kohei Nakajima Japanese Coordinator	Member
6.	Mr. M. Goto Director of Japan International Cooperation Agency, Thai Office	Member

7. Dr. Boonluan Phanthumachinda — Member and Secretary
   Deputy Director-General, Department
   of Medical Sciences (Director of NIH)
8. Dr. Renu Koysooko — Member and
   Department of Medical Sciences — Secretary Assistant

Non-attending Committee:

1. Dr. Somsak Varakamin
   Director-General, Department of Medical Sciences.
2. Professor Dr. Praves Vasi
   Representative from Ministry of University Affairs.
3. Experts, Department of Medical Sciences.

Invited Participants:

1. Dr. Koomi Kanai
   Deputy Director General, National Institute of Health, Japan.
2. Mr. Yasunobu Takayama
   First secretary, Embassy of Japan Government
3. Mr. Takashi Yamanaka
   Staff in charge of NIH Project, Medical Cooperation Division,
   Medical Cooperation Department, JICA
4. Mr. Hisaharu Kai
   Representative from JICA
5. Mr. Masamichi Yoshida
   Japanese Expert, Biological Product
6. Dr. Saburo Iwasa
   Japanese Expert, Biostatistical Analysis
7. Ms. Panida Kanchanapee
   Principal Scientist, Department of Medical Sciences.

8. Ms. Amara Vongbudhapitak
   Chief, Food, Drug and Environmental Health Research, NIH
9. Dr. Somkiat Wangkobkiat
   Chief, Scientific Instrument Center, NIH
10. Dr. Chongdee Wongpinairat
    Secretary of the Steering Committee
11. Dr. Boondee Atikij
    Assistant Secretary of the Steering Committee.

1. Information from Chairman:

The Chairman introduced members of Coordinating Committee and invited participants comprising of Japanese Planning and Consultation Survey Team (headed by Dr. K. Fukai), Japanese and Thai authorities whose names appeared on the first page of this report.

2. Adoption of the report of the first Coordinating Committee meeting:

The committee members approved the report of the first meeting without emendation.

3. Reports and discussions on the following subjects:

3.1 Progress report of activities covering experts, fellowships equipment and building (attached sheet No. 2 was distributed in the meeting)

Mr. Nakajima, Japanese Coordinator, summarized the overall progress of the activities achieved since initiation of the NIH project which included provisions for fellowships and equipment, the dispatch of experts and NIH building construction. Briefly, there were 8 experts dispatched and 6 fellows had gone to Japan for training so far. Four training courses in Radioimmunoassay,

Systematic Bacteriology, Biochemistry of Protein, and Bacterial Toxins were successfully held at the Department of medical Sciences. The summary regarding the content and evaluation of these training courses was presented in the distributed sheet.

In regard to the effectiveness of technical transfer from Japanese experts, it has been suggested that short-term experts of the same subject should be successively dispatched for the continuity and success of the technical transfer program.

The progress report on the construction of the NIH building has also been presented. The construction was expected to complete by October this year.

Regarding the equipment and supplies, a total sum of 2,609,832 baht was provided for fiscal year (FY) 1985/86. List of prices and expected delivery dates of the equipment were also presented. Mr Kai raised the problem of delayed delivery and emphasized that the DMS should request each agent to deliver the equipment on time.

Total budget for the NIH project provided for FY 1985/86 as well as the tentative budget for FY 1986/87 and 1987/88 were reported. The budget for publication (1985/86) has been utilized for the publication of the NIH guide book which is due to be ready in July 1986.

Mr. Nakajima finally concluded the report by expressing his satisfaction with the overall progress of the NIH project and appreciation for the cooperation of the Thai personnel concerned.

3.2 Planning of research activities (1987-1989)

The proposed research activities, planned according to the future plan of activities for Technical Cooperation (revised) signed on April 22, 1985 between Japanese Team Leader (Dr. Murata) and Director General of the DMS (Dr. Nadhirat Sangkawibha), were reported as appeared in the distributed sheet No. 3 with details of each activity, in annex 1. The overall plan was approved with the addition of Scientific

Equipment Center, which was further designated as activity No. 15. In addition, the title of Radiopharmaceutical Laboratory activity was changed to Radioisotope Laboratory.

3.3 Experts and Fellowships (Attached sheet No. 2 distributed in the meeting)

List of experts and fellowships requested for FY 1986/87 was reported. Only Dr. Iwasa, an expert in Biostatistical Analysis, has been dispatched so far. Regarding the fellowships, fellowship No. 5 (Research and development of biological control of mosquitoes) and No. 7 (Parasitology in vitro cultivation of parasites and test of efficacy of medicinal plants) will be postponed to FY 1987/88.

Tentative list of experts requested for FY 1987/88 and 1988/89 was approved by the committee.

List of fellowships requested for FY 1987/88 was discussed and approved with some changes including the change of fellowship No. 2 to pertussis vaccine production and detection of immune response, and fellowship No. 4 to gene cloning. The priority of fellowships was also changed.

Tentative list of fellowships for FY 1988/89 and 1989/90 has not been considered in detail.

Lists of experts and fellowships are shown in the attached sheet No. 1 of this report.

3.4 Planning of middle class staff training

The main objective of middle class staff training is to strengthen the research capabilities of young researchers at the NIH, DMS and regional medical centers. The total budget supported by the government of Japan will be approximately 2 million baht for the first year (1987) and will be decreased by 20% annually starting from 1988. For 1986, only one training course in Research Methodology will be held due to time limited. List of all training courses

including budget, and details of training course on Research Methodology (presented in the distributed sheet No. 5) were discussed and approved. However, it has been suggested that there should be cooperation from Japanese side in regard to the provision of the experts for middle class staff training. Dr. Kanai finally added that provision of information regarding the justification and functions of the NIH should be emphasized. Possibly, it could be included in some of the training courses previously mentioned.

4. Others:

The Japanese Team Leader (Dr. Konosuke Fukai) and the representative of the Permanent Secretary of the Ministry of Public Health (Mrs. Preeya Kashemsant) signed the Supplement to the Record of Discussions on the Japanese Technical Cooperation for the Research Promotion Project in the National Institute of Health previously signed on April 18, 1985 in Bangkok. The document signed is attached with this report as sheet No. 2.

Attached sheet 1

EXPERTS

List of experts requested for fiscal year 1986/87 (Revised)

Field	Number	Period
1. Team Leader		4 years
2. Expert in Rabies vaccine (Bringing over, FY 1985)	1	3 months
3. Expert in Biostatistical analysis and Limulus test (Dr. Iwasa)	1	3 months
4. Expert in Mycotoxin (Dr. Ito)	1	3 months
5. Entomologist (Dr. Wada, etc.)	2	3-6 months
6. Immunologist (Dr. Suzuta, etc.)	2	1 month (each)
7. Expert in Radioisotope technique and Biochemistry (Dr. Kato)	1	3-6 months
8. Expert in Animal experiment (Dr. Fukui and Nakagawa)	2	2-4 months (each)
9. Expert in Bacteriology	2	6 months, 3 months
10. Expert in Mycology	1	3 months
11. Expert in Biological products including DPT vaccine etc.	2	3 months

List of experts requested for FY 1987/88 and 88/89

Field	Number	Period
1. Biohazard	1	1 month
2. Bacterial toxin	1	12 months
3. Environmental toxicology and carcinogens	1	3 months
4. Mycoplasma	1	3 months
5. Riokettsia and Chlamydia	1	3 months
6. Production of monoclonal antibody to arboviruses	1	6 months
7. Biological study of rabies virus and rapid method for determination of rabies neutralizing antibody	1	1-3 month
8. Animal experiment	1	1 month
9. Genetic engineering	1	3 month
10. RI	1	3 months
11. Reference System of vector	1	3 months
12. Rabies vaccine production	1	3 months
13. Pertussis vaccine production	1	3 months

FELLOWSHIP

List of fellowships requested for fiscal year 1986/87 (Revised)

Field	Number	Period
1. Animal care (Dr. Tanavat)	1	7 months
2. Bioassay and method development for new biological products (Mrs. Theeranart)	1	12 months
3. Experimental pathology (Ms. Nattewan)	1	12 months
4. Biochemistry of toxic substances (Mrs. Siripan)	1	12 months
5. Immunology in relation to infectious diseases (Mrs. Kruavon)	1	12 months

List of fellowships requested for fiscal year 1987/88 (Revised)

Field	Number	Period
1. Biological control of mosquito	1	12 months
2. Pertussis vaccine production (acellular)	1	12 months
3. Rabies vaccine production	1	12 months
4. Gene cloning	1	12 months
5. New approach of vaccine development	1	3 months
6. Quality control of biological product	1	3 months
7. Rickettsia and Chlamydia	1	12 months

List of fellowships requested for fiscal year 1988/89

Field	Number	Period
1. Immunobiochemistry	1	12 months
2. Pathogenesis of bacterial toxins	1	12 months
3. Pathogenic food-borne microorganism	1	12 months
4. Quality control of radiopharmaceutical products	1	12 months
5. Test on environmental carcinogen	1	12 months
6. Reference museum of vector	1	12 months

List of fellowships requested for fiscal year 1989/90

Field	Number	Period
1. Biotechnology on vaccine production		
- Hepatitis vaccine	1	18 months
2. - JE vaccine	1	18 months
3. Molecular Biology	1	12 months
4. Oncogenic virus	1	12 months
5. Biosynthesis of antibiotics	1	12 months

SUPPLEMENT TO THE RECORD OF DISCUSSIONS
BETWEEN THE JAPANESE IMPLEMENTATION SURVEY TEAM AND THE AUTHORITIES CONCERNED OF THE GOVERNMENT OF THE KINGDOM OF THAILAND ON THE JAPANESE TECHNICAL COOPERATION FOR THE RESEARCH PROMOTION PROJECT IN THE NATIONAL INSTITUTE OF HEALTH

The Japanese Planning and Consultation Survey Team organized by Japan International Cooperation Agency and headed by Dr. Konosuke Fukai, Director-General, Research Foundation of Microbial Diseases of Osaka University had a series of discussions with the Thai authorities concerned in respect of the provisions of special measures to be taken by the Governmnet of Japan for the technical cooperation in the Research Promotion Project in the National Institute of Health.

As a result of the discussions, the both sides agreed to recommend their respective Government to add the Article X as mentioned in the document attached hereto to THE RECORD OF DISCUSSIONS ON THE JAPANESE TECHNICAL COOPERATION FOR THE RESEARCH PROMOTION PROJECT IN THE NATIONAL INSTITUTE OF HEALTH signed on April 18, 1985.

Bangkok, July 4 , 1986

Konosuke Fukai

Dr. Konosuke Fukai
Leader
Japanese Planning and Consultation
Survey Team, JICA, Japan

Preeya Kashemsant

Mrs. Preeya Kashemsant
Deputy Permanent Secretary
For Dr. Amorn Nondasuta
Permanent Secretary
Ministry of Public Health
The Kingdom of Thailand

X. PROVISIONS OF SPECIAL MEASURES

1. In order to further promote the Project, the Goverment of Japan, in accordance with the laws and regulations in force in Japan, will take necessary measures through JICA to finance a part of the following expenditures within the Kingdom of Thailand regarding the implementation of the middle level trainees training programme:

(1) expenditures for producing teaching materials,
(2) costs for the travels of trainees to and from training sites,
(3) costs for the field trips of instructors and trainees, and
(4) fees for special instructors.

2. The amount of the above-mentioned expenditures to be borne by JICA will be reduced gradually in parallel with the self-help efforts by the Thai authorities concerned which should be increased every year during the period of this cooperation Project.

5. 資　料

5－1　Organization of NIH

5－2　List of Personnel at NIH

5－3　第二回コーディネーティングコミティー資料

5－3－1　The report of the first meeting October 8, 1985.

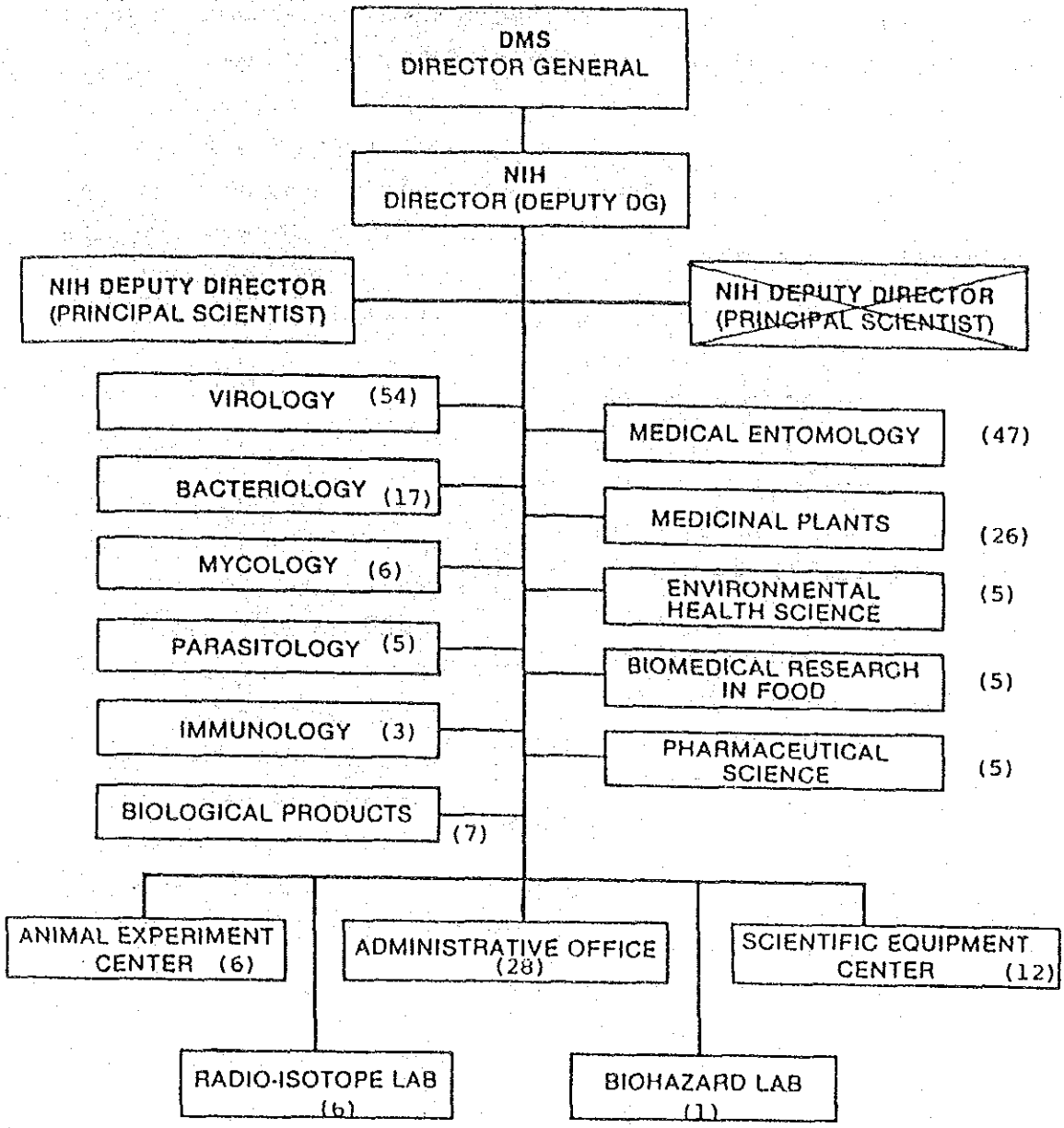
5－3－2　Planning of research activities after 1987.

5－3－3　Planning of middle class staff training

5－3－4　Anticipative problems on administration at NIH

5－3－5　Research Activities

5 — 1 Organization of NIH (as of Nov. 1986)



( ) persons

5－2 List of Personnel at NIH (as of Nov. 1986)

1. Director-General : Dr. Somsak Varakamin
2. Director NIH : Dr. Boonluan Phanthumachinda
3. Deputy Director General (Principal scientist) : Miss Panida Kanchanapee

1. Virology

- Medical scientists

1. Dr. Paiboon Sa-ngobwarchar (Director, VRI)
2. Dr. Nonglak Asavachinda
3. Dr. Chuinrudee Jayavasu
4. Dr. Siri Sawasdikosol
5. Mrs. Suranga Saguanwongse
6. Mrs. Chandana Kun-anake
7. Miss Suntharee Rojanasuphot
8. Mrs. Pranee Thawatsupha
9. Mrs. Boonsong Pojanagaroon
10. Dr. Suwicha Kupradinun
11. Dr. Charnchudhi Chanyasanha
12. Dr. Yoawapa Pongsuwan
13. Dr. Pornthip Samuthananone
14. Dr. Sumalee Boonmar
15. Miss Sirima Pattamadilok
16. Dr. Boondee Atikij
17. Miss Malinee Chittaganpitch
18. Miss Wanpen Boonwanich
19. Miss Sumlee Pothipunya
20. Miss Sanit Panhirun

- Scientist assistants

1. Mrs. Somsong Noitip
2. Mr. Suvit Panpeaug
3. Miss Nipapan Sorraksin
4. Mrs. Malliga Chiwakul
5. Miss Phailin Peanpijit
6. Mr. Chanai Klamklai
7. Mr. Paibool Maneewong
8. Mr. Songtum Prakong
9. Mrs. Supan Klamklai
10. Mr. Napa Patomyotin

11. Miss Aree Veranarongkorn
12. Miss Rungrat Worawattanaon
13. Mr. Suttichoke Jongtrakulsiri
14. Mr. Udom Sitthisena
15. Mr. Pongnarin Chaemchit
16. Mr.Ruangchai Lekate
17. Mr. Sarike Sawatdee
18. Mr. Wanchai Sirisukecharoenphon
19. Mr. Vorachat Tienchaitat
20. Miss Pheingjai Ameencharoen

- Workers

1. Miss Sumonna Suntrondaja
2. Mr. Tienchai Keetacheeva
3. Mr. Jumlong Kuvejinda
4. Mr. Surin Prayoke
5. Mr. Soradate Wangtangme
6. Mr. Seng Intaraprasert
7. Mr. Soonthorn Premkit
8. Mr. Sanit Taepanont
9. Mrs. Malai Thonggui
10. Miss Boonsom Pisuthikul
11. Mr. Sompat Ngamchaleew
12. Mr. Nipon Inwattana
13. Mr. Kanok Kluankloy
14. Mr. Suchart Phumsiri

Total = 54 persons

2. Bacteriology

- Medical scientists

1. Miss Krongkaew Supawat
2. Dr. Surachai Tishyadhigama
3. Mrs. Surang Dejsirilert
4. Mrs. Siripan Wongwanich
5. Miss Renu Sunthadvanich
6. Miss Orn-anong Ratchtrachenchai
7. Miss Prapawadee Booncharoen
8. Mr. Sarisak Soonthornchai
9. Miss Wantana Praveenkittiporn

- Scientist assistants

1. Miss Sunanta Ramsiri
2. Miss Srirat Pornruangwong
3. Mrs. Penkhare Ratanapiriyakul
4. Miss Siriporn Chantraroj

- Workers

1. Mr. Preecha Muenpun
2. Mr. Pan Chantramanee
3. Miss Pornpimol Donraksa
4. Miss Supatra Limpisatien

Total = 17 persons

3. Mycology

- Medical scientists

1. Dr. Vinita Boriraj
2. Miss Natteewan Poonwa
3. Mrs. Raewadee Buttraporn
4. Miss Jotika Boon-long

- Scientist assistants

1. Mrs. Siriwan Poonsuwan

- Workers

1. Mr. Wirat Kraipakdi

Total = 6 persons

4. Parasitology

- Medical Scientists

1. Miss Paradee Mamechai
2. Miss Nuanchawee Wejprasit

- Scientist assistants

1. Mr. Preecha Panyaraggij
2. Mr. Wanchai Maneeboonyoung

- Workers

1. Mrs. Walapaporn Komkai

Total = 5 persons

5. Immunology

- Medical Scientists

1. Mr. Wattana Auwanit
2. Mrs. kruavon Balachandra
3. Miss Wallapa Israngkul Na Aythya

Total = 3 persons

6. Biological Products

- Medical scientists

1. Dr. Sompop Ahandrik (Expert in Biological Products)
2. Mrs. Kanchana Leelasiri
3. Mrs. Teeranart Jivapaisarnpong
4. Mr. Teerapon Kachacheewa
5. Dr. Boomruam Chokuaychai
6. Mr. Prakorb Ruangriratanaroj
7. Mr. Prayute Buddhirakkul

Total = 7 persons

7. Medicinal Plants

- Medical scientists

1. Mrs. Wantana Ngamwat (Director, Div. of Medical Research)
2. Dr. renu Koysooko
3. Mr. Kamol Sawasdimongkol

4. Mr. Daroon Pecharaply
5. Miss Thaweephol Dechatiwongse
6. Dr. Pittaya Tuntiwachwuttikul
7. Mrs. Nathrudee Sittisomwong
8. Mr. Amporn Kun-Anake
9. Dr. Wutichai Nutakul
10. Mrs. Jaree Bansiddhi
11. Mr. Manas Wangmad
12. Mrs. Angkana Herunsalee
13. Miss Orasa Pancharoen
14. Mrs. Malee Bunjob
15. Mrs. Pranee Chavalittumrong
16. Mrs. Nuchatta Chansuwanit
17. Mr. Theerawut Pinthong
18. Miss Kalaya Anulukanapakorn
19. Vichien Leelasangaluk
20. Miss Thidaratana Pluemjai
21. Miss Yenchit Jewvachdamrongkul
22. Mrs. Oranud Chokechaijaroenporn
23. Miss Krongkaew Naowsaran

- Scientist assitants

1. Mr. Suraphol
2. Mr. Chatree Charnprasert
3. Miss Emmanasa Umpornprapa

Total = 26 persons

8. Medical Entomology

- Entomologists

1. Dr. Chamnong Chimapun (Director, Div. of Medical Entomology
2. Mr. Prakong Phan-Urai
3. Ms. Usawadee Thavara
4. Mr. Nausorn Malainaul
5. Mr. Chitti Chansang
6. Mr. Wirat Samutrapong
7. Mrs. Pimpa Watanachai
8. Mr. Somkait Boonyabancha
9. Mr. Banyong Matcum
10. Mr. Thamrong Pholchevin

11. Mr. Kasin Suphathom
12. Mrs. Laojana Chawanadisai
13. Ms. Saranchit Krairuk
14. Mr. Mongkol Chenchittikul
15. Ms. Uruyakorn Osangthammanon
16. Mrs. Nipa Benjapong
17. Manit Naksuwan (Temporary)

- Science officers

1. Mr. Poonyos Reilrangboonya
2. Mr. Somporn Tungkasakun
3. Mr. Suwit Thanasripukdikul
4. Mr. Pornchai Amnukkithikul
5. Mr. Sumas Chantamas

- Lab. aids

1. Mr. Sathit Wanasri
2. Mr. Tos Supeedan
3. Mr. Vera Sappramaul
4. Mr. Somthob Nilacha
5. Mr. Boonsom Vibulat
6. Mr. Narong Kawchinda
7. Mr. Somdech Chiampouksawatana
8. Mrs. Suwanna Athapornrungroeh
9. Mr. Suree Pathomwong
10. Mr. Paiboon Kawhaing
11. Mr.Suwat Kawkaw
12. Mr. Wiroon Boonkul

- Mosquito scouts

1. Mr. Choompon Choomponrug
2. Mr. Surapon Ditnet
3. Mr. Yuthana Poosap
4. Mr. Bancha Tintanon
5. Mr. Veraporn Chamsri
6. Mr. Taworn Pathomwong
7. Mr. Preeda Upasit

8. Mr. Sunti Yookong (Temporary)
9. Mr. Boonrod Phuntong (Temporary)
10. Mr. Rachane Intrachai (Temporary)

- Workers

1. Miss Binya Yaibao
2. Mr. Boonsong Sappramaul
3. Mr. Wathisun Somboonnawin

Total = 47 persons

9. Environmental Health Science
10. Biomedical Research on Food
11. Pharmaceutical Science

} Miss Amara Vongbhuddhapitak (Chief)

For each activity, 5 researchers from concerned divisions at the DMS (Yod-se) will conduct research on respective subjects at NIH. The researchs will be alternatively assigned at NIH according to their research projects.

Total = 15 persons

12. Animal Experiment Center

- Medical scientists

Dr. Tanawat Nantamingchareun

- Scientist assistants

Mrs. Somsong Noitip *

- Workers

1. Mr. Sawas Chaksurat
2. Mr. Somkid Kaewnut
3. Mr. Pichai Rukboonrong
4. Mr. Paiboon Pumchat
5. Mr. Pairoj Sangsiri

Total = 6 persons

* Virology staff

13. Radio-Isotope Laboratory

- Medical scientists

1. Ms. Wiyada Charoensiriwatana
2. Ms. Noppawan Janejai
3. Ms. Duanthanorm Promkhatkaew
4. Ms. Wipa Tangkananond
5. Ms. Teerakul Apornsuwan
6. Ms. Chantanee Wacharakorn

Total = 6 persons

14. Biohazard Laboratory

- Medical scientist

Dr. Boondee Atikij *

15. Scientific Equipment Center

- Medical scientists

1. Dr. Somkiat Wongkobkiat
2. Mr. Chusak Chamnanyontarakit
3. Mr. Narong Sukniwatsiri (Temporary)

- Electrical engineers

1. Mr. Kiattisak Popaitoon
2. Rawat Pornpatkul
3. Mr. Anuchit Lakmakawan
4. Mr. Vitaya Satipap (Temporary)

- Lab. technicians and mechamicians

1. Mr. Sasiwong Duongdet
2. Mr. Nives Silotot

* Virology staff

- Science officer

1. Mr. Amnat Boonkroupun
2. Mr. Watana Lekpet

- Administrative officer

Mrs. Rossana Ariyakulnimit

Total = 12 persons

16. Administrative office

- Administrative officers

1. Mrs. Amaraluck Chantakulwanich (Chief)
2. Ms. Malinee Chatnilbandhu

- Clerks

1. Mrs. Vimonrat Nilasidh
2. Ms. Nuanchan Premkit
3. Ms. Santhana Piyanigun
4. Ms. Supee Premchaidee
5. Ms. Kanchana Chakniramol
6. Ms. Angkana Chirapongwatana
7. Ms. Yaowaluck Kattikamas
8. Mrs. Ranee Chulasawage

- Typists

1. Mrs. kruongkanung Nanil
2. Ms. Nutsara Termvititakarn
3. Ms. Komkhum Kaewprachar
4. Ms. Tanyaporn Klaychim
5. Ms. Sumalee Puttaboriwan

- Supply officers

1. Mrs. Chaluai Phornruangwong
2. Ms. Ausa Chichuenban
3. Ms. Ura Donraksa

- Drivers

1. Mr. Niyom Naksamdangrit
2. Mr. Sonthi Thisacharn

3. Mr. Saweng Ketthong
4. Mr. Naret Channuan
5. Mr. Songkram Vechsanit
6. Mr. Prasert Kema
7. Mr. Prasert Somboonnawin
8. Mr. Prachim Saunpruksa
9. Mr. Samran Oonsamran
10. Mr. Lank Namsri

Total = 28 persons

Grand total = 225 persons

5－3　第二回コーディネーティングコミティー資料

5－3－1　The report of the first meeting October 8, 1985.

5 — 3 — 1 Report of the First Meeting of

Coordinating Committee for the Research Promotion Project in NIH

1/1985, 8 October 1985

Conference Room, Department of Medical Sciences

Attending Committee ;

1. Mrs. Preeya Kashemsant Represented for Permanent Secretary, Ministry of Public Health	Chairman
2. Dr. Nadhirat Sangkawibha	Honorable Consultant
3. Dr. Somsak Varakamin Director-General, Department of Medical Sciences	Member
4. Mrs. Preeya Kashemsant Representative from Ministry of Public Health	Member
5. Mr. Sutin Susila Representative from Department of Technical and Economic Cooperation	Member
6. Dr. Ryosuke Murata Japanese Team Leader	Member
7. Mr. Kohei Nakajima Japanese Coordinator	Member
8. Mr. M. Goto Director of Japan International Cooperation Agency, Bangkok	Member
9. Dr. Renu Koysooko Department of Medical Sciences	Member and Secretary Assistant

Non-attending Committee ;

1. Representative from Ministry of University Affairs
2. Expert, Department of Medical Sciences

3. Expert, Department of Medical Sciences
4. Deputy Director-General, Department of Medical Sciences
   (Director of NIH)

Invited Participants:

1. Mr. Yasunobu Takayama
   First secretary, Embassy of Japan Government
2. Dr. Pracha Emamorn
   Deputy Director-General, Department of Medical Sciences
3. Ms. Panida Kanchanapee
4. Ms. Amara Vongbuddhapitak
5. Dr. Somkiat Wangkobkiat
6. Dr. Chongdee Wongpinairat
7. Dr. Boondee Atikij

In the opening speech, the chairman mentioned briefly about the establishment of the National Institute of Health (NIH). Initially, the government of Thailand requested the government of Japan to extend a grant-aid for establishing the NIH. As a result of the discussions in November 1983 and February 1984, the cooperative agreement between the government of Japan and Thailand was signed on 8th June, 1984. Accordingly, grant-aid of 400 million bahts will be supported by the government of Japan for laboratory equipment and the construction of NIH building. In order to accomplish the objectives of NIH master plans, technical cooperation has also been granted by the Japanese government. The Japanese Implementation Survey Team Organized by Japan International Cooperation Agency (JICA) is now collaborating with Thai authorities on the details of the technical cooperation program concerning the Research Promotion Project in NIH.

Mr. M. Goto, Director of JICA in Bangkok, has expressed his appreciation and promised to support NIH project with experts and fellowships. He has finally confirmed that JICA will do its best to make this project successful.

1. Information from Chairman:

The Chairman has announced the appointment of Coordinating Committee for the Research Promotion Project in NIH. The committee comprises 10 members from the Thai side and 3 members from the Japanese side. The lists of committee members and functions are presented on the attached sheet No. 1

2. Reports and discussions on the following subjects:

2.1 Progress report on the construction of NIH building

The construction of NIH building, located in Nonthaburi province, has been supported by grant-aid from the government of Japan. The NIH building is a three-storey building with total floor area of 15,365 sq. meters, and consists of research laboratories, administrative office, cafeteria, conference room, service building, scientific equipment center and animal experiment center. According to Ms. Amara Vongbuddhapitak, more than 23% of the total construction has been accomplished so far. The construction is expected to be finished by the end of 1986.

2.2 Progress report on the implementation of the technical cooperation

- The tentative schedule of the implementation for the Research Promotion Project in NIH, presented by Ms. Panida Kanchanapee, has been approved by the committee (attached sheet No. 2).

- List of experts and fellowships requested for the fiscal year 1985/86 has been discussed and concluded as shown in attached sheet No. 3.

- Lists of supplies by experts, equipments, reagents and glassware to be provided in 1985 have been reported and approved. The total budget for the supplies and equipment which will be purchased locally from agents in Bangkok has not yet been finallized.

2.3 Consideration of reports from Steering Committee on the future plan and tentative schedule for 1986/87 fiscal year

The Steering Committee, appointed by the Director-General of Department of Medical Sciences, primarily serves as the functional

committee to review the overall progress of the implementation in line with the master plan and the policy and recommendations of the Coordinating Committee.

- Ms. Panida Kanchanapee, as the representative of the Steering Committee, has reported the revised future plan of activities for technical cooperation as shown in attached sheet No. 4.

- In addition, lists of Japanese experts and fellowships for 1986/87 (attached sheet No.5), and lists of equipments, reagents and glassware to be provided after 1986, has also been presented (attached sheets No. 6 and 7).

These reports have been approved by the Coordinating Committee.

2.4 Comments and suggestions from Japanese Team

Dr. Ryosuke Murata, on behalf of the Japanese advisory committee, has made few comments as follows:

1. It is necessary to acknowledge NIH staff of the advanced technology in biochemistry, immunochemistry, microbial genetics and biostatistics. Recruitment of young and active researchers in these fields will definitely promote the research in modern medical science such as biotechnology and immunology.

2. The NIH should be recognized as the Reference Center for other public health laboratories not only in Thailand but also in other Asian countries. This can be accomplished by strengthening research in clinical bacteriology and promoting other reference activities besides the identification of the pathogens.

3. The production of biological products including JE, Rabies and DPT vaccines can be improved by purification of the antigens used. In addition, vaccine productions employing biotechnology should be taken into consideration in future.

4. Budgets for the utilities should be considered in addition to budgets for reagents and equipment to avoid any problems which may arise due to the increase of utility cost.

Additional comments have been made by Dr. R. Murata on behalf of 2 Japanese experts who worked at DMS in September, 1985.

1. It is advisable that the Thai government should consider the production of some essential reagents or media commonly used in laboratories in stead of importing them from foreign countries. The products will not only be used locally but also may be exported to other Asian countries.

2. In connection with the Reference activities, it is important to train the leading staff working in hospital and public health laboratories. The arrangement of the conferences or workshop will be planned and considered by the Steering Committee.

Dr. R. Murata concluded his comments by expressing his appreciation for the cooperation of the Thai authorities.

3. Others

3.1 The extension of the official term of Dr. Murata as the Japanese Team leader has been requested by Dr. Somsak Varakamin, Director-General of DMS.

3.2 It is agreeable that there should be another meeting of Coordinating Committee before the end of this fiscal year.

Attached sheet No. 1

Order of Ministry of Public Health
No. 393/2528
The Establishment of Coordinating Committee for
the Research Promotion Project in the National Institute of Health

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In accordance with the Japanese Technical Cooperation for the Research Promotion Project in the National Institute of Health supported by the Government of Japan, under the Colombo Plan, the Ministry of Public Health is pleased to announce the establishment of Coordinating Committee for the Project which comprises of:

1. Permanent Secretary, Ministry of Public Health	Chairman
2. Dr. Nadhirat Sangkawibha	Honorable Consultant
3. Director-General, Department of Medical Sciences	Member
4. Representative from Ministry of Public Health	Member
5. Representative from Ministry of University Affairs (Prof. Dr. Pravee Vasi)	Member
6. Representative from Department of Technical and Economic Cooperation	Member
7. Expert, Department of Medical Sciences	Member
8. Expert, Department of Medical Sciences	Member
9. Japanese Team Leader	Member
10. Japanese Coordinator	Member
11. Representative from Japan International Cooperation Agency, Bangkok	Member
12. Deputy Director-General, Department of Medical Sciences (Director of the National Institute of Health)	Member and Secretary
13. Mrs. Renu Koysooko, Department of Medical Sciences	Member and Secretary Assistant

The Committee must have the following responsibilities:

1. To formulate research policy in line with master plan and objective of the Project
2. To evaluate the progress of the Project

3. To advise the both Governments on:
   a. the implementation of the Project
   b. the budgetary matters
   c. the recruitment of Thai counterpart personnel
   d. other matters mutually agreed upon as necessary

4. To establish the subcommittees, when necessary, for the excution of specific activities.

This Order is immediately effective from the issuing date.

(Date) September 25, 1985

(Dr. Amorn Nondasuta)
Permanent Secretary
Ministry of Public Health

Attached sheet No. 2

TENTATIVE ANNUAL SCHEDULE OF IMPLEMENTATION FOR THE RESEARCH PROMOTION PROJECT IN THE NATIONAL INSTITUTE OF HEALTH

The Japanese Implementation Survey Team and the Thai authorities concerned have jointly formulated the Tentative Annual Schedule of Implementation of the Project as annexed hereto.

These have been formulated in connection with the Attached Document of the Record of Discussion signed between the Japanese Implementation Survey Team and the Thai authorities concerned for the Research Promotion Project in NIH on the condition that necessary budget will be allocated for the implementation of the Project, subject to changes within the framework of the Record of Discussions when necessity arises in the course of implementation of the Project.

Bangkok, April 22 , 1985

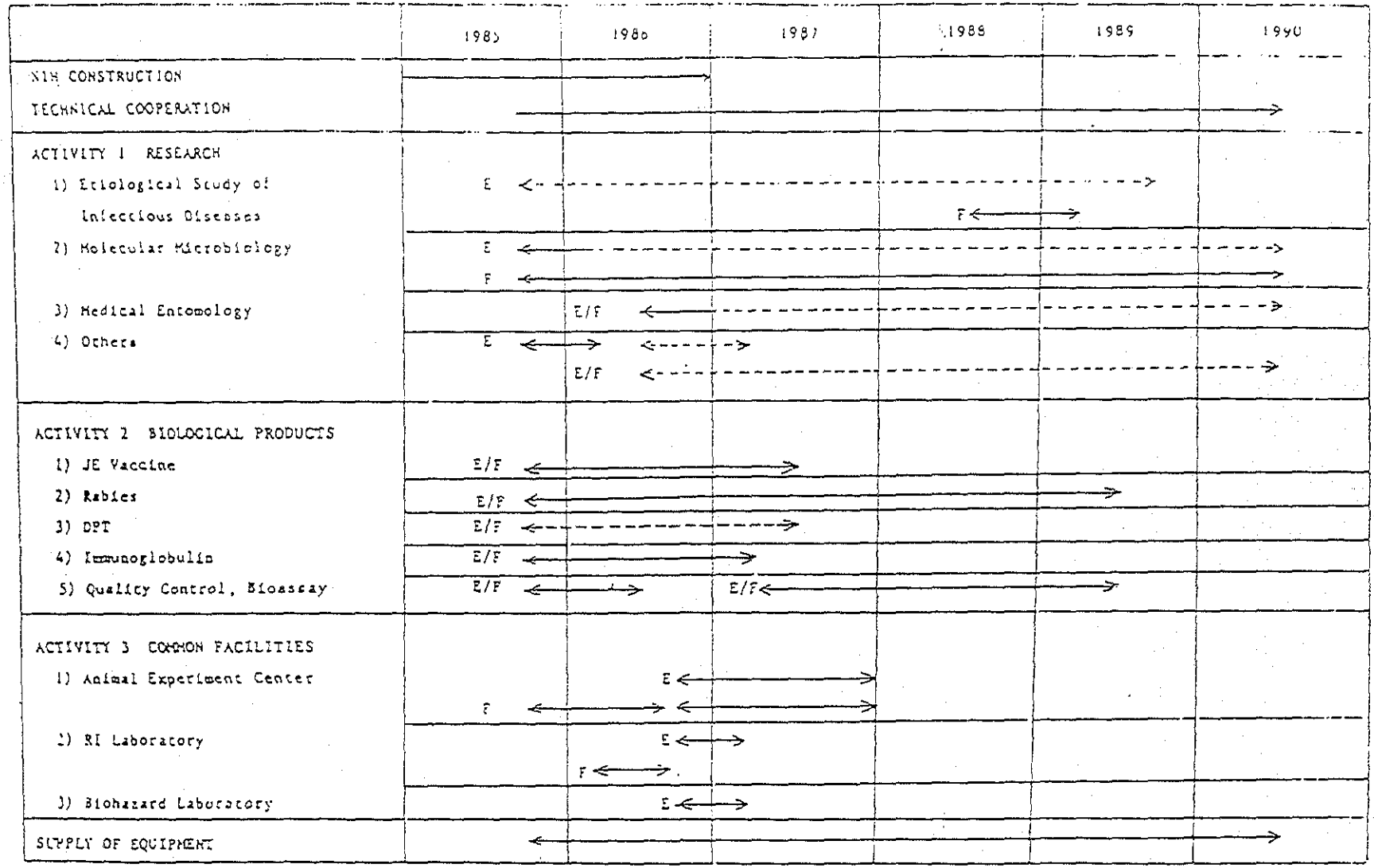
R Murata

Dr. Ryosuke Murata
Leader
Japanese Implementation Survey
Team, JICA, Japan

N. Sangkawibha

Dr. Nadhirat Sangkawibha
Director General
Department of Medical Sciences,
Ministry of Public Health
The Kingdom of Thailand

1 TENTATIVE ANNUAL SCHEDULE OF IMPLEMENTATION FOR THE RESEARCH PROMOTION PROJECT IN NIH



NOTE: The Government of the Kingdom of Thailand is requested to assign the personnel trained in Japan to the Project until the completion of the Project.

E - Japanese Expert F - Fellowship -------- Time and duration will be fixed later

List of experts requested for fiscal year 1985/86

Field	Number	Period
1. Team Leader	1	1 year
2. Coordinator/Liaison Officer	1	5 years
3. Bacteriologist (Molecular Biology)	2	1 month
(Noscomial infectious & Taxonomy)	1	3 months
4. Biochemist	1	3 months
5. Immunochemist (Radioimmunoassay)	1	1 month
6. Expert in Biological product (rabies)	1	3 months
(JE)	1	2 years

List of experts requested for fiscal year 1986/87

Field	Number	Period
1. Team Leader	1	4 years
2. Expert in animal experiment	4	2-4 months (each)
3. Expert in mycotoxin	1	3 months
4. Expert in Radioisotope technique	1	3-6 months
5. Entomologist	2	3-6 months (each)
6. Expert in biological product	2	3 months (each)
7. Immunologist	2	1 month
8. Expert in bacterial chemistry (limulas test)	1	3 months
9. Expert in biostatistical analysis	1	3 months

List of fellowships requested for FY 85/85 & 86/87

Field	Number	Period
1. Administration and research promotion	1	3 weeks
2. Health research planning and management	1	3 months
3. Genetic study in bacteriology	1	18 months
4. Genetic study in virology	1	18 months
5. Immunology in relation to infectious diseases	1	12 months
6. Immunochemistry	1	12 months
7. Animal care	1	12 months
8. Radioisotope technique	1	12 months
9. Bioassay and method development for new biological products	1	12 months
10. Experimental pathology	1	12 months
11. Biochemistry of toxic substances	1	12 months
12. Research and development of biological control of mosquitoes	1	12 months
13. Parasitology-invitro cultivation of parasites and test ofefficacy of medicinal plants	1	12 months

V. FUTURE PLAN OF ACTIVITIES FOR TECHNICAL COOPERATION

1. Application of monoclonal antibody and oligonucleotide fingerprinting technique in the study of epidemiology of infectious diseases.
2. Epidemiological and etiological studies of gastrointestinal and respiratory (bacteria) infections by the application of new taxonomical method such as DNA-DNA hybridization etc.
3. Study of mode of infection and immunity concerning pathogenicity in term of molecular biology in some bacterial diseases eg. those caused by gram negative bacilli and anaerobic bacteria.
4. Research on new biological products:
    1) Development of new vaccines: JE, rabies and rotavirus vaccines,
    2) Improvement of pertussis vaccine,
    3) Research on live typhoid and cholera vaccines.
5. Research on toxicity and therapeutic evaluation of new antimicrobial drugs and drug resistance of microorganisms and parasites including genetic study.
6. Research and development of biological control of vectors such as mosquitoes.
7. Study on effects of food contaminants on health with special reference to microbial toxins and microorganisms.
8. Research and development of rapid and appropriate diagnosis methods of infectious diseases for using at regional and peripheral laboratories.

9. Application of microbiological method in the study of carcinogenic substances.

10. Study on medicinal plants for using against the infectious diseases and bioassay of some new drugs.

Attached sheet No. 3

A. List of experts expected for the fiscal year 1985 (September 1985-March 86)

Field	Number	Period
1. Team Leader (Dr. Ryosuke Murata)	1	Sept 5 - Oct 15, '85
2. Coordinator/Liaison Officer (Mr. Kohei Nakajima)	1	Aug 1, 85 - July 31, '90
3. Nosocomial infections & Taxonomy (Dr. Riichi Sakazaki)	1	Sept 5 - Sept 30, '85
4. Immunochemist (Radioimmunoassay) (Mrs. Kaoru Momomura)	1	Sept 5 - Sept 26, '85
5. Biochemist (Dr. Sato)	1	Nov 20 - Feb 19, '86
6. Expert in biological product (rabies)	1	3 months (November)
(Mr. M. Yoshida) (JE)	1	2 years
7. Bacteriologist (Molecular Biology) (Dr. Miwatani, Dr. Honda)	2	1 month (each)(February)

B. List of fellowships accepted for the fiscal year 1985 (July 1985-March 1986)

Field	Number	Period
1. Administration and research promotion (Mrs. Preeya Kashemsant)	1	July 22 - August 9, '85
2. Health research planning and management (Dr. Boonluan Phanthumachinda)	1	Sept 18 - December 7, '85
3. Genetic study in bacteriology (Dr. Surachai)	1	December, 85 - June, '87,
4. Genetic study in virology (Dr. Yoawapa)	1	Sept 18, '85 - March 17, '87
5. Immunochemistry (Ms. Walapa)	1	12 months(November, 1985 →)
6. Radioisotope technique	1	12 months

Attached sheet No.4

Future plan of activities for technical cooperation

1. Application of monoclonal antibody and oligonucleotide fingerprinting technique in the study of epidemiology of infectious diseases.
2. Epidemiological and etiological studies of gastrointestinal and respiratory (bacteria) infections by improving bacteriological techniques by introduction of modern technology of medical sciences and taxonomical method. Modern technology involves biochemistry and biophysics etc.
3. Establishment of National Reference System in
    1) Clinical Microbiology
    2) Public Health Microbiology
4. Study of mode of infection and immunity concerning pathogenicity in term of molecular biology in some bacterial diseases eg. those caused by gram negative bacilli and anaerobic bacteria.
5. Research on new biological products:
    1) Development of new vaccines : JE, rabies and rotavirus vaccines,
    2) Improvement of method of production and control of DPT vaccine: etc.
    3) Research on live typhoid vaccine and cholera vaccine.

6. Research on toxicity and therapeutic evaluation of new antimicrobial drugs and drug resistance of microorganisms and parasites including genetic study.
7. Research and development of biological control of vectors such as mosquitoes.
8. Study on effects of food contaminants on health with special reference to microbial toxins and microorganisms.
9. Research in parasitology with special reference to in vitro cultivation of parasites and test of efficacy of medicinal plants.
10. Application of microbiological method in the study of carcinogenic substances.
11. Study on medicinal plants for using against the infectious diseases and bioassay of some new drugs.

Attached sheet No. 5

A. List of experts requested for fiscal year 1986/87

Field	Number	Period
1. Team Leader	1	4 years
2. Expert in animal experiment	4	2-4 months (each)
3. Expert in mycotoxin	1 1	3 months
4. Expert in Radioisotope technique	1	3-6 months
5. Entomologist	2	3-6 months
6. Expert in Bacteriology	2	6 months, 3 months
7. Expert in Biological product including DPT vaccine etc.	2	3 months (each)
8. immunologist.	2	1 month (each)
9. Expert in biostatistical analysis	1	3 months
10. Expert in Bacterial chemistry (Limulus test)	1	3 months

B. List of fellowships requested for fiscal year 1986/87

Field	Number	Period
1. Amimal care	1	12 months
2. Immunology in relation to infectious diseases	1	12 months
3. Systematic bacteriology	1	12 months
4. Bioassay and method development for new biological prcducts	1	12 months
5. Experimental pathology	1	12 months
6. Biochemistry of toxic substances	1	12 months
7. Research and development of biological control of mosquitoes	1	12 months
8. Parasitology-in vitro cultivation of parasites and test of efficacy of medicinal plants.	1	12 months

Attached sheet No. 6

Equipments to be provided after 1986

Items	Description	Spec/Manufacturers
1.	CO_2 Incubator	
2.	Cell counter for leukocyte counting in Pertussis vaccine study	Coulter Counter or equivalent
3.	Electric hand dryer	
4.	Electric pump and sprayer	Fuji Compressor Mfg. Co.Model PA-02 RPM 680. capacity 1.83 C.F.M.H.P. Motor Super-Line S, Mitsubishi Type SP-NR,220V 50 Hertz 2. 8A 1450 RPM
5.	Electrophoresis app. set	
6.	Station wagon	diesel
7.	Syringe pump "Triple channel"	
8.	Ultrasonic cell disruptor	generator 200-300 W, 5-10k cooling jackets titanium tip:- standard size and microtip
9.	BOC, COD, DS, O2 Consumed rapid analyzer	
10.	Refrigerator/Freezer	explosion proof, 14 Cu ft., Lab Line or equivalent
11.	Nephelometer	
12.	Vacuum oven	
13.	Statham transducer +/-30 g, +/10.6 mm	input 7.5V max or equivalent
14.	Dynateoh MIC 2000	Cooke Engineering Co.
15.	Freeze dryer	
16.	Refrigerator	
17.	Tissue Homogenizer	
18.	Fraction collector	
19.	Radiochromatograph scanner	
20.	Equipment for RI Laboratory	see below *
21.	Inhalation chamber	

Equipments for RI Laboratory

Ultrasonic cleaner	1
CLEAR-Pb-Bench Top Shield	1
Isotope Storage Cabinet	1
Area Alarm monitor	2
Lead Aprons	2
Stirrer/Hot plate/magnet bars	2
Rotator/Roller mixer	2
Water bath with shaker	1

Attached sheet No. 7

A. Reagents to be provided after 1986

Virology

1. CN-Br activated sepharose 4B will be provided by Dr.Sato.
2. Hepatitis A antigen Tissue culture preparation
3. Hyper immune serum of rotavirus type I and II
4. Varicella zoster seed virus (Tissue culture)
5. HELF for V-Z virus
6. Parainfluenza seed virus type 1,2,3,4,
7. Adenovirus 1,2,3,4,7,8, (seed virus)
8. Herpes simplex viruses type 1 and 2 (seed virus)
9. Herpes simplex viruses hyper immune serum type
13. Seamless cellulose tubing for dialysis size 9/32
(Visking Company, Japan)
will be provided after discussion with Dr. Satoh.

2-12 : will be provided by the Expert in Virology.

Bacteriology

1. Antilabile toxin of E. coli or anti-cholera toxin
will be provided by expert in Bacterial toxin.
5. FITC labelled rabbit globulin of Legionella pneumophila group 1-4
will be provided later by discussion with the expert in Bacteriology.

: 2,3,4, and 6: already supplied.

Mycology

1. API 20 C for identification of Candida app.
2. API 50 CM for yearst identification

1-2 : will be discussed later with the expert in mycotoxin.

Medicinal plant Research

1. Standard amino acid
2. Standard sugar
3. Standard monoterpenes and sesquiterpenes
4. Deutero chloroform

5. Hexadeuterodimethylsulfoxide
6. Tetradeuteromethanol
7. Deuterium oxide
8. Trimethylphosphine
9. Diazald (N-methyl-N-nitrose-p-toluene sulfonamid)
10. Celite, analytical filter aid
11. Standard quinine, quinidine, cinchonine, cinchonidine
12. Standard berberine
13. Standard pyrrolizidine alkaloids
14. Anesthetic ether
15. Reagent for TLC
16. HPLC reagent grade

1-16 : will be considered after discussion with Dr. Satoh.

Environmental Health Science

1 Toxin standards
- Aflatoxins B.G. each, Orchratoxin
- Trichothecenes (1-2, NV, Fx,DAS etc)
will be considered after discussion with the expert in mycotoxin.

Phamaceutical Sciences

11. Limulus Amebocyte Lysate (LAL) single vials set
will be considered after discussion with Team Leader.

Radioisotope Laboratory

1. 3H - hypoxanthine
2. Radioactive labelled 4- (3',4' dimethoxyphenylbut-3-en -1-ol)
3. 125 I labelled cannabinoid
4. 14C labelled pesticide (Benomyl, Cabaryl)
5. 3H - Depo medroxy progesterone acetate (DMPA) tracer
6. 125 I - digoxin
7. Digoxin antiserum (Welcome)
8. DMPA antiserum
9. Bovine serum albumin

10. Diethylstilbestrol
11. 125 I (OAEP)
12. 32 P (Ortho-phosphate) (OAEP)
13. 3 H - ATP
14. 3 H - Thimidine
15. 3 H - Uridine
16. 3 H - Leucine
17. 3 H - Tyrosine
18. 3 H - Valine
19. 3 H - Glucosamine
20. 35 S - Methionine
21. Scintillant
22. Activated charcoal

1-22 : will be considered after discussion with the expert in RI technique.

B. Glassware and Expendable Materials to be provided after 1986

Biomedical Research on Food
1. Sample filtration system
7. Blender jar
8. Platinum dish and crucible

1,7 and 8 : will be considered after discussion with Dr. Satoh.

Radioisotope Laboratory
1. Scintillation vials, kimble
2. Test tube flat bottom
3. Stainless racks
4. Eppendorf pipette, fixed model
5. Eppendorf pipette, three volume model
6. Eppendorf stand
7. Eppendorf standard tip
8. Eppendorf repeater (multipipette)
9. Eppendorf repeater (multipipette)

10. Combitip for eppendorf multipipette
11. Accupenser volume 10 ml
12. Test tube sterile with polypropylene screw cap capacty:5 ml
13. Glass vial with plastic screw cap
14. 96-flat bottom wells microtitre plate
15. 200 ul - heparinized capillary
16. Disposable glove

1-16 : will be considered after discussion with the expert in RI technique.

5 — 3 — 2 Planning of research activities after 1987.

5 — 3 — 2 Planning of Research Activities

1. Future plan of Activities for Technical Cooperation (Revised).

2. Research Plan at the NIH under Technical Cooperation (1987-1989).

Future plan of activities for technical cooperation (Revised)

1. Application of monoclonal antibody and oligonucleotide fingerprinting technique in the study of epidemiology of infectious diseases.
2. Epidemiological and etiological studies of gastrointestinal and respiratory (bacteria) infectious by improving bacteriological techniques by introduction of modern technology of medical sciences and taxonomical method. Modern technology involves biochemistry and biophysics etc.
3. Establishment of National Reference System in
    1) Clinical Microbiology
    2) Public Health Microbiology
4. Study of mode of infection and immunity concerning pathogenicity in term of molecular biology in some bacterial diseases eg. those caused by gram negative bacilli and anaerobic bacteria.
5. Research on new biological products:
    1) Development of new vaccines: JE, rabies and rotavirus vaccines,
    2) Improvement of method of production and control of DPT vaccine: etc.
    3) Research on live typhoid vaccine and cholera vaccine.
6. Research on toxicity and therapeutic evaluation of new antimicrobial drugs and drug resistance of microorganisms and parasites including genetic study.
7. Research and development of biological control of vectors such as mosquitoes.

8. Study on effects of food contaminants on health with special reference to microbial toxins and microorganisms.
9. Research in parasitology with special reference to in vitro cultivation of parasites and test of efficacy of medicinal plants.
10. Application of microbiological method in the study of carcinogenic substances.
11. Study on medicinal plants for using against the infectious diseases and bioassay of some new drugs.

RESEARCH PLAN AT THE NIH UNDER TECHNICAL COOPERATION(1987-1989)

1. VIROLOGY

Research activities

1. Research to support epidemiological surveillance of viral diseases prevailing in Thailand:
   - development of efficient and rapid diagnostic techniques for JE, dengue, influenza, rabies, hepatitis A, non A non B, rota viruses and etc.
   - study on immune status to JE virus.
   - Application of oligonucleotide fingerprinting technique for the differentiation of JE, dengue and influenza virus strains.
2. Research and development of viral vaccines
   - production, quality control and field trial of JE, hepatitis B and rabies vaccines.
3. Production and supply of diagnostic reagents to regional medical centers
   - supply of reagents used in RPHA and PHA assays for the detection of anti-hepatitis B virus antibody.
   - supply of HI and Mac ELISA kits for the detection of anti-JE virus antibody.
4. Establishment of new laboratories for chlamydia, rickettsia and oncogenic viruses
   - development of isolation and diagnostic techniques for chlamydia and rickettsia.
   - development of diagnosis for EBV and CMV.

2. BACTERIOLOGY

Research activities

1. Establishment of National Reference System in
   1) Clinical Microbiology
   2) Public Health Microbiology
2. Development of detection, isolation and purification techniques for pathogenic bacteria and bacterial toxins (C. difficile, ETEC, and etc.).
3. Research on biological activities and pathogenesis of bacterial toxins.
4. Studies on toxicity and therapeutic evaluation of new antimicrobial drugs and drug resistance of microorganisms.
5. Research to support epidemiology and etiology of gastrointestinal and respiratory infections caused by bacteria:
   - epidemiological studies on streptococcus infection and legionnaires disease.
6. Production of serodiagnostic reagents for enteropathogenic bacteria (e.g. enterotoxigenic E.coli).

3. PARASITOLOGY

Research activities

Application of monoclonal antibody in the study of parasitic infections diseases and epidemiological researches on parasitic infestations will be caried out. An in vitro cultivation of parasites and test of efficacy of medicinal plants will also be conducted.

4. MYCOLOGY

Research activities

Various deep seated and systemic systemic fungi, toxic fungi and their mycotoxin will be studied which including method of the isolation and identification. Histopathological study of fungi in human tissue and in experimental animals is included.

5. IMMUNOLOGY

Research activities

1. Development and production of immunological reagents utilized in immunological research.

- production, purification and identification of class specific immunoglobulin and anti-class specific immunoglobulin.

2. Development of rapid diagnosis for viral and bacterial diseases.

- diagnosis for JE, dengue, herpes, and etc, employing monoclonal antibody or oligonucleotide fingerprinting technique.

3. Research on immune mechanisms to virus, bacteria and other microorganisms.

- development of *in vitro* assay for cell-mediated immune response to herpes viruses.

6. DEVELOPMENT AND CONTROL OF BIOLOGICAL PRODUCTS

Research activities

1. Development and production of vaccines induding JE, dengue and pertussis vaccines.

2. Development and improvement of the biological control technology for the existing and new biological products :

- quality control of JE, rabies (vero cell), hepatitis B, pertussis, and hepatitis B immunoglobulin.

3. Research and evaluation of the cold chain system, immunological effects and efficacy of EPI.

7. MEDICINAL PLANT

Research activities

Studies on the medicinal plants and plant-derived products which including cultivation, structure elucidation, pharmacological, toxicological studies.

8. MEDICAL ENTOMOLOGY

Research activities

The main activities are fundamental and applied research on vector surveillance, vector control, and insecticide susceptibility of vectors to support the epidemiology, prevention and control of vector-borne diseases.

9. ENVIRONMENTAL HEALTH SCIENCE RESEARCH

Research activities

Toxicological evaluation of environments caused by chemical and other natural sources will be studied. Mutagenicity and carcinogenicity of chemical hazard, and histopathology of experimental animal will also be conducted.

10. BIOMEDICAL RESEARCH ON FOOD

Research activities

Food contaminants caused by environmental pollution will be conducted. Food microbiology and toxicology including methodology development will also be studied.

11. PHARMACEUTICAL SCIENCES

Research activities

Research activities are concerned with the improvement of quality assessment of drug including RIA, chemical and microbiological. The quality control of radiopharmaceutical products are also conducted.

12. RADIOPHARMACEUTICAL LABORATORY

13. BIOHAZARD LABORATORY

14. ANIMAL EXPERIMENT CENTER

The activities of these three laboratories will serve as the supportive activities for other laboratories to perform the research work efficiently.

15. Scientific Instrument Center