

Chapter 6

IMPLEMENTATION PLAN AND ORGANIZATIONAL SETUP FOR THE EXECUTION

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6-1 Implementation Plan

(1) Basic Consideration in Implementing the Program

This program consists of wide varieties of contents to be implemented. All of these sub-programs are necessary to be implemented in well-organized manner to achieve the objective set for standardization and quality improvement. Some sub-programs have inter-relation with others, and some are planned on other sub-programs as its basis. It is indispensable to formulate an implementation plan taking into account such points as mentioned above, and to establish an execution organization with adequate control and arrangement function, which will be discussed in the later part of this chapter.

In formulating the implementation plan, the implementation priority of the sub-programs is necessary to be examined in view of time of implementation. In examining the priority, the following points are required to be taken into consideration:

1. Some programs such as facilities upgrading/construction programs require a large amount of investment and a number of decision makings in the preparatory stage for implementation; while other sub-programs such as seminars and workshops are fairly easy to obtain the support from various technical assistance organizations and therefore, easy to implement. Thus, it is necessary to make estimation in advance as to how long the preparatory period is required, and what extent the difficulty and delay is foreseen in implementation.
2. Some sub-programs, such as upgrading of testing and inspection facilities for export inspection system, can not be implemented without the support from the government sector; while others such as establishment of testing organizations for certain types of research and development, are expected to be developed voluntarily without government support according to development of economic circumstances. Even for implementation of a part or total of the latter programs, however, the government support is sometimes desirable to promote the development. Thus, the priority in promoting implementation is also necessary to be examined in advance in view of the government support requirement.
3. Some programs such as introduction of the import inspection system require immediate implementation of a part of the program. The remaining part of the program, however, may take time in implementation. If such is the case, it is necessary to formulate an implementation plan of the part which require immediate implementation, separately from that of the rest of the program.

The following two programs are recommended to take immediate actions for prompt implementation:

1. Establishment of testing and inspection facilities in the National Central Region
2. Establishment of testing and inspection facilities in Cebu Region

The reasons are as follows:

1. These programs require a large amount of investment, a number of decision makings of relevant organizations, and wide variety of actions in the preparatory stage as described in the later part of this chapter.
2. Development of some part of the export inspection system and mandatory certification system is urgently needed, and the establishment of these facilities is the presumption of these systems.
3. The establishment and upgrading of these facilities are of high use in implementing programs effective for the future development of standardization and quality improvement.
4. The execution of this program requires direct participation of the government, since the testing and inspection facilities, especially those engaged in the mandatory certifications, should be operated neutrally.

These two programs are recommended to be implemented simultaneously. If only one of these programs is assumed to be implemented, however, the Cebu facilities establishment should have the priority in that this program is the minimum requirement for development of export inspection system and mandatory certification system over the country.

(2) Preparatory Actions for Implementation

All the programs require some preparatory actions for the implementation. The required actions vary depending on the types of programs. The following sections give the required preparatory actions by type of program. The thoroughgoing preparatory actions are especially essential for the facility development programs which require a large amount of investment.

1) Preparatory actions for facility development programs which require a large amount of investment

a) Establishment of the executing body

In the process of implementation of this type of programs, several steps of studies are carried out and the consensus or approval of relevant organizations are required. Therefore, it is essential in successful implementation to establish a capable executing body either being supported by organizations, which have sufficient experience in executing the similar programs, or engaging the consultants who have an appropriate expertise in this field.

b) Preparation of Detailed Program

The study is carried out in the preparatory phase of the Detailed Program, to formulate the basis of program implementation, which will be required in the succeeding steps of implementation to optimize the program. It includes the examination of financial arrangement to ensure the required investment, with formulating the action program for it.

At the same time, the adequate operation organization is examined among the relevant organizations formulating the execution program to establish it, aiming at efficient use of the facilities to achieve the objectives set for the program. The execution program should contain the followings, which are extremely important in smooth and successful implementation of the program:

1. Drafting a specific assignment of key staffs of the operation organization with consensus of the relevant organizations on this assignment.
2. Determining the type of operation organization in terms of administrative and operational view point; for example, government organization, public corporation, neutral third party organization, and non-profit based organization in private sector, etc.
3. Determining the government office in charge of controlling the organization, and formulating the specific way to control and support the organization.
4. Obtaining the consensus of the concerned industrial associations with respect to the way for the industry to support the operation continuously, and formulating the specific way of support.
5. Determining the financial plan of the operation organization focusing on the specific measures to ensure the self-liquidity of the operation, and to compensate the shortage of operational costs in case the self-liquidation is found difficult.

6. Formulating the plan to ensure the required number of qualified staffs, and the measures to avoid the job-hopping of these staffs with specific way to secure the adequate budgeting for this purpose.

c) Basic design study

The basic design study will formulate the optimum program through examination of feasibility of the program itself, and formulation and examination of alternative implementation plans. The following points are necessary to be clarified by the basic design study:

1. Basic design
2. Required investment cost
3. Feasibility of the program from the economic and technical points of view
4. Financial plan
5. Operational setup

d) Equipment and materials specifications study

The adequate equipment and materials are selected and the following points are clarified in the specifications study:

1. System and layout of the facilities and equipment
2. Specifications and required number of the individual equipment and materials
3. Cost estimation
4. Specific procedures, etc. of delivery and installation of the equipment and materials
5. Maintenance system

e) Preparatory work for procurement of equipment and materials

f) Procurement of equipment and materials, and construction work control

- 2) Preparatory actions for the programs which involve the establishment of new organization or revision of the existing law system

The points to be taken into account in organizational setup, and execution procedure in implementing the programs are described in the respective part of the programs in Chapter 5.

- 3) Preparatory activities for the programs which are expected to be implemented under the supervision of the government offices other than BPS

Of the sub-programs contained in this program, those which are directly related to the standardization and quality control improvement are expected to be implemented by BPS as the core body for the implementation, or under the supervision of BPS. However, other programs related to technical support, investment support, and facilities support, have many relevant government offices and industrial associations. The core agencies to implement these programs are not necessarily agreed upon among them. Many programs similar to these have been implemented in the past, and some were effective. The executing bodies, however, have varied time to time even for the programs of similar nature, and the implementation has often been sporadic and non-systematic with insufficient continuous effects on development. These programs have a nature of easy to obtain the assistance from the technical assistance organizations, and fairly easy to be implemented; as a result, there is a risk to fail to make best use of the valuable programs without tapping their efforts sufficiently. Therefore, the establishment of adequate implementation plan and executing organizations, details of which are given in Chapter 5, is quite essential for the programs to be implemented at appropriate time and effectively.

(3) Implementation Plan

- 1) Implementation plan with assumption for the total program to be implemented in sequence

Figure 6-1-1 gives the timing of implementation start by individual program, assuming the total program to be implemented in sequence, and taking into account the time sequence among each program and the required time from implementation start through completion or operation. This implementation program assumes that the starting time of total program implementation is the starting time to formulate Basic Standardization Plan of Standardization and starting time of preparatory activities for construction of Central Testing Laboratory. The implementation program also assumes that the financial arrangement will be implemented without delay.

The basic philosophy employed in formulating the Implementation Plan for the Program is as follows:

1. Many programs assumes completion of testing and inspection laboratory as the basis of their implementation. If the construction work of Central Testing Laboratory, which is estimated to take time compared with implementation of other programs, is assumed to be started immediately, the completion of construction work is scheduled to be the end of the second year of implementation, and the commencement of operation will be middle of the third year. The starting time of construction work of Regional Testing Laboratory was set such that these laboratories will start operation at the same time as that of the Central Laboratory.

FIGURE 6-1-1 IMPLEMENTATION SCHEDULE (1)

I T E M	1st Year	2nd Year	3rd Year	4th Year	5th Year
<p>1. Improvement of the system to enhance quality consciousness in the industries and promote standardization</p> <p>1.1 Improvement and strengthening of the national standardization, and the system for quality regulation and administration</p> <p>(1) Strengthening of the planning and coordination function of BPS, and improvement of the Basic Plan of National Standardization</p> <p>1) Establishment of basic concept 2) Plan formulation and implementation (Short term) 3) Implementation (Mid term)</p> <p>(2) Training of factory assessors</p> <p>1) Training of leaders 2) Establishment of training course within BPS</p>					

Figure 6-1-1 IMPLEMENTATION SCHEDULE (2)

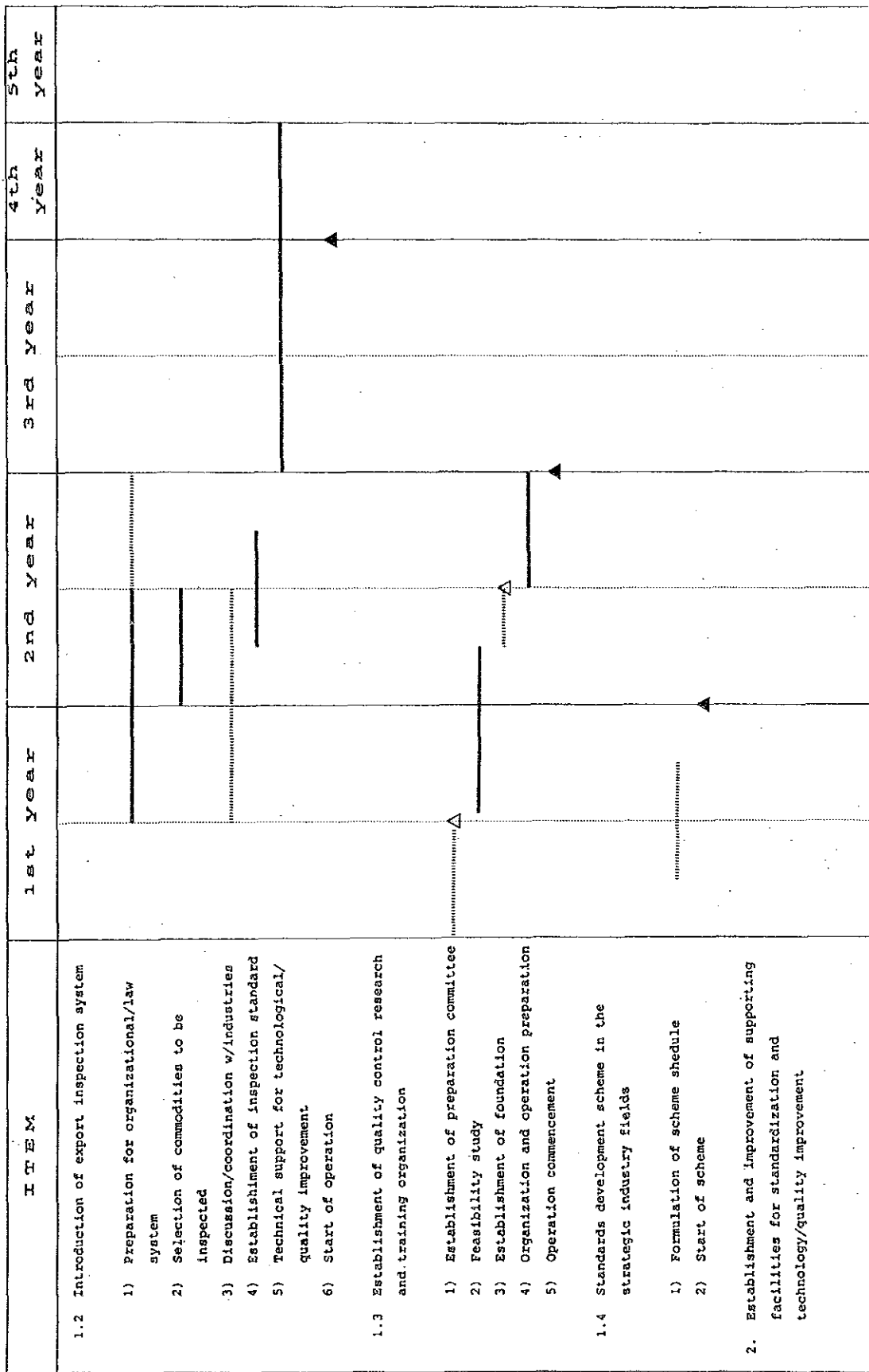


Figure 6-1-1 IMPLEMENTATION SCHEDULE (3)

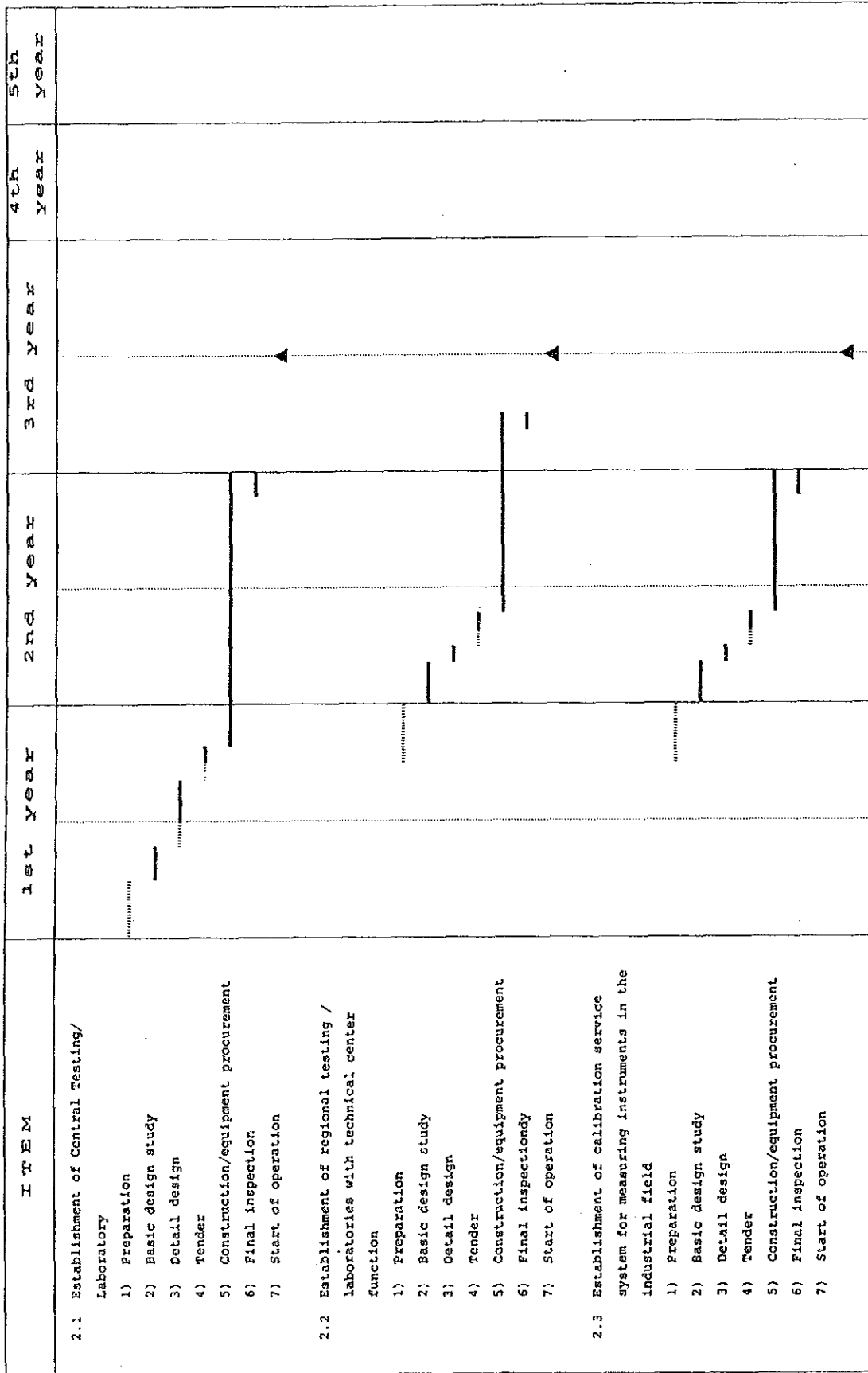


FIGURE 6-1-1-1 IMPLEMENTATION SCHEDULE (4)

I T E M	1st Year	2nd Year	3rd Year	4th Year	5th Year
<p>2.4 Strengthening and build-up the capability for R&D and technology extension services</p> <ol style="list-style-type: none"> 1) Establishment of execution body and detail plan formulation 2) Research study 3) Basic design study (1st lot) 4) Detail Design (-"-) 5) Construction / equipment procurement (-"-) 6) Organization setup (-"-) 7) Start of operation (-"-) 					
<p>3. Support of individual and/or joint investment on technology/quality improvement</p> <ol style="list-style-type: none"> 1) Basic concept formulation and feasibility study 2) Institutional preparation 3) Start of operation 					
<p>4. Technological support in technology/quality improvement</p> <ol style="list-style-type: none"> 1) Establishment of execution body 2) Program formulation 3) Operation 					

2. Before the total programs are set to work including establishment of testing laboratories, the basic policy direction of the standardization needs to be fixed first. In order for the Implementation Schedule assumed in the above to be materialized on time, the development of Basic Plan for the Standardization needs to be set to work immediately. The authorization of main direction in the Basic Plan for the Standardization is the minimum requirement in starting the work on total program.
3. The export inspection is desired to be implemented as soon as possible, especially on processed foods. The discussions have been started among such relevant agencies as BPS, BFAD, and FDC, etc. regarding the processed food export inspection. However, the testing and inspection facilities as well as manpower to support the system are not sufficient at the regional level for the implementation. The supporting system for the manufacturers to exert efforts on technological and quality improvement is also necessary to be developed. The operation of Export Inspection System is assumed to be started at the end of third year of program implementation in the proposed Implementation Schedule, taking into account the time required for such development. However, it is recommended to examine the way for the export inspection on the processed food to be started in advance separately from that of other export goods, if necessary. In such case, it would be possible to install the required equipment and facilities at the existing regional testing laboratories of DOST for the time being, and transferred to the Regional Testing Laboratories after the construction is completed.
4. The programs to support the technological and quality improvement should be implemented simultaneously. With respect to the establishment of the organization to be the center of promotion of quality control (referred as QMI in the program), actions to establish promotion committee should be started immediately together with the relevant associations and organizations, etc. The study is necessary to be started immediately also on the supporting program of individual and joint investment on quality improvement. The programs for supporting the quality improvement by technical guidance, and the programs for strengthening or development of the functions for technical guidance should be started according to the order of importance.

2) Implementation of the program with delay in the original plan

The implementation schedule presented in the foregoing section assumes that the total program will be set to work in line with the original program, and all the program components will be implemented without any obstacles in the implementation process. However, the actual implementation might be pushed back from the original schedule due to delay in:

1. ensuring the necessary fund,
2. ensuring the necessary staffs because of delay/difficulty in budgeting and/or fostering qualified engineers,
3. authorization for revision of the system, and establishment of new organization, etc., and
4. necessary budgeting, and resultant difficulty in operation cashflow, etc.

Even if such is the case, it is recommended to set to work as soon as possible, starting with the items possible to be set to work. Followings are the activities possible to set to work immediately without such problems, and at the same time, desirable to set to work as soon as possible to promote the total program:

1. Strengthening of the planning and coordination function of BPS, and improvement of the Basic Plan of National Standardization
2. Establishment of the Implementation Committee and its secretariat organization for execution of overall program, with function of prioritization of the program components, arrangement and coordination of implementation, and monitor of implementation progress.
3. Establishment of Promotion Committee for QMI, and commencement of preparatory and promotion activities for foundation of the institute. The preparatory and promotion activities can be started without its own building/offices, and are recommended to be set to work immediately even if it is difficult to ensure the building/offices.
4. Preparation activities for introduction of export inspection system. If the export inspection on food processing products is found urgently necessary to be implemented, it is recommended to examine the way to start the inspection utilizing the existing facilities and equipment. In such case, installation of minimum required facilities and equipment in the regions should be examined separately from the total system.
5. Establishment of regional committee for Regional Testing Laboratories by the organizations concerned in the respective regions, taking necessary actions for preparation and promotion including examination of the method to provide the necessary land, building, testing engineers, and operation organization, etc.

3) **Modification of original plan to ensure the implementation schedule**

The program components presented in the original program are the optimum ones after scrutinized from the possible alternatives. However, if there are any impediment factors for the planned schedule including difficulty in ensuring finance, and limitation of available funds, etc., it is recommended to examine the optimum programs under existence of such factors.

Supplementary Information 12 (Annex 1) shows the alternative plan to establish Central and Regional Testing Laboratories to utilizing the existing laboratories, compared with the original plan, which assumes new establishment. If all the required testing functions are installed, new establishment of the testing laboratories is the optimum ones. However, if the installation is limited to a part of the required functions under limited fund available, it is recommended to examine the way to implement it step by step utilizing the existing facilities and functions as presented in this supplementary information.

6-2 Implementation Organization

(1) Execution and Monitoring of Overall Program

The development and implementation of standards, or quality regulation and administration alone will not be effective for quality improvement as discussed in the Program. The incentive for the quality improvement is still weak for the small- and medium-scale businesses, which sell their products in the domestic market. In addition, the knowledge and technology for quality improvement are not sufficient for them. Thus, the support in technological aspects is indispensable for their quality improvement. Therefore, it is essential to implement all four programs in well coordinated manner for the standardization and quality improvement to be rooted deeply in the industries. For this purpose, the execution body is necessary to be established for promotion of overall program with monitoring the progress of implementation, and undertaking coordination among the relevant organization.

A number of relevant government organizations are involved in the administrative fields related to this program. The major ones are as follows:

1. Industrial standardization: BPS
2. Quality regulation and administration: BPS, BFAD
3. Testing and inspection: BPS, DOST
4. Promotion of quality control: BPS
5. Technical guidance and extension: BOI, Bureau of Small and Medium Business Development, Bureau of Export Trade Promotion, Department of Agriculture
6. Support for investment: BOI, Bureau of Small and Medium Business Development

In the technological guidance, the DOST is the organization in charge among others, in view of industrial technology development; however, DTI, especially BOI is recommended to play a main role from the standpoint of industrial development.

Therefore, it is proposed to formulate the secretariat organization for execution of overall programs by the members from BPS and BOI, and Implementation Committee consisting of the representatives from BPS, BOI, BSMBD, BETP, DOST, etc. headed by the Secretary of DTI. The Committee should specify the Implementation Plan and monitor progress of implementation from time to time.

(2) Implementation of Individual Programs

1) Implementation organization and its function

The implementation organization of individual programs with expected function in implementation was given in Chapter 5. The relationship between the relevant organization and implementation of individual programs is shown in Table 6-2-1.

2) Engagement of experts abroad in program implementation

The coordination and monitoring function for overall program implementation, and execution body of individual programs are already examined in the previous sections. In addition to these organizational setup for implementation, engagement of experts abroad is recommended in some speciality areas as the advisors, in order to study their similar experience abroad and transfer it to the Philippines.

The major recommended areas, estimated number of experts required, and duration of advisory service expected are as follows:

1. Advisor for development of basic plan of standardization and standardization system (for the expected terms of reference, see Supplementary Information 10 in Annex 1)

Organization in charge: BPS

Required number of experts: One

Duration of service: 3 years starting the beginning of 1990

Table 6-2-1 ORGANIZATION FOR IMPLEMENTATION

Program	Execution agency	Implementation Organization	DTI				Industries		Professionals
			BPS	BOI	BSMBD	BETP	DOST	PCCI	
1. Improvement of the system to enhance quality consciousness in the industries and promote standardization									
1.1 Improvement and strengthening of the national standardization, and the system for quality regulation and administration									
(1) Strengthening of the planning and coordination function of BPS, and improvement of the Basic Plan of National Standardization	BPS	Ad hoc project team within BPS	E/Team						
(2) Training of factory assessors	BPS	Inservice training institute	E						
1.2 Introduction of export inspection system	BPS/BETP	Working committee for introduction of the system	E/M	M	E/M		M	M	M
1.3 Establishment of quality control research and training organization.	BPS	Promotion committee for establishment of QMI	E				M		M
1.4 Standards development scheme in the strategic industry fields	BPS	BPS	E						
2. Establishment and improvement of supporting facilities for standardization and technology/quality improvement									
2.1 Establishment of Central Testing Laboratory	BPS	Advisory committee for establishment	E/M				M	M	M
		Ad hoc project team for preparation	M				M		
2.2 Establishment of regional testing laboratories with technical center function	BPS	Ad hoc project team for preparation	M				M		
2.3 Establishment of calibration service system for measuring instruments in the industrial field	BPS	Ad hoc project team for preparation	M				M		
2.4 Strengthening and build-up the capability for R&D and technology extension services	BOI/DOST	Steering committee	M	E/M	M	E/M			M
3. Support of individual and/or joint investment on technology/quality improvement									
(1) Support of individual investment	BOI/BSMBD	Steering committee	M	E/M	E/M	M			M
(2) Support of joint investment	BSMBD	Steering committee	M	M	E/M	M			M
4. Technological support in technology/quality improvement	BOI/DOST	Steering committee	M	E/M	M	E/M			M

Note: E - Execution agency, M - Member of implementation organization

2. Advisor for formulation of export inspection standards

Organization in charge: BPS/BEI

Required number of experts: One

Duration of service: 6 months from the middle of 1990

3. Advisors for establishment and operation of quality control research and training organization

Organization in charge: QMI

Required number of experts: Two

Duration of service: 2 years from 3 months before the commencement of operation of QMI

4. Experts for establishment program of Central Testing Laboratory and Metrological Calibration Service System

Organization in charge: BPS

Required number of experts and duration of services:

- 1) Advisor for establishment of testing and inspection system

Required number of experts: One

Duration of service: 1 year from 6 months before the commencement of operation

- 2) Experts for testing techniques guidance

Required number of experts: One each for electrical, mechanical, and chemical testing

Duration of service: 1. 1.5 years from 3 months before the commencement of operation
2. 6 months at testing area expansion

- 3) Expert for calibration techniques guidance

Required number of experts: One

Duration of service: 6 months from 3 months before the commencement of operation

In addition to the above, following areas are considered effective in engagement of expert(s) or consultant(s), if necessary:

1. Lecturers for specific areas of quality control
 2. Technical advisors for standard development in the electrical and mechanical fields
 3. Advisors for research studies to formulate the programs for strengthening the R&D and technical guidance function
 4. Lecturers of seminars and workshops for technological and quality improvement
 5. Technical advisors for technological and quality improvement schemes
- 3) Training programs required for implementation of the programs

The followings are the training programs required for implementation of the programs:

1. Training of quality control factory assessors and their trainers

Organization in charge: BPS

Trainee: Quality control factory assessors in BPS and relevant government organizations. The number of trainees should be determined later when the responsible area of each government organization is fixed.

In or abroad: Training of trainers is held abroad.

Other trainings are in the Philippines

Duration of training: One month for trainers

Two months for others

Curriculum: See Supplementary Information 2 in Annex 1.

2. Training of prime testing/inspection engineer for Central and Regional Testing Laboratories

Organization in charge: BPS

Trainee: Prime testing/inspection engineers of Central and Regional Testing Laboratories

In or abroad: Abroad

Duration of training: 1. 3 months from 9 months before the commencement of operation

2. 3 months from 6 months before commencement of operation

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ANNEX 1

**SUPPLEMENTARY INFORMATION ON NATIONAL
STANDARDIZATION AND QUALITY CONTROL IMPROVEMENT
PROGRAM**

Supplementary Information 1: Guideline for Strengthening Coordination Function of BPS in Standardization, and Development of Basic Plan of National Standardization

(1) Basic Work Assignment for BPS as the Secretariat of Standardization Development and Coordination

- 1) Matters pertaining to overall control of research, measurements, implementation guidance, and extension promotion regarding industrial standards
- 2) Matters pertaining to formulation and implementation of the Basic Plan for National Standardization including Long-term plan and annual implementation plan

3) Matters pertaining to the Standards Council

- Examples: - Convening of meetings
- Formulating of proposals
- Dissemination of the decisions of the Standards Council to the related organizations

4) Matters pertaining to coordination of the implementation of the Standards and Specifications among the Government and Governmental Organizations

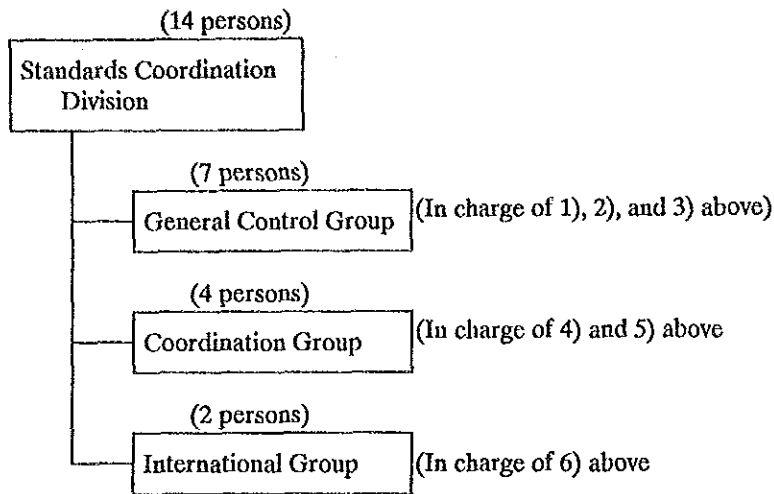
5) Matters pertaining to general business within the Secretariat's office

- Examples : - Formulation of the budget
- Preparation of the annual reports

6) Matters pertaining to communication and coordination with international organizations and foreign organizations relating to standards.

(2) Proposed Reorganization of BPS to Strengthen the Function of BPS as the Secretariat of Standard Development and Coordination

It is recommended to reorganize the BPS creating a new division for standardization coordination



(3) Proposed Contents of Basic Plan for standardization Development

1) The social and economic situation in the Philippines, and the basic direction of standardization policy

a) Changes in social and economic situation

1. Change in international conditions
2. Change in national economy
3. Change in social and living conditions

b) Basic direction of standardization policy

1. Role of standards as the basis of industry and technology
2. Harmonization of technology and living
3. Development of standardization with attaching importance to international relations

2) Task and thrusts of standardization

a) Major thrusts of standardization

1. Strengthening of international competitiveness for export promotion
2. Application of technological innovation especially in the field of electronics, data and information processing and precision machineries, etc.
3. Development and strengthening of industrial and technological basis
4. Harmonization of national standardization with international and foreign standards
5. Prevention of industrial pollution
6. Ensuring health and safety of consumers

b) Recommendation on procedure of standardization development

1. Selection of strategic area of standardization, and improvement of standard development efficiency
2. Increase in research work on standard development
3. Strengthening of organizational set-up for standardization including increasing cooperation among relevant government and private organizations
4. Dissemination of PNS
5. Collection of international and foreign standards, and provision of them to the public
6. Operational improvement of PS Certification Mark System

Supplementary Information 2: Sample of Training Curriculum for Staff Members of National Standardization Bodies to be Factory Assessors

A. General Matters

1. What is standardization? (6 hours)
 - Historical background
 - General characteristic
 - Aims
 - Levels

2. Organization and functioning of standardization at national level (6 hours)
 - Planning of standardization activities
 - Functioning of expert committees
 - Juridical questions

3. Organization and functioning of standardization at international level (6 hours)
 - ISO and IEC
 - Other industrial organizations
 - Regional standardization
 - Participation in committee meetings

4. Drafting standards (6 hours)
 - Titles
 - Terminology, symbols, signs
 - Dimensions and ratings
 - Performance and reliability characteristics
 - Designation
 - Marking
 - Packaging, transportation, storage
 - layout and language of standards

5. Basic standards (18 hours)
 - Preferred numbers
 - Unit of measurements

- Tolerances and fits
- Statistical methods
- Drawings
- Equations, signs and symbols
- Sampling inspection
- Others

6. Procedure for establishment of standards (12 hours)

- Justification and programme
- Drafts and committee meetings
- Consensus and reporting
- Publication of the draft, public comments and copyright
- Approval and publication
- Modification
- Influence of international and regional standards

7. Implementation of standards (3 hours)

- Government bodies
- Company standardization
- Legal considerations

8. Popularization of standards (3 hours)

- Publication and sales promotion
- Information services
- Public relations
- Campaign activities
- Award system

9. Information retrieval and organization of standards documentation (3 hours)

- Library services, documentation centers
- Standards catalogues
- Classification systems (UDC, etc.)

10. Certification (6 hours)

- What is certification?
- Its role in trade

- Voluntary and compulsory standards
- Its role in consumer protection
- Existing certification systems and their legal aspects (PS Mark)
- Which characteristics should be certified and how?

11. Calculation of economic effect (3 hours)

- Cost analysis method
- Cost of standardization
- Variety reduction
- Savings in design and storage
- Other savings

12. Quality control (6 hours)

- Contribution of standardization to quality control
- Cost of quality control and of rejects
- Introduction of statistical methods
- Performance and reliability characteristics to be standardized

13. Safety requirements in standards (6 hours)

- Safety against accidents
- Environmental requirements
- Ergonomical requirements
- Relationship between standardization and regulation

14. Company standardization (3 hours)

- Place and functions of standardization in a company
- Total quality control activities
- Forecast and verification of all results of standardization
- Company standards (classification, coding, numbering, etc.)

15. Consumer questions (6 hours)

- Consumer interests and organizations
- Standardization as means of help to consumers
- Marks of conformity
- Informative labeling
- Comparative testing

16. Other topics on standardization (3 hours)

- Standardization and data processing
- Modern means used in standardization (network planning and value analysis)

B. Specific Matters

1. What is factory assessment? (3 hours)

- System and procedure of certification system
- Legal background
- Effect resulted from becoming PS Licensed Factory

2. Factory assessment (methodology) (6 hours)

- Evaluation of applications
 - . Application form
 - . Documents to be attached
- Factory assessment
 - . Assessment items and their criteria
 - . (Factory assessment manual)
- Product evaluation
 - . Sampling
 - . Measuring equipment and instruments
- Follow-up assessment

3. Report making (3 hours)

4. Other requirements (3 hours)

- Attitude as a factory assessor
- Penalties against injustice

C. On-site training with senior assessor (5 items)

Supplementary Information 3: Examination of Operation of the Export Inspection System

(1) Assumed conditions of the operation evaluation

The assumptions used in the evaluation are as follow:

- a) the implementation organizations in this estimate is only that in charge of the inspection of the assumed products.
- b) the project life was assumed 10 years which is the depreciation period set by law of the testing facilities and equipment.

(2) Outline of the assumed operation plan

1) Major revenue

The assumed object products to be inspected are speakers, tableware including spoon and fork, and wood toys. For the inspection standard for the speakers is shown in Supplementary Information 4, as an example.

The export inspection is assumed to be undertaken by the following lot, and the inspection is made one time for one lot.

Speaker	10,000 pieces/lot
Tableware	5,000 pieces/lot
Wood toys	1,000 pieces/lot

The number of inspection items is fewer than that conducted in testing laboratories due to the time limitation. The number of inspection items is assumed 10 on the average.

The inspection fee rate is assumed 1,400 pesos/lot on the basis of the actual fee rate in 1988, which was 140 pesos/items on the average.

2) Major cost items

The building necessary for the operation of the Export Inspection System is assumed to use one of the existing government building. Therefore, no building cost, neither the construction cost nor the rental cost, is included in the estimation.

The number of inspector required was estimated only for the above three products, as

follows:

Speaker	3 persons
Tableware	2 persons
Woodtoys	1 person

The facilities and equipment required for the inspection is shown in Table A1-3-1.

The other operation costs such as utility cost, maintenance cost, and spare parts cost were estimated based on the assumptions described in Supplement Information 11.

(3) Estimate results

The estimated results are shown in Table A1-3-2.

Table A1-3-1 EQUIPMENT LIST FOR EXPORT INSPECTION

Name	Quantity
1 Cone speaker	
Insulation resistance meter	2 set
Dielectric resistance tester	1 set
Sound level meter	2 set
Precision wheatstone bridge	1
Anechoic room	1
Temp./humi. chamber	1
Micrometer	1 set
Vernier Caliper	1 set
Others	1 set
2 Tablewear	
Profile projector	1
Micrometer	1 set
Vernier Caliper	1 set
Balance	2
Tensile testing machine	1
Chemical analyzer	1 set
X-ray spectrophotometer	1
Others	1 set
3 Toy, wooden	
Drop test apparatus	1
Vibration test apparatus	1
Scratch test apparatus	1
Micrometer	1 set
Vernier Caliper	1 set
Others	1 set

Note : These equipment are proposed on the basis of the requirement of the technical standards for the legal export inspection in Japan.

Table A1-3-2(1) Initial Investment Requirement
:Export Inspection System

(Unit: '000 Japanese Yen)

	Export Inspection System
Buildings and civil Works	0.0
Interior works	0.0
Testing equipment	135.7
Engineering & Management Expenses	40.7
<hr/>	
Total	176.4

Table A1-3-2(2) PROJECTED CASHFLOW OF OPERATION : INTRODUCTION OF EXPORT INSPECTION

(Unit: '000 Japanese Yen)

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003-6
A. Total Cash Inflow	176482	10673	13116	16217	20078	20070	20070	20070	20070	20070	20070	0	0
1. Current Liabilities*1	176482	79	4	6	7	0	0	0	0	0	0	0	0
2. Service Charger/Fees	0	10594	13111	16211	20070	20070	20070	20070	20070	20070	20070	0	0
B. Total Cash Outflow	176482	31443	29959	29059	28198	27066	26007	24949	23890	22831	21773	-674	0
1. Total Assets*2	176432	590	48	59	74	0	0	0	0	0	0	-771	0
2. Operation Costs	0	2624	2740	2888	3071	3071	3071	3071	3071	3071	3071	0	0
a. Supplies (1)	0	324	401	496	613	613	613	613	613	613	613	0	0
b. Supplies (2)	0	0	0	0	0	0	0	0	0	0	0	0	0
c. Utilities	185	224	277	277	343	343	343	343	343	343	343	0	0
d. Labor	912	912	912	912	912	912	912	912	912	912	912	0	0
e. Repair/Maintenance	68	68	68	68	68	68	68	68	68	68	68	0	0
f. Spare Parts	407	407	407	407	407	407	407	407	407	407	407	0	0
g. Admin. Overheads	727	727	727	727	727	727	727	727	727	727	727	0	0
3. Interest	0	10585	9527	8468	7410	6351	5292	4234	3175	2117	1058	0	0
4. Repayment	0	17643	17643	17643	17643	17643	17643	17643	17643	17643	17643	97	0
C. A-B	0	-20770	-16843	-12842	-8120	-6996	-5937	-4879	-3820	-2761	-1703	674	0
(Depreciation)		21714	21714	21714	21714	21714	13571	13571	13571	13571	13571		

Notes: *1 The Figures show current liabilities and accounts payable from 1991 onwards.

*2 The Figures show current assets, accounts receivable, and inventory of supplies and spare parts from 1991 onwards.

Supplementary Information 4: Example of Export Inspection Standards for Speakers

(1) Quality

1) Appearance

Good finish, no rust, no flaws, no defects in coating, plating and adhesion, no slackening or other defects.

2) Performance

a) Insulation resistance

This was measured with a 500 V DC insulation resistance tester. The insulation resistance between the coil terminal and the exposed metal part to be 20 MΩ or more.

b) Dielectric strength

There is no irregularity in any part, when 1,000 V AC is applied for 1 minute between the coil terminal and the exposed metal part.

c) Operation

There is no irregularity in volume, tone or other operations when the speaker is operated at rated input.

d) Direct current resistance

For speakers that have field coils, the r_2 value calculated by the following formula should be within $\pm 10\%$ of the indicated value:

$$r_2 = r_1 * (294.5 / (234.5 + t))$$

where : r_2 = resistance of the field coil at 60°C (Ω)

r_1 = resistance of the field coil at t°C (Ω)

t = room temperature of the inspection room (°C)

e) Minimum resonance frequency

Each of the measured values of the minimum resonance frequency should be within $\pm 20\%$ of their average value.

f) Impedance

The measured values of impedance should be within $\pm 20\%$ of the indicated value.

g) Output sound pressure level

When the sound pressure is measured in an anechoic room, fitting the speaker to a standard box, the values should be no less than the prescribed value. (The prescribed value is, for example, 78dB or 87dB which varies with the type and size of the speaker.)

h) Frequency characteristics

When the output sound pressure level is measured at a certain frequency range, the average sound pressure level should be 10dB or more than the minimum sound pressure level.

i) Continuous operation

When operated continuously for 5 hours at rated input, there should be no irregularity in any part. Also, the temperature rise when the temperature became constant with the current indicated on the field coil should be no higher than 60°C .

j) Moisture resistance

When the speaker is placed for 16 hours under conditions of temperature of $38 - 42^{\circ}\text{C}$ and humidity of 90 - 95% and then left for 1 hour under normal temperature, there should be no irregularity in any part and the insulation resistance should be no less than $2\text{ M}\Omega$

k) Heat resistance

When placed under temperature of $68 - 72^{\circ}\text{C}$ for 2 hours and then left at normal temperature for 1 hour, there should no irregularity in any part.

3) Labeling

The following information must be labeled accurately, clearly and non-erasably.

- a) Rated input
- b) Rated impedance
- c) DC resistance of field coil
- d) Current used in field coil
- e) Rated frequency band

(2) Sampling method and criteria of judgment

Omitted. (The sampling method and the criteria of judgment are decided with reference to MIL, etc.)

**Supplementary Information 5: Financial Examination of Establishment and Operation of the
Quality Control Research and Training Organization - Tentatively
Named as Quality Management Institute (QMI)**

(1) Assumed conditions for operation evaluation

The major assumptions used are as follows:

- a) the organization is the non-profit making research foundation.
- b) 15 years were used as the project life.

As the alternative cases, followings were examined:

- a) new building construction
- b) building to lent with renewal of interior furnishing

(2) Outline of the facility

The major facilities assumed to be included are as follows:

	Capacity (person)	m ² /room	number of room	total m ²
Conference room	250	375	x 1	= 375
Lecture room	100	200	x 2	= 400
Lecture room	60	120	x 2	= 240
Lecture room	40	80	x 3	= 240
Seminar room	20	40	x 15	= 600
Computer training	60	80	x 1	= 80
Computer training	20	40	x 1	= 40
Canteen	200	300	x 1	= 300
Canteen	100	150	x 1	= 150
Other areas				1,171
Total				3,636

(3) Main Revenue and Cost Items

The operation of invites companies on voluntary basis and these companies are registered as member. The joining fee made by each company in joining the QMI is

are funded by annual membership fee and revenue from other business.

Joining Fee : 6,000 pesos/company

Annual Membership Fee: 3,000 pesos/company

The revenue is composed of profits from seminars, lectures, workshops and symposium, as shown in Table A1-5-1.

Manpower schedule is indicated in Table A1-5-2. Attendance ratio of seminars and symposiums to the planned attendants is assumed to increase in line with change in number of projected licensed factory and to be up to 70 percent.

The number of participating companies is assumed to be 10 percent of the total number of licensed factory in respective year.

The number of new memberships is shown by the difference between the number of licensed factories in the previous year and that in that year.

(3) Other Operating Costs

Utility costs, maintenance and repair costs and spare costs are assumed in the same manner as shown in supplementary information 11. The rental charge per 1 sq. m. in Metro Manila is 325 pesos per sq. m..

(4) Result of Financial Evaluation

The results of the financial evaluation are shown in Table A1-5-3 (1)-(2).

Table A1-5-1 Revenue Items: Seminar Course

Name of Seminar Course	Seminars to be held (times p.a.)	Planned Attendants (Persons)	Training Charge (peso/prn)
For Top Management			
TQC Top Seminar	2	60	3500
QC Circle Top Seminar	2	60	600
For Middle Management			
TQC for Middle Management	2	60	700
Quality Assurance	1	60	600
For Staff			
QC Basic Course	2	100	1800
QC Beginners Course	10	250	500
Experimental Design	2	40	900
TQC Promcter Course	6	100	650
Quality Function Deployment	3	40	500
For Foremen/Leaders			
Foremen Basic Course	3	100	600
Leaders Basic Course	4	100	500
For QC Circle			
QC Circle Leaders Course	6	100	500
QC Circle Promoters Course	3	100	600
QC Circle Beginners Course	10	250	500
For Other Purposes			
FMEA and FTA Course	3	40	500
Design Review	3	40	500
QC Symposium	1	100	5000
QC/Standardization Convention	1	250	5700
QC Circle Convention	6	250	900

Table A1-5-2 Manpower Schedule and labor cost (Unit: '000 peso)

Position	Managing Director	Mngrs./ Director	Sec. Prof.	Sub- Total (A)	Chief	Staff	Sub- Total (B)	Total	
Management	1	3		4	8			8	
General Affairs			1	1	2		4	6	
Accounting			1	1	2		4	6	
Planning & Admin.			1	1	2			2	
Planning						1	5	6	
Public Relations						1	5	6	
Int'l Affairs						1	5	6	
Training			1	1	2			2	
TQC						1	5	6	
SQC						1	5	6	
QC Circle						1	5	6	
QC Extension						1	5	6	
Publications			1	1	2			2	
Manuals/Texts						1	3	9	
Magazines						1	8	9	
Information Service			1	1	2			2	
Domestic						1	5	6	
Overseas						1	5	6	
Dissemination						1	5	6	
I/S Research			1	1	2		2	4	
QC Research			1	1	2		2	4	
Total	1	3	8	12		12	78	114	
Annual Salary	80	180	320	180	760	276	1404	1680	2440

Table A1-5-3 Initial Investment Requirement
:Quality Management Institute

(Unit: '000 Japanese Yen)

Table No.	A1-5-3(1)	A1-5-3(2)
	Case 1: New Building	Case 2: Rented Building
Buildings and civil Works	384.5	72.1
Interior works	13.7	13.7
Training equipment	103.2	103.2
Engineering & Management Expenses	61.7	61.7
Total	563.1	250.7

Table AI-5-3(1) PROJECTED CASHFLOW OF OPERATION : QUALITY MANAGEMENT INSTITUTE
CASE 1 : NEW BUILDING

(Unit: '000 Japanese Yen)

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
A. Total Cash Inflow	563132	74082	50542	54878	59386	56508	56508	56508	56508	56508	56508	56508	56508	56508	56508	56508
1. Current Liabilities*1	563132	1630	2	2	2	0	0	0	0	0	0	0	0	0	0	0
2. Service Charger/Fees	0	72452	50540	54876	59384	56508	56508	56508	56508	56508	56508	56508	56508	56508	56508	56508
B. Total Cash Outflow	563132	81353	73587	73105	72625	72056	71520	70983	70447	69374	68301	68301	68301	67764	67228	66691
1. Total Assets*2	563132	7309	29	30	32	0	0	0	0	0	0	0	0	0	0	0
2. Operation Costs	0	57055	57106	57159	57214	57214	57214	57214	57214	57214	57214	57214	57214	57214	57214	57214
a. Supplies (1)	0	25931	25982	26035	26090	26090	26090	26090	26090	26090	26090	26090	26090	26090	26090	26090
b. Supplies (2)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
c. Utilities	1731	1731	1731	1731	1731	1731	1731	1731	1731	1731	1731	1731	1731	1731	1731	1731
d. Labor	11104	11104	11104	11104	11104	11104	11104	11104	11104	11104	11104	11104	11104	11104	11104	11104
e. Repair/Maintenance	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52
f. Spare Parts	309	309	309	309	309	309	309	309	309	309	309	309	309	309	309	309
g. Admin. Overheads	17926	17926	17926	17926	17926	17926	17926	17926	17926	17926	17926	17926	17926	17926	17926	17926
3. Interest	0	8046	7510	6974	6437	5901	5364	4828	4291	3755	3218	2682	2145	1609	1072	536
4. Repayment	0	8941	8941	8941	8941	8941	8941	8941	8941	8941	8941	8941	8941	8941	8941	8941
C. A-B	0	-7271	-23045	-18227	-13239	-15548	-15012	-14475	-13939	-13402	-12866	-12329	-11793	-11256	-10720	-10183
↓ (Depreciation)	41334	24030	24030	24030	24030	24030	11687	11687	11687	11687	11687	0	0	0	0	0

Notes: *1 The Figures show current liabilities and accounts payable from 1991 onwards.

*2 The Figures show current assets, accounts receivable, and inventory of supplies and spare parts from 1991 onwards.

Table A1-5-3(2) PROJECTED CASHFLOW OF OPERATION : QUALITY MANAGEMENT INSTITUTE
CASE 2 : BUILDING TO LET

(Unit: '000 Japanese Yen)

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
A. Total Cash Inflow	250690	77987	50542	54878	59386	56508	56508	56508	56508	56508	56508	56508	56508	56508	56508	56508
1. Current Liabilities*1	250690	5535	2	2	2	0	0	0	0	0	0	0	0	0	0	0
2. Service Charger/Fees	0	72452	50540	54876	59384	56508	56508	56508	56508	56508	56508	56508	56508	56508	56508	56508
B. Total Cash Outflow	250690	190704	167317	166835	166354	165786	165249	164713	164176	163640	163104	162567	162031	161494	160958	160421
1. Total Assets*2	250690	22931	29	30	32	0	0	0	0	0	0	0	0	0	0	0
2. Operation Costs	0	150785	150836	150889	150944	150944	150944	150944	150944	150944	150944	150944	150944	150944	150944	150944
a. Supplies (1)	25931	25932	26035	26035	26090	26090	26090	26090	26090	26090	26090	26090	26090	26090	26090	26090
b. Supplies (2)	93729	93729	93729	93729	93729	93729	93729	93729	93729	93729	93729	93729	93729	93729	93729	93729
c. Utilities	1731	1731	1731	1731	1731	1731	1731	1731	1731	1731	1731	1731	1731	1731	1731	1731
d. Labor	11104	11104	11104	11104	11104	11104	11104	11104	11104	11104	11104	11104	11104	11104	11104	11104
e. Repair/Maintenance	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52
f. Spare Parts	309	309	309	309	309	309	309	309	309	309	309	309	309	309	309	309
g. Admin. Overheads	17926	17926	17926	17926	17926	17926	17926	17926	17926	17926	17926	17926	17926	17926	17926	17926
3. Interest	0	8046	7510	6974	6437	5901	5364	4828	4291	3755	3218	2682	2145	1609	1072	536
4. Repayment	0	8941	8941	8941	8941	8941	8941	8941	8941	8941	8941	8941	8941	8941	8941	8941
C. A-B																
(Depreciation)		27274	24030	24030	24030	24030	24030	24030	24030	24030	24030	24030	24030	24030	24030	24030

Notes: *1 The Figures show current liabilities and accounts payable from 1991 onwards.

*2 The Figures show current assets, accounts receivable, and inventory of supplies and spare parts from 1991 onwards.

Supplementary Information 6 : Future Assignments for the Improvement of Standards in the Strategic Industrial Sectors

(1) Metal Working Sector

The industrial standards of the Philippines in the metalworking sector comprise PNS, SAO, PHILSA, PTRI and international and foreign standards adopted as PNS. The international and foreign standards comprise;

- American National Standards Institute (ANSI)
- American Society for Testing and Materials (ASTM)
- Australian Standards (AS)
- British Standards (BS)
- International Electrotechnical Commission (IEC)
- International Organization for Standardization (ISO)
- Japanese Industrial Standards (JIS)
- Underwriters' Laboratory (UL)

Depending on the customer, SAE, Industrial Fastener Institute, U.S.A. (IFI), Compressed Gas Association, U.S.A. (CGA), Department of Transportation, U.S.A. (DOT) are demanded.

PNS, SAO or foreign industrial standards adopted as PNS were established as standards of products that penetrated the national life. Particularly those connected to safety were designated as mandatory standards. Also, a number of product standards and testing and inspection standards of foreign countries has been adopted to respond to the foreign firms that entered the country or to respond to exports.

The posture of the domestic firms of the Philippines is roughly divided into two types. The firms that serve the domestic market are relatively responsive to mandatory standards. But with respect to voluntary standards, only a part of the excellent firms have any consciousness to adhere strictly to the standards, and most of the cottage industry have a weak consciousness. The export-oriented firms or the firms that have to deal with the foreign firms that entered the Philippines are well versed in the foreign standards or the international standards which are demanding and have a high consciousness in observing the standards.

The standards for metalworks including the overseas standards are well established in the sense of standards currently needed. But the standards for metalworks also need to be internationalized as the metalworks of the Philippines will also be pressed to be export-oriented as in the other ASEAN nations. In this case, the basic standards need to be

established first in the metalworking field. The establishment of standards for metal materials, machine elements, tolerance of size, surface roughness, etc. are particularly necessary.

It is considered that the establishment of standards for common steel, steel alloys, cast steel and cast iron, forged steel, raw materials (pig iron, ferro alloy, scrap iron, etc.), silica sand for casting molds, mountain sand for casting molds, etc. in the field of iron and steel and for aluminum alloys, zinc alloys, copper alloys, etc. and their materials, ingots, secondary alloy ingots, scrap alloys, etc. in the field of non-ferrous metals need to be accelerated.

As metalworking-related standards in addition to the above, there are standards for machine elements such as gears, springs, rolling bearings, screws, etc. and standards for tolerance of size of metalworks of casting, forging, pressing, machining, etc. which need to be established.

(2) Garment Manufacturing Sector

There are already 65 PNS standards established to date related to textiles and garments, which account for approximately 10 per cent of the approximately 700 PNS standards. Of this number, the standards PTRI established are 93. As the "textile L" standards of JIS number approximately 250 (approximately 3% of the total JIS standards), the rate of standardization in this field may be said to be more advanced than the other fields. The fields that require standardization are sizing-related (materials, formulations, methods of testing) and "synthetic fibers and their products" (methods of testing).

(3) Furniture and Woodworking Sector

The PNS standards that have been established are only 21 standards, many of which are related to raw wood and lumber. In Japan there are both the JIS and the Japan Agriculture and Forestry Standards that cover this field, and there are established approximately 320 standards even excluding the pulp-related standards. The fields that require standardization hereafter are "wood preservation" (preservatives, methods of testing), "coatings"-related (material, formulation, testing methods), and "wood products"-related (standards for each type of product). Particularly for "wood products" (there are 72 JIS standards established), the standardization of wooden boxes, cases, crates, flat pallets and other items for export packing are also needed from the viewpoint of export promotion.

In furniture, methods of testing of the state of the dryness of wood, methods to test the state of finish or products, and methods of testing for wrapping and packing materials are considered to be necessary.

(4) **Plastics Processing Sector**

The basic items that require to establishment of standards in the plastics processing sector are the following:

- 1) **Methods of testing**
 - a) **General tests**
 - b) **Fiber reinforced plastics**
 - c) **Expandable plastics**
 - d) **Dimensions**
- 2) **Standards by uses**
 - a) **Branch**
 - b) **Foam**
 - c) **Daily goods (including food sanitation standards)**
 - d) **Standards of handling**
 - e) **Films**

(5) **Packaging Materials Sector**

The basic items that require the establishment of standards in the packaging materials sector are the following:

- 1) **Specification materials standards and the methods of testing**
 - a) **Paper, corrugated boards**
 - b) **Plastics**
 - c) **Wood, metals**
 - d) **Rust preventives**
 - e) **Adhesives, packaging tapes**
- 2) **Standards and methods of evaluation of packaged cargo**
 - a) **Vibration (Vertical, Horizontal)**
 - b) **Drop**
 - c) **Incline impact**
 - d) **Falling-down of container and contents**
 - e) **Moisture permeability, moisture resistance, pressure resistance, sealing property**

- f) Dew condensation
- 3) Standards pertaining to labeling
- a) Instructions for handling
 - b) Labeling of hazardous matters

**Supplementary Information 7: Financial Examination of the Establishment and Operation of
Central and Regional Testing Laboratories**

(1) Operation Planning

Major revenue of testing laboratories is composed of income from testing service, income from technical consultation and income calibration service. The scope of operation is classified largely into mechanical related products, chemical related products and electrical related products.

(2) Computing of Total Revenue

A total amount of revenue is computed on the basis of the following formula.

Revenue by testing service

= Projected no. of testing services

× Average testing items/testing service

× Average testing fee

Revenue by technical consultation

= Projected no. of technical consultation

× Average testing fee

Revenue by calibration service

= Projected no. of testing services

× Average calibration fee

(3) Projected Number of Services

Various industrial sectors in Philippines are classified into three categories; mechanical, chemical and electrical fields.

As shown below, mechanical related products include metal products, construction materials, consumer products and automobile parts, although chemical related products contain chemical products, processed food, extinguishing articles and safety match.

Mechanical: Textile, wearing apparel, leather, footwear, wood, furniture, paper, printing, furniture/metal, other manufacturing

Chemical: Food, beverage, tobacco, industrial chemicals, petroleum, refinery, petroleum &

coal, rubber, plastics, pottery, glass, cement, non-metallic mineral products, other chemical.

Electrical: Electrical machinery apparatus, professional and scientific

1) Projected number of licensed companies

According to the projected industrial production based on the actual performance in 1979-86, a number of factories by company size is projected. A number of licensed companies is multiplied a projected number of companies in the respective year by a composition ratio of licensed companies to the total.

2) Projection of Demand for Testing Services

Demand for testing service is projected by the following formula.

A total number of testing services
= Testing for Accreditation
+ Spot testing in factory and market
+ Import assessment

To compute the projected number of testing for certification, annual average change in increase of testing in 1986-88 is applied.

Spot testing in factory is added a total number of licensed factories and applicant-factories in 1988 by annual average change in increase of testing. Spot testing in market is projected in the same way as spot testing in factory.

Testing under Import Commodity Clearance is added an actual performance of testing service by annual average change in its increase (on an actual performance basis). Although safety match is classified into chemical related products, the number of testing services for this product is approximate 50 percent of the total. Apart from other chemical related products, the future demand for testing for safety match is assumed to increase by 3 percent p.a.

3) Projection of Demand for BPS Testing Services

A number of testing services by BPS occupies 86.4 percent in average to the total in 1986-88. Although the testing capacity of existing accredited testing laboratories is not sufficient in response to the future demand, the projection of BPS testing services is computed by the composition ratio, 86.4 percent on the ground that the testing capability

of existing testing laboratories will expand in line with the increase of demand in the future.

4) Projection of Demand for Calibration Services

The market for calibration services is assumed to consist of licensed factories. The demand for calibration services in 1988 is assumed to be 10 percent of the total. Twenty (20) percent is applied as average annual change in increase to the the projection of calibration services in the consideration of the following assumptions.

a) Each licensed factory has many measuring equipments and the demand for calibration services is expected to increase in a multiplied way.

b) Factories which is not licensed may create the extra demand for calibration services.

5) Projection of Regional Demand for These Services

The regional demand for these services is projected on the base of the following composition ratio of industrial structure by region. General speaking, as the industrial infrastructure becomes accumulated, the industrial development will be accelated. Therefore, the industrial structure is assumed not to change in the medium term and the following composition ratios are applied to the regional demand projection .

Industrial Structure (%) by Regions

	Metro Metro	Cebu	CDO	Davao
Industry Total	61.4	17.7	6.9	14.0
Mechanical	60.5	11.0	10.0	18.5
Chemical	50.0	29.1	6.4	14.5
Electrical	98.6	1.4	0.0	0.0

(4) Average Testing Items of Testing Services

The testing items specified in each compulsory standard in mechanical, electrical and chemical fields are counted, and the average testing items per one testing servise by each field is assumed as shown below.

Mechanical	19 items/testing service
Chemical	23 items/testing service
Safety match	6 items/testing service

Electrical

30 items/testing service

(5) Average Fees of Each Service

Revenue is composed of the following fees.

1) Testing fees

Testing is assumed to be 140 pesos/testing items. According to the financial statement of NSTL, 1988, the annual revenue from testing analysis services is 1,504,169 pesos, although the total number of testing items is 10,772 items per annual. Therefore, the average testing fee per one testing item is computed to be 140 pesos.

2) Technical Consulting Fee

Fee for technical consulting service mainly consists of labor costs, and is assumed to be equivalent to 300 percent of labor cost. The number of working days per annual is 250 days. Technical consulting service takes average 3 days. The fee is computed to be 800 pesos per annual on the above-mentioned conditions.

Average annual salary of Technical consultant 23,000 pesos

3) Calibration Fee

Calibration fee is assumed to be 130 pesos/calibration. According to the financial statement of NSTL, 1988, the annual revenue from calibration services is 304,032 pesos, although the total number of testing items is 2,629 items per annual. Therefore, the average testing fee per one testing item is computed to be 130 pesos.

(6) Average Cost of Supplies

The annual revenue of testing analysis service was 1,504,169 pesos, although supplies including chemical was 300,000 according to the financial statement of NSTL, 1988. Therefore, the average cost of testing analysis services is assumed to be 20 percent of the annual revenue.

The expenses of technical consulting service is assumed to be 100 pesos which includes transport expenses, since the technical consulting fee consists mainly of labor costs.

A large portion of cost for calibration service is used for maintaining the calibration facilities. In this case, the cost of calibration service is assumed to be 40 pesos.

(7) Testing and Measuring Facilities

Lists o testing and measuring facilities by region are shown in table A1-7-1 (1)-(7), Table A1-7-2 (1)-(4) and Table A1-7-3 (1)-(4).

(8) Results of Financial Evaluation

The results of financial evaluation are shown in Table A1-7-4 (1)-(8) and Table A1-7-5 (1)-(3).

Table A1-7-1

EQUIPMENT LIST OF CENTRAL TESTING LABORATORY (1)

Name	Quantity
1. Testing Equipment	
1-1 Mechanical	
• Dimension	
Long tape	1 set
Ruler	1 set
Caliper	1 set
Micrometer	1 set
Thread gauge	1 set
Profile projector	1 set
Others	1 set
• Balance	
Balance	1 set
Balance table	1 set
• Tensile property	
Autograph	1 set
Universal Testing Machine	1 set
Schopper tensile testing equipment	1
Others	1 set
• Impact	
Pendulum impact tester	1
Others	1 set
• Hardness	
Hardness tester (Vickers)	1
Others	1 set
• Compression	
Hydraulic tester	1
Others	1 set
• Torsion	
Torque meter	1 set
Others	1 set
• Vibration	
Vibration tester	1
Others	1 set
• Friction	
Friction testing machine	1
Others	1 set
• Optical	
Light projection unit	1
Others	1 set
• Non destructive examination	
X-ray projector	1
Ultrasonic thickness meter	1
Others	1 set

EQUIPMENT LIST OF CENTRAL TESTING LABORATORY (2)

Name	Quantity
• Preparation	
Band saw	1
Mechanical sander	1
Vice	1
Jack	1
Others	1 set
• Thermal	
High temperature chamber	1
• Specific equipment	
High pressure water pump	1
Battery life tester	1
Boil test apparatus	1
Moisture meter	1
Water bath	1
Tire endurance testing machine	1
Others	1 set
1-2 Electrical	
• Basic equipment	
Watt-meter	1 set
Voltmeter	1 set
Ammeter	1 set
Digital multimeter	1 set
Insulation resistance meter	3
Digital power meter	1
Dielectric strength tester	5
Others	1 set
• Dimension	
Long tape	1 set
Ruler	1 set
Caliper	1 set
Micrometer	1 set
Digimatic indicator	1 set
Thickness gauge	1 set
Lampholder gauge	1
Starterholder gauge	1
Others	1 set
• Resistance	
Precision wheatstone bridge	3
Precision double bridge	1
Others	1 set
• Temperature measurement	
Digital thermometer	2
Hybrid recorder	3
Others	1 set

EQUIPMENT LIST OF CENTRAL TESTING LABORATORY (3)

Name	Quantity
• Thermal	
Temp/humi chamber	1 set
Temperature chamber	1 set
• Light	
Photometric integrated sphere	1
Photometric measuring system	1
Flux meter	1 set
Standard lamp of flux	3
Endurance test rack	1 set
Others	1 set
• Wave form	
Oscilloscope	2
Frequency meter	1 set
Others	1 set
• Power supply	
Voltage regulator	1 set
DC power supply source	1 set
Volt slider	1 set
Pulse generator	1 set
Others	1 set
• Endurance	
Life test rack	1
Endurance test apparatus	1 set
Switch endurance tester	1
Others	1 set
• Specific equipment	
Safety tool kit	1 set
Test corner	1
Ball pressure test apparatus	2
Glow wire test apparatus	1
Flame test hood	1
Impact test apparatus	1
Tumbling barrel	1
Artificial rain drop test apparatus	1
Dust chamber	1
Others	1 set
1-3 Chemical	
• Basic equipment	
Muffle furnace	2
Hot plate	2
Temperature oven	2
Water bath	1
pH meter	1
Others	1 set

EQUIPMENT LIST OF CENTRAL TESTING LABORATORY (4)

Name	Quantity
· Analysis equipment	
UV-VIS spectrophotometer	1
Tubidimeter	1
Karl Fischer titrating apparatus	1
Atomic absorption spectrophotometer	1
Others	1 set
· Physical testing	
Dimension measuring equipment	1 set
Balance	1 set
Balance table	1 set
Sharpy impact tester	1
Izot impact tester	1
Accelerated aging test apparatus	1
Others	1 set
· Facility	
Table center	6
Sink	5
Fume food	3
Storage cabinet	2
Glasswear	1 set
Others	1 set
2. Metrological equipment	
2-1 Length	
Standard scale	1 set
Comparator for scale	1
Gauge block	1 set
Electronic micrometer	1
Others	1 set
2-2 Mass	
Standard weight	1 set
Precision hand operated balance	1
Direct reading balance	1 set
Balance table	1 set
Others	1 set
2-3 Volume	
Standard flask	1 set
Standard pipette	1 set
Standard burette	1 set
Standard tank	1 set
Others	1 set
2-4 Force	
Standard proving ring	1 set
Load cell	1 set
Others	1 set

EQUIPMENT LIST OF CENTRAL TESTING LABORATORY (5)

Name	Quantity
2-5 Pressure	
Deadweight piston gauge	1 set
Liquid column pressure gauge	1 set
Others	1 set
2-6 Photometry	
Standard radient detector	1
Spectral radio meter	1 set
Flux meter	1 set
Photometric bench	1
Standard lamp	1 set
Others	1 set
2-7 Electrical	
• DC voltage and current measurement	
Standard cell	5
Voltage standard	1
Differential voltmeter	1
Others	1 set
• AC voltage and current measurement	
AC/DC comparator	1
AC standard voltage source	1
Others	1 set
• Resistance measurement	
Standard resistor	1 set
Oil bath	1
• Resistance calibration system	
D.C.C.B	1
Extender	1
Others	1 set
• High resistance calibration system	
High resistance measuring set	1
Resistance transfer standard	1 set
Others	1 set
• Variable resistor	
Variable resistor	1 set
• Electrical power measurement	
AC/DC power comparator	1
Measuring set for power meter power source	1
Digital power meter	1 set
Others	1 set
• Capacitance measurement	
Standard capacitor	1 set
Digital LCR meter	1
Others	1 set

EQUIPMENT LIST OF CENTRAL TESTING LABORATORY (6)

Name	Quantity
2-8 Temperature	
Comparative calibration equipment	1
Thermocouple/resistance auto calibration system	1 set
Saltpeter bath	1
Others	1 set
3. Office equipment	
3-1 Testing and calibration room	
Testing table	30
Working desk	35
Data cabinet	30
Tool locker	15
Blackboard	5
Shelf	15
Chair	55
3-2 Office room	
Desk	50
Chair	50
File cabinet	20
Locker	20
Shelf	10
Blackboard	2
Copying machine	1
Typewriter	1
Others	1 set
3-3 Testing/calibration staff room	
Desk	20
Chair	20
File cabinet	10
Shelf	10
Blackboard	2
3-4 Information service room	
Computer	1 set
Copying machine	1
Work table	5
Desk	3
Chair	3
Blackboard	1
Others	1 set
3-5 Director room	
Desk	1
Chair	1
Desk for secretary	1
Chair for secretary	1
Typewriter	1
Others	1 set

EQUIPMENT LIST OF CENTRAL TESTING LABORATORY (7)

Name	Quantity
3-6 Meeting room	
Table	10
Chair	21
3-7 Automobile	
Wagon for factory inspection	1
Wagon for calibration service	1
3-8 Others	
Test drainage treatment system	1
Power generator	1

Table A1-7-2

EQUIPMENT LIST FOR REGIONAL TESTING CENTER-CEBU (1)

Name	Quantity
1. Testing Equipment	
1-1 Mechanical	
• Dimension	
Long tape	1 set
Ruler	1 set
Caliper	1 set
Micrometer	1 set
Thread gauge	1 set
Profile projector	1 set
Others	1 set
• Balance	
Balance	1 set
Balance table	1
• Tensile property	
Autograph	1
Universal Testing Machine	1
Schopper tensile testing equipment	1
• Impact	
Pendulum impact tester	1
• Hardness	
Hardness tester (Vickers)	1
Others	1 set
• Compression	
Compression set apparatus	1
• Torsion	
Torque meter	1 set
Others	1 set
• Non destructive examination	
X-ray projector	1
• Preparation	
Band saw	1
Mechanical sander	1
Vice	1
Jack	1
Others	1 set
• Specific equipment	
Boil test apparatus	1
Moisture meter	1
Others	1 set

EQUIPMENT LIST FOR REGIONAL TESTING CENTER-CEBU (2)

Name	Quantity
1-2 Electrical	
• Basic equipment	
Watt-meter	1 set
Voltmeter	1 set
Ammeter	1 set
Digital multimeter	1 set
Insulation resistance meter	3
Digital power meter	1
Dielectric strength tester	5
Others	1 set
• Dimension	
Long tape	1
Caliper	1 set
Micrometer	1 set
Digimatic indicator	1
Thickness gauge	1
Others	1 set
• Resistance	
Precision wheatstone bridge	1
Precision double bridge	1
Others	1 set
• Temperature measurement	
Digital thermometer	2
Hybrid recorder	1
Others	1 set
• Thermal	
Temp/humi chamber	1
Temperature chamber	1 set
• Light	
Flux meter	1
Lux meter	1
• Wave form	
Oscilloscope	1
Frequency meter	1 set
Others	1 set
• Power supply	
Voltage regulator	1
DC power supply source	1 set
Volt slider	1
Others	1 set
• Specific equipment	
Safety tool kit	1 set
Ball pressure test apparatus	1
Flame test hood	1
Others	1 set

EQUIPMENT LIST FOR REGIONAL TESTING CENTER-CEBU (3)

Name	Quantity
1-3 Chemical	
• Basic equipment	
Muffle furnace	1
Hot plate	1
Temperature oven	1
Water bath	1
pH meter	1
Others	1 set
• Analysis equipment	
UV-VIS spectrophotometer	1
Turbidimeter	1
Karl Fischer titrating apparatus	1
Atomic absorption spectrophotometer	1
Others	1 set
• Physical testing	
Dimension measuring equipment	1 set
Balance	1 set
Balance table	2
Others	1 set
• Facility	
Table center	2
Sink	2
Fume food	2
Storage cabinet	2
Glasswear	1 set
Others	1 set
2. Office equipment	
2-1 Testing room	
Testing table	5
Working desk	5
Data cabinet	10
Tool locker	5
Blackboard	2
Shelf	5
Chair	10
2-2 Office room	
Desk	10
Chair	10
File cabinet	10
Locker	10
Shelf	5
Others	1 set
2-3 Seminar room	
Seminar table	10
Chair	20
Desk for lecturer	1
Chair for lecturer	1

EQUIPMENT LIST FOR REGIONAL TESTING CENTER-CEBU (4)

Name	Quantity
2-4 Computer room	
Computer	1 set
Copying machine	1
Work table	1
Desk	1
Chair	1
Blackboard	1
Others	1 set
2-5 Director room	
Desk	1
Chair	1
Others	1 set
2-6 Meeting room	
Table	5
Chair	11
2-7 Automobile	
Wagon for factory inspection	1
2-8 Audio Visual equipment	
OHP	1
Screen	1
Slide projector	1
2-9 Others	
Test drainage treatment system	1
Power generator	1

Table A1-7-3

EQUIPMENT LIST FOR REGIONAL TESTING CENTER-CDO/DAVAO (1)

Name	Quantity
1. Testing Equipment	
1-1 Mechanical	
• Dimension	
Long tape	1 set
Ruler	1 set
Caliper	1 set
Micrometer	1 set
Thread gauge	1 set
Profile projector	1 set
Others	1 set
• Balance	
Balance	1 set
Balance table	1
• Tensile property	
Autograph	1
Universal Testing Machine	1
Schopper tensile testing equipment	1
• Impact	
Pendulum impact tester	1
• Hardness	
Hardness tester(Vickers)	1
Others	1 set
• Compression	
Compression set apparatus	1
• Torsion	
Torque meter	1 set
Others	1 set
• Non destructive examination	
X-ray projector	1
• Preparation	
Band saw	1
Mechanical sander	1
Vice	1
Jack	1
Others	1 set
• Specific equipment	
Boil test apparatus	1
Moisture meter	1
Others	1 set

EQUIPMENT LIST FOR REGIONAL TESTING CENTER-CDO/DAVAO (2)

Name	Quantity
1-2 Electrical	
• Basic equipment	
Watt-meter	1 set
Voltmeter	1 set
Ammeter	1 set
Digital multimeter	1 set
Insulation resistance meter	3
Digital power meter	1
Dielectric strength tester	5
Others	1 set
• Dimension	
Long tape	1
Caliper	1 set
Micrometer	1 set
Digimatic indicator	1
Thickness gauge	1
Others	1 set
• Resistance	
Precision wheatstone bridge	1
Precision double bridge	1
Others	1 set
• Temperature measurement	
Digital thermometer	2
Hybrid recorder	1
Others	1 set
• Thermal	
Temp/humi chamber	1
Temperature chamber	1 set
• Light	
Flux meter	1
Lux meter	1
• Wave form	
Oscilloscope	1
Frequency meter	1 set
Others	1 set
• Power supply	
Voltage regulator	1
DC power supply source	1 set
Volt slider	1
Others	1 set
• Specific equipment	
Safety tool kit	1 set
Ball pressure test apparatus	1
Flame test hood	1
Others	1 set

EQUIPMENT LIST FOR REGIONAL TESTING CENTER-CDO/DAVAO (3)

Name	Quantity
1-3 Chemical	
• Basic equipment	
Muffle furnace	1
Hot plate	1
Temperature oven	1
Water bath	1
pH meter	1
Others	1 set
• Analysis equipment	
UV-VIS spectrophotometer	1
Tubidimeter	1
Karl Fischer titrating apparatus	1
Atomic absorption spectrophotometer	1
Others	1 set
• Physical testing	
Dimension measuring equipment	1 set
Balance	1 set
Balance table	1
Others	1 set
• Facility	
Table center	1
Sink	2
Fume food	1
Storage cabinet	1
Glasswear	1 set
Others	1 set
2. Office equipment	
2-1 Testing room	
Testing table	3
Working desk	3
Data cabinet	8
Tool locker	3
Blackboard	2
Shelf	3
Chair	3
2-2 Office room	
Desk	7
Chair	7
File cabinet	5
Locker	5
Shelf	2
Others	1 set
2-3 Seminar room	
Seminar table	10
Chair	20
Desk for lecturer	1
Chair for lecturer	1

EQUIPMENT LIST FOR REGIONAL TESTING CENTER-CDO/DAVAO (4)

Name	Quantity
2-4 Computer room	
Computer	1 set
Copying machine	1
Work table	1
Desk	1
Chair	1
Blackboard	1
Others	1 set
2-5 Director room	
Desk	1
Chair	1
Others	1 set
2-6 Meeting room	
Table	5
Chair	11
2-7 Automobile	
Wagon for factory inspection	1
2-8 Audio Visual equipment	
OHP	1
Screen	1
Slide projector	1
2-9 Others	
Test drainage treatment system	1
Power generator	1

Table A1-7-4 Initial Investment Requirement
:Central Testing Laboratory/Calibration Center/QMI

(Unit: '000 Japanese Yen)

Table No.	Case (1)			
	A1-7-4(1)	A1-7-4(2)	A1-7-4(3)	A1-7-4(4)
Buildings and civil Works	786.6	558.2	183.3	1171.1
Interior works	47.2	46.7	12.5	47.2
Testing equipment	2166.1	1663.9	502.2	2283.0
Engineering & Management Expenses	815.8	667.2	236.5	879.4
Total	3815.8	2936.0	934.5	4380.8

(Unit: '000 Japanese Yen)

Table No.	Case (2)			
	A1-7-4(5)	A1-7-4(6)	A1-7-4(7)	A1-7-4(8)
Buildings and civil Works	578.7	443.9	183.3	963.2
Interior works	41.8	41.8	11.0	41.8
Testing equipment	1153.9	847.3	306.6	1270.8
Engineering & Management Expenses	451.7	334.5	122.3	517.8
Total	2226.1	1667.5	623.2	2793.5

Table AI-7-4(1) PROJECTED CASHFLOW OF OPERATION : CENTRAL TESTING LABORATOR WITH TESTING AND CALIBRATION FACILITIES
(CASE 1)

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003-6
A. Total Cash Inflow	23597	3792185	86642	94100	102681	111641	120904	130533	140551	140524	140524	140524	0	0
1. Current Liabilities*1	23597	3792185	828	21	22	23	25	26	27	0	0	0	0	0
2. Service Charger/Fees	0	0	85814	94078	102658	111617	120879	130507	140524	140524	140524	140524	0	0
B. Total Cash Outflow	23597	3792185	509109	485025	467802	450604	433434	416289	399171	381161	363379	327815	-7239	0
1. Total Assets*2	23597	3703275	7006	177	186	195	205	215	227	0	0	0	-8215	0
2. Operation Costs	0	0	27915	28441	28992	29566	30169	30795	31448	31448	31448	31448	0	0
a. Supplies (1)			2664	2920	3185	3462	3748	4045	4353	4353	4353	4353		
b. Supplies (2)			93	111	134	160	192	231	277	277	277	277		
c. Utilities			2624	2875	3139	3419	3694	3985	4283	4283	4283	4283		
d. Labor			6755	6755	6755	6755	6755	6755	6755	6755	6755	6755		
e. Repair/Maintenance			1107	1107	1107	1107	1107	1107	1107	1107	1107	1107		
f. Spare Parts			6640	6640	6640	6640	6640	6640	6640	6640	6640	6640		
g. Admin. Overheads			8031	8031	8031	8031	8031	8031	8031	8031	8031	8031		
3. Interest	0	88910	177820	160038	142256	124474	106692	88910	71128	53346	35564	0	0	0
4. Repayment	0	0	296367	296367	296367	296367	296367	296367	296367	296367	296367	296367	975	0
C. A-B	0	0	0-422467	-390925	-365121	-338963	-312530	-285756	-258620	-240637	-222855	-187291	7239	0
(Depreciation)			419900	384503	384503	384503	384503	221335	221335	221335	221335	221335	221335	

Notes: *1 The Figures show current liabilities and accounts payable from 1990 onwards.

*2 The Figures show current assets, accounts receivable, and inventory of supplies and spare parts from 1990 onwards.

Table A1-7-4(2) PROJECTED CASHFLOW OF OPERATION : CENTRAL TESTING LABORATORY WITH TESTING FACILITIES ONLY
(CASE 1)

(Unit: '000 Japanese Yen)

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003-6
A. Total Cash Inflow	16743	2851281	86205	93733	102242	111115	120274	129777	139645	139622	139622	139622	0	0
1. Current Liabilities*1	16743	2851281	694	19	19	20	21	22	22	0	0	0	0	0
2. Service Charge/Fees	0	0	85511	93714	102223	111094	120253	129755	139622	139622	139622	139622	0	0
B. Total Cash Outflow	16743	2919237	392312	373465	360356	347267	334192	321143	308105	294318	280727	253544	-6133	0
1. Total Assets*2	16743	2851281	5879	163	169	176	181	188	195	0	0	0	-6953	0
2. Operation Costs	0	0	24000	24460	24937	25432	25942	26477	27024	27024	27024	27024	0	0
a. Supplies (1)			2664	2920	3185	3462	3748	4045	4353	4353	4353	4353		
b. Supplies (2)			0	0	0	0	0	0	0	0	0	0		
c. Utilities			2115	2320	2531	2749	2974	3212	3450	3450	3450	3450		
d. Labor			5889	5889	5889	5889	5889	5889	5889	5889	5889	5889		
e. Repair/Maintenance			855	855	855	855	855	855	855	855	855	855		
f. Spare Parts			5132	5132	5132	5132	5132	5132	5132	5132	5132	5132		
g. Admin. Overheads			7343	7343	7343	7343	7343	7343	7343	7343	7343	7343		
3. Interest	0	67956	135912	122321	108729	95138	81547	67956	54364	40773	27182	0	0	0
4. Repayment	0	0	226520	226520	226520	226520	226520	226520	226520	226520	226520	226520	820	0
C. A-B	0	-67956-306107	-279732-258114	-23918-191366	-168460-154696	-141105-113922	171056	171056	171056	171056	171056	171056	171056	0
(Depreciation)			329623	304505	304505	304505	304505	304505	304505	304505	304505	304505	171056	171056

Notes: *1 The Figures show current liabilities and accounts payable from 1990 onwards.

*2 The Figures show current assets, accounts receivable, and inventory of supplies and spare parts from 1990 onwards.

Table A1-7-4(3) PROJECTED CASHFLOW OF OPERATION : CALIBRATION CENTER
(CASE 1)

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003-6
A. Total Cash Inflow	5499	929002	1113	1100	1246	1418	1616	1841	2098	2092	2092	2092	0	0
1. Current Liabilities*1	5499	929002	149	3	3	4	5	5	6	0	0	0	0	0
2. Service Charger/Fees	0	0	963	1097	1242	1414	1611	1835	2092	2092	2092	2092	0	0
B. Total Cash Outflow	5499	929002	122368	116795	112603	108417	104251	100106	95984	91656	87365	78784	-1354	0
1. Total Assets*2	5499	907549	1877	16	19	22	26	31	37	0	0	0	-1332	0
2. Operation Costs	0	0	6573	6652	6748	6849	6970	7111	7274	7274	7274	7274	0	0
a. Supplies (1)			72	79	87	95	105	115	125	125	125	125	0	0
b. Supplies (2)			93	111	134	160	192	231	277	277	277	277	0	0
c. Utilities			396	449	515	581	661	753	859	859	859	859	0	0
d. Labor			1222	1222	1222	1222	1222	1222	1222	1222	1222	1222	0	0
e. Repair/Maintenance			257	257	257	257	257	257	257	257	257	257	0	0
f. Spare Parts			1544	1544	1544	1544	1544	1544	1544	1544	1544	1544	0	0
g. Admin. Overheads			2987	2987	2987	2987	2987	2987	2987	2987	2987	2987	0	0
3. Interest	0	21453	42906	38615	34325	30034	25743	21453	17162	12871	8581	0	0	0
4. Repayment	0	0	71510	71510	71510	71510	71510	71510	71510	71510	71510	71510	178	0
C. A-B	0	0	-121235	-115695	-111357	-106999	-102635	-98265	-93886	-89564	-85273	-76692	1354	0
(Depreciation)			107022	98774	98774	98774	98774	98774	98774	98774	98774	98774	51469	51469

Notes: *1 The Figures show current liabilities and accounts payable from 1990 onwards.

*2 The Figures show current assets, accounts receivable, and inventory of supplies and spare parts from 1990 onwards.

Table A1-7-4(4) PROJECTED CASHFLOW OF OPERATION : CENTRAL TESTING LABORATORY WITH TESTING AND CALIBRATION FACILITIES
AND QUALITY MANAGEMENT INSTITUTE
(CASE 1)

(Unit: '000 Japanese Yen)

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
A. Total Cash Inflow	23597	4357162	160787	144588	157506	170974	177347	186976	196994	196967	196967	196967	196967	196967	196967	196967	196967
1. Current Liabilities*1	23597	4357162	2587	35	37	39	26	26	27	0	0	0	0	0	0	0	0
2. Service Charger/Fees	0	0	158200	144552	157468	170935	177322	186950	196967	196967	196967	196967	196967	196967	196967	196967	196967
B. Total Cash Outflow	23597	4357162	581758	550393	533450	516544	499240	482021	464830	446747	428892	393772	105446	104854	104263	103672	102489
1. Total Assets*2	23597	4266407	14605	234	244	256	205	215	227	0	0	0	0	0	0	0	0
2. Operation Costs	0	0	83050	88913	89815	90753	91355	91981	92634	92634	92634	92634	92634	92634	92634	92634	92634
a. Supplies (1)			23047	28302	28567	28844	29130	29427	29736	29736	29736	29736	29736	29736	29736	29736	29736
b. Supplies (2)			3721	4077	4450	4840	4872	4910	4957	4957	4957	4957	4957	4957	4957	4957	4957
c. Utilities			4355	4607	4871	5142	5426	5717	6015	6015	6015	6015	6015	6015	6015	6015	6015
d. Labor			17860	17860	17860	17860	17860	17860	17860	17860	17860	17860	17860	17860	17860	17860	17860
e. Repair/Maintenance			1159	1159	1159	1159	1159	1159	1159	1159	1159	1159	1159	1159	1159	1159	1159
f. Spare Parts			6949	6949	6949	6949	6949	6949	6949	6949	6949	6949	6949	6949	6949	6949	6949
g. Admin. Overheads			25957	25957	25957	25957	25957	25957	25957	25957	25957	25957	25957	25957	25957	25957	25957
3. Interest	0	90755	181510	163655	145799	127944	110089	92233	74378	56522	38667	3547	2956	2365	1773	1182	0
4. Repayment	0	0	297590	297590	297590	297590	297590	297590	297590	297590	297590	297590	297590	297590	297590	297590	297590
C. A-B	0	0	0-420971-	405805-	375944-	345570-	321833-	295045-	267836-	249780-	231925-	233022	233022	233022	233022	233022	233022
(Depreciation)			461603	408902	408902	408902	408902	408902	408902	408902	408902	408902	408902	408902	408902	408902	408902

Notes: *1 The Figures show current liabilities and accounts payable from 1990 onwards.

*2 The Figures show current assets, accounts receivable, and inventory of supplies and spare parts from 1990 onwards.

Table A1-7-4(5) PROJECTED CASHFLOW OF OPERATION : CENTRAL TESTING LABORATORY WITH TESTING AND CALIBRATION FACILITIES
(CASE 2)

(Unit: '000 Japanese Yen)

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003-6
A. Total Cash Inflow	17364	2208615	86475	94098	102679	111639	120902	130531	140549	140524	140524	140524	0	0
1. Current Liabilities*1	17364	2208615	560	20	20	22	22	23	25	0	0	0	0	0
2. Service Charger/Fees	0	0	85814	94078	102658	111617	120879	130507	140524	140524	140524	140524	0	0
B. Total Cash Outflow	17364	2208615	277729	263919	255099	246312	237544	228802	220094	210544	201218	182566	-5533	0
1. Total Assets*2	17364	2161935	5144	174	181	192	201	211	223	0	0	0	-6328	0
2. Operation Costs	0	0	23891	24376	24875	25403	25953	26526	27132	27132	27132	27132	0	0
a. Supplies (1)			2664	2920	3185	3462	3748	4045	4353	4353	4353	4353		
b. Supplies (2)			93	111	134	160	192	231	277	277	277	277		
c. Utilities			2161	2372	2584	2809	3040	3278	3529	3529	3529	3529		
d. Labor			6755	6755	6755	6755	6755	6755	6755	6755	6755	6755		
e. Repair/Maintenance			598	598	598	598	598	598	598	598	598	598		
f. Spare Parts			3587	3587	3587	3587	3587	3587	3587	3587	3587	3587		
g. Admin. Overheads			8031	8031	8031	8031	8031	8031	8031	8031	8031	8031		
3. Interest	0	46630	93260	83934	74608	65282	55956	46630	37304	27978	18652	0	0	0
4. Repayment	0	0	155434	155434	155434	155434	155434	155434	155434	155434	155434	155434	795	0
C. A-B	0	0	0-191234	169821-152420	152420-134673	116642	-98271	-79545	-70020	-60694	-42042	5533	0	0
(Depreciation)			235931	209890	209890	209890	209890	119564	119564	119564	119564	119564		

Notes: *1 The Figures show current liabilities and accounts payable from 1990 onwards.

*2 The Figures show current assets, accounts receivable, and inventory of supplies and spare parts from 1990 onwards.

Table AI-7-4(6) PROJECTED CASHFLOW OF OPERATION : CENTRAL TESTING LABORATORIES WITH TESTING FACILITIES ONLY
(CASE 2)

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003-6
A. Total Cash Inflow	13319	1653121	86071	93732	102241	111113	120273	129776	139643	139622	139622	139622	0	0
1. Current Liabilities*1	13319	1653121	559	17	18	18	19	20	21	0	0	0	0	0
2. Service Charger/Fees	0	0	85511	93714	102223	111094	120253	129755	139622	139622	139622	139622	0	0
B. Total Cash Outflow	13319	1654159	215083	204163	197490	190830	184191	177564	170962	163647	156525	142280	-4757	0
1. Total Assets*2	13319	1618547	4377	159	166	172	178	185	192	0	0	0	-5433	0
2. Operation Costs	0	0	20755	21195	21638	22094	22572	23060	23574	23574	23574	23574	0	0
a. Supplies (1)			2684	2920	3185	3462	3748	4045	4353	4353	4353	4353	0	0
b. Supplies (2)			0	0	0	0	0	0	0	0	0	0	0	0
c. Utilities			1764	1930	2108	2287	2478	2670	2875	2875	2875	2875	0	0
d. Labor			5889	5889	5889	5889	5889	5889	5889	5889	5889	5889	0	0
e. Repair/Maintenance			445	445	445	445	445	445	445	445	445	445	0	0
f. Spare Parts			2667	2667	2667	2667	2667	2667	2667	2667	2667	2667	0	0
g. Admin. Overheads			7343	7343	7343	7343	7343	7343	7343	7343	7343	7343	0	0
3. Interest	0	35611	71223	64101	56979	49856	42734	35611	28489	21367	14244	0	0	0
4. Repayment	0	0	118706	118706	118706	118706	118706	118706	118706	118706	118706	118706	676	0
C. A-B	0	-1038	-129012	-110431	-95249	-79717	-63918	-47788	-31319	-24025	-16903	-2658	4757	0
(Depreciation)			175788	155814	155814	155814	155814	88909	88909	88909	88909	88909	88909	88909

Notes: *1 The Figures show current liabilities and accounts payable from 1990 onwards.
*2 The Figures show current assets, accounts receivable, and inventory of supplies and spare parts from 1990 onwards.

Table A1-7-4(7) PROJECTED CASHFLOW OF OPERATION : CALIBRATION CENTER
(CASE 2)

(Unit: '000 Japanese Yen)

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003-6
A. Total Cash Inflow	5499	617732	1113	1100	1246	1418	1616	1841	2098	2092	2092	2092	0	0
1. Current Liabilities*1	5499	617732	149	3	3	4	5	5	6	0	0	0	0	0
2. Service Charger/Fees	0	0	963	1097	1242	1414	1611	1835	2092	2092	2092	2092	0	0
B. Total Cash Outflow	5499	617732	74016	70256	67877	63504	63152	60820	58511	55996	53519	48564	-1354	0
1. Total Assets*2	5499	617732	1377	16	19	22	26	31	37	0	0	0	-1532	0
2. Operation Costs	0	0	6573	6652	6748	6849	6970	7111	7274	7274	7274	7274	0	0
a. Supplies (1)			72	79	87	95	105	115	125	125	125	125	0	0
b. Supplies (2)			93	111	134	160	192	231	277	277	277	277	0	0
c. Utilities			396	449	515	581	661	753	859	859	859	859	0	0
d. Labor			1222	1222	1222	1222	1222	1222	1222	1222	1222	1222	0	0
e. Repair/Maintenance			257	257	257	257	257	257	257	257	257	257	0	0
f. Spare Parts			1544	1544	1544	1544	1544	1544	1544	1544	1544	1544	0	0
g. Admin. Overheads			2987	2987	2987	2987	2987	2987	2987	2987	2987	2987	0	0
3. Interest	0	12387	24774	22296	19819	17341	14864	12387	9909	7432	4954	0	0	0
4. Repayment	0	0	41290	41290	41290	41290	41290	41290	41290	41290	41290	41290	178	0
C. A-B														
(Depreciation)			64477	56229	56229	56229	56229	31760	31760	31760	31760	31760	31760	0

Notes: *1 The Figures show current liabilities and accounts payable from 1990 onwards.

*2 The Figures show current assets, accounts receivable, and inventory of supplies and spare parts from 1990 onwards.

Table A1-7-4(8) PROJECTED CASHFLOW OF OPERATION : CENTRAL TESTING LABORATORY WITH TESTING AND CALIBRATION FACILITIES
AND QUALITY MANAGEMENT INSTITUTES
(CASE 2)

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
A. Total Cash Inflow	17364	2776183	160622	144586	157504	170972	177345	186973	196992	196967	196967	196967	196967	196967	196967	196967	196967
1. Current Liabilities*1	17364	2776183	2421	34	35	37	22	23	25	0	0	0	0	0	0	0	0
2. Service Charger/Fees	0	0	152200	144552	157468	170935	177322	186950	196967	196967	196967	196967	196967	196967	196967	196967	196967
B. Total Cash Outflow	17364	2776183	364262	342629	333570	324557	315138	305804	296505	286364	276447	257203	101178	100587	99995	99404	98222
1. Total Assets*2	17364	2725118	12769	230	240	252	201	211	223	0	0	0	0	0	0	0	0
2. Operation Costs	0	0	84074	84897	85746	86637	87187	87760	88366	88366	88366	88366	88366	88366	88366	88366	88366
a. Supplies (1)	0	0	28047	28302	28567	28844	29130	29427	29736	29736	29736	29736	29736	29736	29736	29736	29736
b. Supplies (2)	0	0	3721	4077	4450	4840	4872	4910	4957	4957	4957	4957	4957	4957	4957	4957	4957
c. Utilities	0	0	3893	4104	4316	4541	4772	5010	5261	5261	5261	5261	5261	5261	5261	5261	5261
d. Labor	0	0	17860	17860	17860	17860	17860	17860	17860	17860	17860	17860	17860	17860	17860	17860	17860
e. Repair/Maintenance	0	0	656	656	656	656	656	656	656	656	656	656	656	656	656	656	656
f. Spare Parts	0	0	3938	3938	3938	3938	3938	3938	3938	3938	3938	3938	3938	3938	3938	3938	3938
g. Admin. Overheads	0	0	25957	25957	25957	25957	25957	25957	25957	25957	25957	25957	25957	25957	25957	25957	25957
3. Interest	0	51065	102130	92212	82295	72377	62450	52543	42625	32708	22791	3547	2956	2365	1773	1182	0
4. Repayment	0	0	165289	165289	165289	165289	165289	165289	165289	165289	165289	165289	165289	165289	165289	165289	165289
C. A-B	0	0	-203640	-198043	-176066	-153585	-137793	-118831	-99513	-89397	-79480	-60236	95739	96380	96372	97563	98745
(Depreciation)			278153	234807	234807	234807	234807	131252	131252	131252	131252	131252	0	0	0	0	0

Notes: *1 The Figures show current liabilities and accounts payable from 1990 onwards.

*2 The Figures show current assets, accounts receivable, and inventory of supplies and spare parts from 1990 onwards.

Table A1-7-5 Initial Investment Requirement
:Regional Testing Laboratory

(Unit: '000 Japanese Yen)

Table No.	A1-7-5(1)	A1-7-5(2)	A1-7-5(3)
	Cebu	Davao	CDO
Buildings and civil Works	211.5	145.8	145.8
Interior works	28.2	22.7	22.7
Testing equipment	175.6	148.4	148.4
Engineering & Management Expenses	84.9	63.0	63.0
Total	500.2	379.9	379.9

Note: CDO = Cagayan de Oro

Table A1-7-5(1) PROJECTED CASHFLOW OF OPERATION : REGIONAL TESTING LABORATORY
CEBU REGION

(Unit: '000 Japanese Yen)

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003-6
A. Total Cash Inflow	500172	224968	24031	25696	27200	28850	30547	32117	32112	32112	32112	0	0
1. Current Liabilities*1	580172	188	4	4	4	4	5	4	0	0	0	0	0
2. Service Charger/Fees	0	224780	24026	25691	27196	28846	30542	32112	32112	32112	32112	0	0
B. Total Cash Outflow	500172	51726	48990	47481	45954	44438	42930	41406	39742	38112	36482	-1229	0
1. Total Assets*2	500172	1244	31	35	31	34	35	32	0	0	0	-1446	0
2. Operation Costs	0	7084	7111	7229	7337	7449	7569	7678	7678	7678	7678	0	0
a. Supplies (1)		706	753	805	853	906	960	1010	1010	1010	1010	0	0
b. Supplies (2)		0	0	0	0	0	0	0	0	0	0	0	0
c. Utilities		872	932	998	1057	1117	1183	1242	1242	1242	1242	0	0
d. Labor		2227	2227	2227	2227	2227	2227	2227	2227	2227	2227	0	0
e. Repair/Maintenance		102	102	102	102	102	102	102	102	102	102	0	0
f. Spare Parts		611	611	611	611	611	611	611	611	611	611	0	0
g. Admin. Overheads		2485	2485	2485	2485	2485	2485	2485	2485	2485	2485	0	0
3. Interest	0	16303	14673	13043	11412	9782	8151	6521	4891	3260	1630	0	0
4. Repayment	0	27173	27173	27173	27173	27173	27173	27173	27173	27173	27173	216	0
C. A-B													
(Depreciation)		46869	37350	37350	37350	37350	20379	20379	20379	20379	20379	20379	0

Notes: *1 The figures show current liabilities and accounts payable from 1991 onwards.

*2 The figures show current assets, accounts receivable, and inventory of supplies and spare parts from 1991 onwards.

Table A1-7-5(2) PROJECTED CASHFLOW OF OPERATION : REGIONAL TESTING LABORATORY
 DAVAO REGION

(Unit: '000 Japanese Yen)

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003-6
A. Total Cash Inflow	379876	18378	19948	21756	23530	25416	27370	29383	29378	29378	29378	0	0
1. Current Liabilities*1	379876	124	4	4	4	5	5	5	0	0	0	0	0
2. Service Charge/Fees	0	18254	19943	21751	23525	25411	27364	29378	29378	29378	29378	0	0
B. Total Cash Outflow	379876	41577	39425	38207	36987	35781	34574	33377	32000	30666	29331	-1040	0
1. Total Assets*2	379876	965	35	37	36	39	40	41	0	0	0	-1195	0
2. Operation Costs	0	5018	5131	5246	5361	5487	5614	5750	5750	5750	5750	0	0
a. Supplies (1)		572	625	681	737	796	857	921	921	921	921	0	0
b. Supplies (2)		0	0	0	0	0	0	0	0	0	0	0	0
c. Utilities		634	694	753	813	879	945	1017	1017	1017	1017	0	0
d. Labor		1169	1169	1169	1169	1169	1169	1169	1169	1169	1169	0	0
e. Repair/Maintenance		86	86	86	86	86	86	86	86	86	86	0	0
f. Spare Parts		513	513	513	513	513	513	513	513	513	513	0	0
g. Admin. Overheads		2042	2042	2042	2042	2042	2042	2042	2042	2042	2042	0	0
3. Interest	0	13347	12012	10678	9343	8008	6673	5339	4004	2669	1334	0	0
4. Repayment	0	22245	22245	22245	22245	22245	22245	22245	22245	22245	22245	154	0
C. A-B													
(Depreciation)		36271	29712	29712	29712	29712	17112	17112	17112	17112	17112	17112	17112

Notes: *1 The Figures show current liabilities and accounts payable from 1991 onwards.

*2 The Figures show current assets, accounts receivable, and inventory of supplies and spare parts from 1991 onwards.

Table A1-7-5(3) PROJECTED CASHFLOW OF OPERATION : REGIONAL TESTING LABORATORY
CACAYAN DE ORO REGION

(Unit: '000 Japanese Yen)

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003-6
A. Total Cash Inflow	379876	9108	9884	10922	11752	12738	13759	14825	14820	14820	14820	0	0
1. Current Liabilities*1	379876	108	3	3	3	3	3	4	0	0	0	0	0
2. Service Charger/Fees	0	9000	9881	10819	11749	12734	13755	14820	14820	14820	14820	0	0
B. Total Cash Outflow	379876	41023	38997	37745	36492	35249	34007	32772	31413	30078	28743	-795	0
1. Total Assets*2	379876	792	20	21	20	22	23	24	0	0	0	-925	0
2. Operation Costs	0	4637	4718	4800	4882	4972	5064	5163	5163	5163	5163	0	0
a. Supplies (1)	284	312	312	341	369	401	433	466	466	466	466	0	0
b. Supplies (2)	0	0	0	0	0	0	0	0	0	0	0	0	0
c. Utilities	542	594	594	647	700	760	819	885	885	885	885	0	0
d. Labor	1169	1169	1169	1169	1169	1169	1169	1169	1169	1169	1169	0	0
e. Repair/Maintenance	86	86	86	86	86	86	86	86	86	86	86	0	0
f. Spare Parts	513	513	513	513	513	513	513	513	513	513	513	0	0
g. Admin. Overheads	2042	2042	2042	2042	2042	2042	2042	2042	2042	2042	2042	0	0
3. Interest	0	13347	12012	10678	9343	8008	6673	5339	4004	2669	1334	0	0
4. Repayment	0	22245	22245	22245	22245	22245	22245	22245	22245	22245	22245	130	0
C. A-B													
(Depreciation)		36271	29712	29712	29712	29712	17112	17112	17112	17112	17112	17112	

Notes: *1 The Figures show current liabilities and accounts payable from 1991 onwards.

*2 The Figures show current assets, accounts receivable, and inventory of supplies and spare parts from 1991 onwards.

Supplementary Information 8: Example of a Seminar and Workshop Curriculum to Improve the Technology and Quality

(1) Seminar and Workshop to Improve the Technology to Adjust Machines (Woodworking and Metalworking)

1) Organization in charge : MIRDC

2) Contents of the seminar and workshop

a) Fundamental knowledge on the structure and control of woodworking machines, machine tools, forging machines, etc. (lectures)

b) Fundamental knowledge on the machine elements/parts (lectures)

c) Methods to test the accuracy of machines (lectures)

Knowledge on important accuracies, the types of measurement equipment, and the methods to use them.

d) Workshop

Practical training through actual overhauling of machines, replacing worn parts, machining to increase accuracy of the unevenly worn surfaces (a combination of such operations as cutting, manual finishing, heat treatment, grinding, etc.), reassembling, inspecting the accuracy, etc.

3) Outline of implementation

a) Lecturers of seminars and instructors of workshops

Consideration will be centered on the experts of MIRDC. It is, however, necessary to strengthen the staff because it is inadequate at present. Foreign experts will be accepted to supplement the staff.

b) Teaching materials

In order to raise the efficiency of education, teaching materials such as texts, videos, slides, OHP, etc. will be used.

c) Seminar room

A seminar room equipped with television, video cassette, OHP, slide projector, blackboard, etc. is necessary.

Use of the seminar rooms of MIRDC, MIAD, JETRO, etc.

d) Workshop

The facilities of MIRDC will be used.

e) Others

Consideration will be given to the place of the seminar room and the time band of the seminar to facilitate the attendance by the firms.

(2) Seminar and Workshop on Technology to Improve the Accuracy in the Furniture and Woodworks Manufacturing Sector

1) Organization in charge : CITC

2) Contents of the seminar and workshop

There are roughly three methods to produce products (parts) by processing wood, namely,

1. Cutting and grinding (planing, lathing, rotary cutting, turning, boring, grinding)
2. Jointing (vertical jointing, joint surface processing, doweling)
3. Bending (Heat softening, manual bending, machine bending)

Of these operations, item 2. jointing is important when assembling is anticipated. Doweling, which is used as the main joints of chairs and furniture, requires skill in each of the following:

- a) Making the dowel itself [selection of material (material of a specific gravity higher than the jointer is used), shape, diameter of dowel, length]
- b) Method to bore the dowel hole (item 1. above)

c) Combining of the components which use the dowels

and improvement of the accuracy of a) and b) which are technical elements is necessary.

There are many types of jointers for woodworks and furniture and it is considered that a fair length of training period to digest them and to use them in specific ways will be needed and a long period of training will be necessary when adhesion, and use of metal fittings such as nails are used on them.

Item 3. above is widely used in the rattan furniture industry on Cebu Island as a rattan processing technique, although the equipment is on a small scale.

(3) Seminars on new technology and market information in the furniture and woodworks manufacturing sector.

- 1) Organization in charge : PTTC
- 2) Contents of the seminar and workshop

The attached table is the schedule of the seminars and workshops which the ASEAN Timber Technology Center (ATTC, a project organized by the EC aid fund in 1987 to promote the development of the woodworking industry of the ASEAN nations and operated by the government of Malaysia) held in 1989, at various ASEAN locations.

It is thought that the themes which reflect the concerns of the woodworking industry of the different countries including the Philippines would be listed and would be useful in selecting future themes for CITC.

The themes of the above seminar and workshop are all related to technology, but as the market-related themes the following may be considered:

1. Lectures on the market needs (the required quality, design, finish, etc.) of the buyers (importers, department stores, specialty stores, etc.) of the main markets such as Japan, Europe and U.S.A.
2. Inspection of the markets of the countries advanced in the field of furniture (Northern Europe, U.K., Italy, U.S.A., Japan, etc.)

Attached Table

SCHEDULE OF 1989 ATTC SEMINAR AND WORKSHOP

Title of Seminar/Workshops	Level	Venue	Duration	Course Fee (M\$)
<Seminar>				
Wood Preservation Pressure Treatment	B	K.L.	1/16-21	200
Bandsaw Blade Maintenance	B	Kuching	2/22-3/4	200
Wood Machining Planer/Molder Operations	B	Singapore	3/24-29	200
Rataan Furniture Production	B	Manila	5/15-21	100
Wood Carving	B	Chiengmai	6/19-24	100
Design of Large Span Timber Structure	A	K.L.	8/14-19	200
QC in Furniture Manufacture	A	K.L.	9/18-21	200
Furniture Finishing	B	K.L.	11/ 6-25	300
Solid Door Manufacture	B	K.L.	12/11-16	200
<Work Shop>				
Wood Drying		K.L.	3/13-18	100
Wood Drying		Bangkok	3/19-25	100
Wood Drying		Manila	3/26-4/1	100
Wood Drying		Jakarta	4/ 2-8	100
Wood Drying		Singapore	4/ 9-15	100
Computerized Information on Wood Drying Systems for the Wood Industry		K.L.	9/ 4-6	200
		K.L.	11/27-28	200

Notes: 1. Level A: Intended for executive and middle management.
 Level B: Intended for lower supervisory and technicians.
 These courses are class - room - seminar type lectures coupled with laboratory - workshop seminar and industry tours.

2. K.L. = Kuala Lumpur

3. Course fee are shown in Malaysian Dollars.

Supplementary Information 9: Important Points in the Standardization of the Manufacturing Process of the Furniture and Woodworking Sector

Process	Important Points in the Standardization
(1) Sawmilling (rough)	Unification to the metric system
(2) Drying (Kiln dryer)	Moisture content 10%
(3) Sawmilling (fine)	
(4) Cutting and grinding	Optimization of the properties of the processed wood, the conditions of cutting and the conditions of the cutting edges
(5) Tone of color, pattern, thickness matching	
(6) Jointing	Selection of joints to match the use and the required strength
(7) Combining	Preparing the procedures into a manual
(8) Rough finish	Establishment of yardsticks for finishing
(9) Fine finish	Ditto
(10) Surface finish (coating, surface treatment, void correction)	Ditto
(11) Inspection	Items of inspection, method of inspection (equipment), acceptance standards
(12) Packaging and packing	Individual, group wrapping
(13) Shipment	Method of loading, containers, air cargo

Supplementary Information 10: Advisory Service on Formulation of Basic Standardization Plan and Development of Standardization System

- (1) Number of expert: One
- (2) Duration of service: 3 years
- (3) Qualification
 - 1) Experience in standardization administration
 - 2) Capable of planning standardization policy
 - 3) English speaking
- (4) Contents of the service
 - 1) Advice on formulation of basic standardization plan and annual plan: 9 man-months
 - 2) Advice on standard development: 6 man-months
 - a) Strengthening of the technical committee
 - b) Cooperation with the industrial association
 - c) Promotion of basic research
 - 3) Advice on inspection for certification: 9 man-months
 - a) Formulation of inspection standard
 - b) Execution of inspection
 - c) Method to make guidance on development of quality control system of manufacturers
 - 4) Advice on dissemination of standard
 - a) Promotion of the certified products of PS certification mark system
 - b) Promotion of use of standard
 - 5) Advice on the export inspection system: 9 man-months
 - a) Formulation of the system
 - b) Selection of the object industries, and formulation of inspection standard
 - c) Support of the manufactures in quality improvement

Supplementary Information 11: Major Assumptions on Capital Requirement Plan

1. Form of Contract: The contract shall be on a lump sum basis by projects. The costs of machinery and equipment shall be FOB prices at shipping port, and include the fees or costs for design, engineering, fabrication, adjustment, packaging, and freight to the port of shipment. The erection at the site will be done by Philippine government, and the supplier of the machinery and equipment shall provide technical supervision for the erection, test run and training of the basic technical items.
2. The Base Year of the Price Computation: Computations were based on price effective at the beginning of September, 1989.
3. Currency and Rate of Exchange: Both the local and foreign exchange portions were estimated on a yen base. the rate of 1 peso = 6.61 yen was used to convert the local currency.
4. Level of the Estimate of the Capital Requirement: The capital requirements for the projects were estimated by totaling the market prices of the main machinery and equipment according to layout and the machinery and equipment lists.

The machinery and equipment lists on which the estimates were based are shown in Table A1-7-1 (1)-(7), Table A1-7-2 (1)-(4) and Table A1-7-3 (1)-(4).

5. Condition of Financing : The annual interest of long-term foreign loan is assumed to be 6 percent.
6. Conditions for Computing the Expenses
 - (1) Cost of Acquisition of Land and Development: It was assumed that all project will be implemented on land owned by Philippine government and the respective land is in a developed state for use as building land. Therefore, no land acquisition cost or development cost was added.
 - (2) Construction Cost of Buildings: When new shop buildings or extension of building were needed, the construction costs of such building costs were included. The construction costs were based on the average construction cost per square meter by region. In a project where the costs of foreign exchange portion are required because of special specifications, the required capital costs for the foreign exchange portion were computed for the special specification part and added. The average construction costs per square meter were as follows.

Metro Manila : 17,000 pesos/sq.m. (Unit cost of interior work : 3,000 pesos/sq.m.)
Cebu : 16,000 pesos/sq.m.
CDO : 14,000 pesos/sq.m.
Davao : 14,000 pesos/sq.m.

The costs for erection of the testing facilities and auxiliary equipment such as transformers should be reviewed carefully prior to the implementation of the project because of the special character of building.

- (3) Cost of the Machinery and Equipment: The costs of imported machinery and equipment were estimated on a FOB shipping port basis. Ocean freight, marine insurance, cost of unloading at the arrival port, inland freight, cost of technical assistance, software cost and contingency were included in the estimate.
- (4) Interest during Construction: In case that the construction period of the project from the date of shipment(date of disbursement) to commencement of operation is estimated for more than one year, interest during construction was added.
- (5) Import Duties: The import duty on testing equipments and office supply in Philippines was 20 percent applicable as of the date of the field survey. In case that the machinery and equipment related to each project are imported, it is assumed that no import duty shall be applicable.
- (6) Labor cost : Annual wage/salary are assumed as follows.

Director	: 80,000 pesos
Assist. Director	: 50,000 pesos
Manager/Professor	: 50,000 pesos
Chief	: 40,000 pesos
Senior Staff	: 23,000 pesos
Junior Staff	: 18,000 pesos
Inspector	: 18,000 pesos
Clerk/Secretary	: 15,000 pesos

- (7) Supplies Cost : Average cost of testing services is assumed to be 20 percent of the total revenue from testing services.
- (8) Utility cost : The utility cost was composed of costs related to the services and general expenses. Unit cost of Utility per service was 24 pesos, and the estimate of general expenses was based on costs of lighting and air conditioner.

- (9) Cost of Spare Parts : The annual cost of spare parts required is equivalent to 0.3 percent of the total amount of machinery and equipment.
- (10) Cost of Maintenance/Repair : The annual cost of maintenance/repair required is equivalent to 0.5 percent of the total amount of building, machinery and equipment.
- (11) Administrative Expenses : The annual cost of Administrative Expenses required is equivalent to 80 percent of the total labor cost.

7. Other Cost Items

Account receivable	:	30 days equivalent	
Account payable	:	30 days equivalent	
Inventory	:	180 days equivalent	(for imported materials)
		80 days equivalent	(for local materials)

Supplementary Information 12: Examination of Possibility to Utilize Existing Laboratories

1. Assumptions

- 1-1 The required costs for land and building including that of reconstruction and/or expansion of existed ones, are not included in this estimate.
- 1-2 The kinds of testing assumed to be covered are limited to that of mandatory certification. All the required testings on one product are assumed to be completed within one laboratory. In the case of "Requalification of LPG Cylinder" and "Portable Fire Extinguisher", two testing laboratories are assigned to conduct the same testing since number of testing samples of these two products is large compared to others.
- 1-3 Use of laboratories attached to manufacturers in private sector is not taken into account for the mandatory certification testing.
- 1-4 Assumptions on evaluation of existing testing facilities;
 - (a) All the existing testing equipment are assumed to be functional although the specifications are not available.
 - (b) The existing testing equipment is assumed to be operated at its capacity.
 - (c) All the testing equipment which were purchased more than 10 years ago are assumed to be renewed.
 - (d) Testing equipment for which testing field is specified is assumed to be used for these testing fields only.
- 1-5 The quantity of necessary testing equipment, in principle, is one or one set. However, in case that the number of testing sample is large, the quantity is increased accordingly.
- 1-6 The number of additional testing engineers required are estimated based on the estimated number of operators necessary for these testing equipment only.
- 1-7 BPS Laboratory is assumed to conduct all the testings for mandatory certification which will not be covered by other laboratories.

2 Assumed Demarcation of Test among the Existing Laboratories

2-1 MIRDC

- PNS 03 LPG Steel Cylinder
- PNS 04 Automotive LPG Steel Cylinder
- PNS 05 LPG System in Internal Engine
- PNS 26 G.I. Pipes
- PNS 41 Requalification of LPG Cylinder
- PNS 49 Steel Bar
- PNS 67 G.I. Steel and Coil
- PNS 77 Carbon Steel Wire Rod
- PNS 99 Kerosene Stove
- PNS100 LPG Stove
- PNS136 Steel Wire Nail

2-2 CCL

- PNS 07 Portland Cement
- PNS 16 Concrete Hollow Block
- PNS 63 Pozzolan Cement

2-3 PIPAC

- PNS 15 Portable Fire Extinguisher
- PNS 27 Rules for Portable Fire Extinguisher
- PNSDOT Motor Vehicle Brake Oil

2-4 CIGI

- PNS103 Medical Grade Oxygen

2-5 FPRDI

- PNS173 Dimension of Sawn Timber
- PNS194 Sawn Timber
- PNS196 Plywood

2-6 BPS Laboratory

*Electrical

PNS 02 Tubular Fluorescent Lamp
PNS 12 Ballast
PNS 13 Cartridge Fuse
PNS 14 uPVC Electrical Conduit
PNS 35 Thermoplastic Insulated Wires and Cables
PNS 38 Incandescent Lamp
PNS 40 Copper Redraw Rod
PNS 42 Lampholder and Starterholder
PNS 43 EC Aluminum Redraw Rod
PNS 45 Starter
PNS 74 Fluorescent Lighting Fixture
PNS 79 PVC Insulating Tape
PNS 80 Edison Screw Lampholder
PNS105 Ballast for Mercury Vapor Lamp
PNS109 Polyvinyl Formal Enameled Wire
PNS110 Polyester Amideimide Enameled Wire
PNS111 Oreo-Resinous Enameled Wire
PNS134 Electric Fan
PNS135 Electronic Ballast
PNS189 Lighting Set

*Mechanical

PNS 06 Lead-Acid Storage Batteries
PNS 25 Pneumatic Tires
PNS 34 Rubber Inner Tube
PNS 41 Requalification of LPG Cylinder
PNS130 Safety Glass
PNS137 Packing and Labeling for Toy

*Chemical

PNS 08 Safety Matches
PNS 15 Portable Fire Extinguisher
PNS 27 Rules for Portable Fire Extinguisher
PNS 55 PE Pipes
PNS 68 Fire Hose

2-7 FDC is assumed to conduct testing for voluntary certification on food, and PTRI on textile.

2-8 Laboratory in Regions

DOST laboratories in Cebu, Cagayan de Oro and Davao are assumed to conduct testing in the respective regions.

3 Findings

As shown on next page, the total cost required for equipment of the proposed Central Testing Laboratory is found less expensive in the original plan than that of the alternative plan, or the utilization plan of the existing laboratories. This is because of the duplication of equipment mainly for basic testing functions caused by the dispersal of the required testing functions.

In the case of electrical field, since there is no adequate existing laboratory, all the equipment is necessary to be installed in one laboratory. Thus, the cost for the alternative plan is the same as that of the original plan. However, in the case of mechanical field and chemical field, the testing equipment is assumed to be installed in three or four laboratories based on their assigned functions, and the duplication in basic testing equipment is unavoidable. In addition, the existing facilities are insufficient in carrying out the intended testings, and most of the required testing function is necessary to be met by the additional equipment. Further, the required number of additional testing engineers is estimated to be more than the original plan because of the same reasons as discussed in the above.

However, as far as the regional testing laboratories are concerned, since there is no adequate existing facility in the regions, all the equipment is necessary to be installed as in the case of the original plan.

The alternative plan has the advantage in that:

1. The financing arrangement of the alternative plan may be easier than the original plan, and therefore, the implementation may be accelerated, because of small financing requirement, as long as the plan is implemented part by part.
2. The organization plan will be easier than the original plan, since the organization may be set up on the basis of the existing ones.

COST ESTIMATION OF TESTING EQUIPMENT BY ORGANIZATION

(Unit: '000 JPY)

	Electrical	Mechanical	Chemical	Total
Central				
MIRDC	-	258,883	-	258,883
CCL	-	-	97,950	97,950
PIPAC	-	-	213,312	213,312
CIGI	-	-	26,242	26,242
FPROI	-	36,800	-	36,800
BPS	391,134	289,440	165,848	846,422
Sub-Total	391,134	585,123	503,352	1,479,609
Original Plan	391,134	424,815	285,574	1,101,523
Regional				
DOST Region 7	37,354	61,244	129,620	228,218
DOST Region 10	37,354	61,244	94,358	192,956
DOST Region 11	37,354	61,244	94,358	192,956
Original Plan				
Cebu	37,354	61,244	129,620	228,218
CDO	37,354	61,244	94,358	192,956
Davao	37,354	61,244	94,358	192,956

However, the alternative plan has the shortcomings in that:

1. Assuming all the testing functions be installed, the total financing requirement will be more expensive than the original plan due to duplication of the basic equipment.
2. One of the expected function of the testing and inspection laboratory in the public sector, in the case of the original plan, is to accumulate the testing and inspection results to utilize it as a basis of further development of standardization. If the existing laboratories are utilized, the testing and inspection is carried out in more than one laboratories, and further, these function will be hard to operated separately from the research function, resulting in difficulty to accumulate the results to utilize it efficiently for the standardization development.
3. There might be difficulty in ensuring the timely testing and inspection, adequate maintenance of equipment and staffing if the priority of testing and inspection function is lower among the functions of the existing laboratory.

Thus, the original plan is more recommendable and cost effective than the alternative plan. However, it is recommended to examine the possibility of the alternative plan if there is a difficulty in financing arrangement.

ANNEX 2

ATTACHED INFORMATION ON INDUSTRIAL STANDARDIZATION

Attached Information 1: The Organization of BPS and Its Functions

The organization of BPS consists of four divisions as shown in Figure A2-1-1.

The official number of personnel is 87 in total, including 28 of Standards Development Division, 17 of Standards Promotion Division, 15 of Quality Control Assistance Division and 23 of Standards Conformity Division together with Director, Deputy Director and 2 secretaries. Although the actual number of personnel is 58 in total, composing of 16 of Standards Development Division, 11 of Standards Promotion Division, 9 of Quality Control Assistance Division and 19 of Standards Conformity Division together with Director, Deputy Director and 2 secretaries.

The functions of each division of BPS are described as follows:

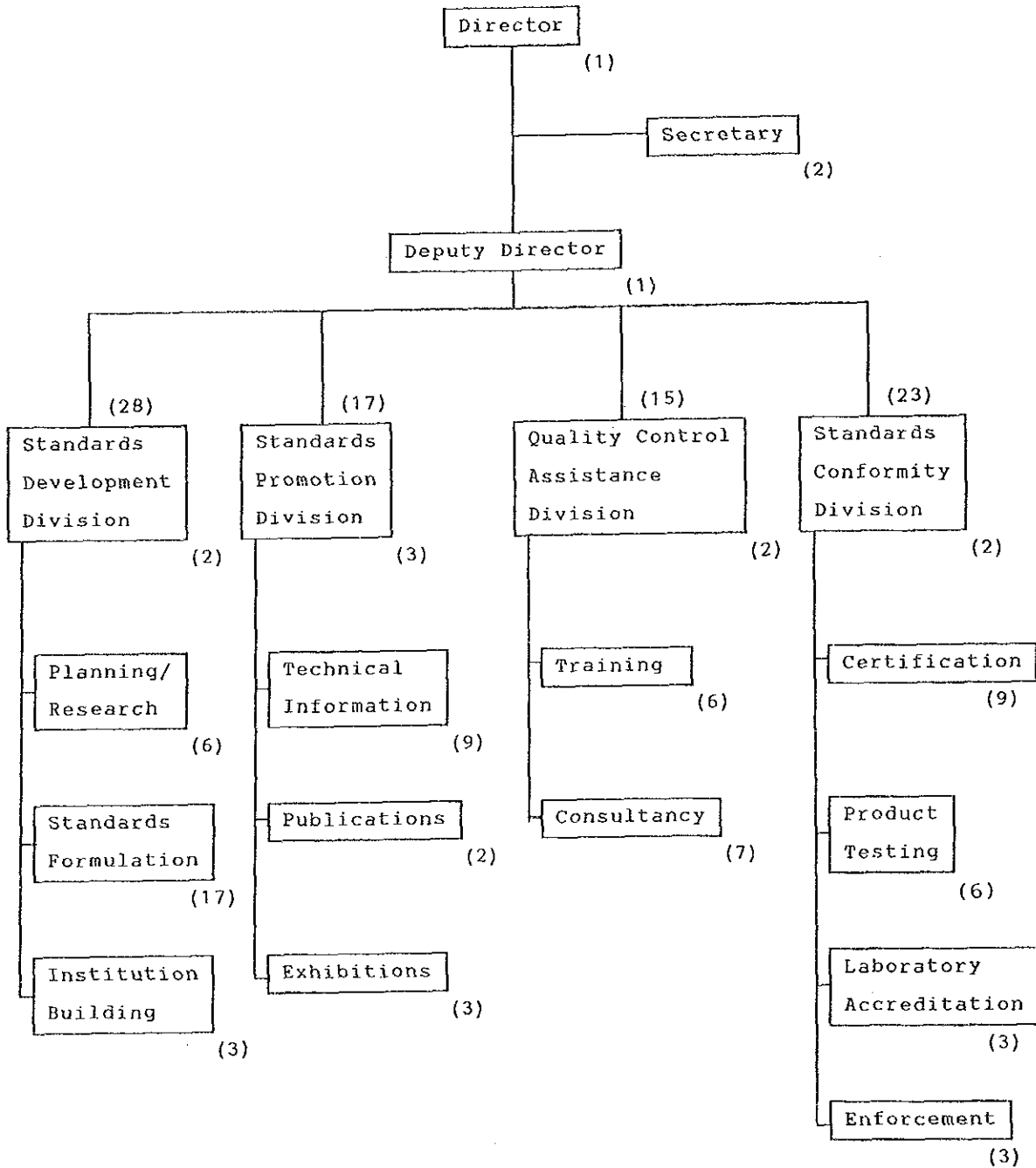
1. Standards Development Division

- a) Formulation and issuance of standards, sampling and testing methods and codes of practice.
- b) Preparation, implementation, monitoring and evaluation of programs on national and international standardization activities, harmonization of Philippine standards with regional and international standards, and prioritization of products for standardization.
- c) Organization of multi-sectoral technical committees to assist in standards writing.
- d) Coordination with specialized standards writing bodies in the acceleration of national standardization work.

2. Standards Promotion Division

- a) Preparation, implementation and evaluation of programs on technical information services to manufacturers, exporters, consumers and other clients.
- b) Operation of the Philippine inquiry point for the GATT Agreement on Technical Barriers to Trade (or Standards Code).
- c) Publication of technical information on standardization and foreign market quality requirements.

Figure A2-1-1
Organizational Chart of Bureau of Product Standards [BPS]



Note: Figures in the parentheses mean the number of staffs to be assigned (Total 87 persons).

d) Conducts exhibits, seminars and other information programs for public awareness about the value of standardization and of the Philippine Standard (PS) Mark.

3. Quality Control Assistance Division

a) Preparation, coordination and evaluation of programs on clients' and DTI personnel's specialized technical training on industrial quality control.

b) Extension of production and quality control consultancies to manufacturers, especially PS Mark license applicants and holders.

c) Coordination with Philippine and foreign institutions in obtaining resources for the implementation of technical training programs on industrial quality control.

4. Standards Conformity Division

a) Formulation implementation and coordination of policies and programs on the PS Certification Mark scheme, factory and product assessments, and commodity clearance scheme.

b) Conducts product tests relative to standards formulation and implementation.

c) Preparation, implementation and evaluation of programs on laboratory accreditation.

d) Enforcement of compliance with standards.

The implementation of the above-mentioned functions in the region is undertaken by DTI Regional/Provincial Office. DTI has 13 Regional Branches and 13 Provincial offices and conduct these functions throughout the country on behalf of BPS. Although the division of each DTI Regional/Provincial Office in charge vary from region to region subject to the character of the functions, the Industrial Development Division is generally engaged in taking the role of BPS. The number of DTI Regional/Provincial Offices and personnels in charge are shown in Table A2-1-1.

The main functions of DTI Regional/Provincial Offices are as follows.

a) Collection of information on local conditions necessary for making decisions on the selection of priority products to be standardized.

b) Invitation of comments on PNS draft by BPS from local people concerned

Table A2-1-1
DTI Regional/Provincial Office and their Number of Staff Members

Region No.	Region (persons)	Province (persons)	Area Covered
NO. 1	3	3	Ilocos Region
NO. 2	3	—	Cagayan Valley
NO. 3	4	—	Central Luzon
NO. 4	3	4	Southern Luzon
NO. 5	2	5	Bical Region
NO. 6	2	—	Western Visayas
NO. 7	3	5	Central Visayas Region
NO. 8	4	6	Eastern Visayas
NO. 9	3	6	Western Mindanao
NO. 10	2	8	Northern Mindanao
NO. 11	5	7	Southern Mindanao
NO. 12	2	8	Central Mindanao
NCR	10	—	
Total	46	52	
Grand Total		98	

Source : B P S

- c) Promotion of enacted PNS in local areas
- d) Implementation of factory assessment and product assessment for PS Mark (if necessary, technical assistance is rendered.)
- e) Follow-up assessment of factory with PS Mark
- f) Procedures related to the implementation of Import Commodity Clearance
- g) Monitoring in the market of PS mark products
- h) Dissemination of standardization, quality control and metrication in local areas by means of conferences, symposiums and mass media.

Regional dispersion of industrial sector is one of the priority issues of the present Philippine government, and DTI has had the strategy along the government policy to transfer the present function undertaken in Metro Manila to the DTI Regional/Provincial offices and to strengthen their role.

Attached Information 2: The Philippine Standards Council

1. The Philippine Standards Council is hereby organized with the heads or senior representatives of the following organizations as ex officio members:

- a) Philippine Chamber of Commerce and Industry;
- b) Philippine Standards Association;
- c) Philippine Technological Council;
- d) Industrial Technology Development Institute Department of Science and Technology;
- e) Bureau of Food and Drugs Department of Health;
- f) Procurement Service Office Department of Budget and Management; and
- g) Bureau of Product Standards (BPS), Department of Trade and Industry(DTI)

Chairman of the Council: The Undersecretary of Department of Trade and Industry

Secretary of the Standard Council : BPS

Other organizations or individuals may be invited by the Council, as necessary, for specialized technical expertise.

2. The on-going activities of the Standard Council

The Standard Council has been actively engaged in the following activities for purpose of the achievement of objectives which was defined under DTI No. 10 (1987).

- (1) 1st Meeting - 20 January 1988

Major conclusions :

- 1) Council recognized that products affecting public health and safety along with consumer-oriented products should be given priority in formulating national standards and implementing these as mandatory ones.
- 2) That tentative standards may be adopted to immediately satisfy urgent quality and safety needs of consumers.
- 3) That People may be given continuing education on quality to make them knowledge-able about what they should demand from manufacturers in terms of product performance,safety, etc.

- 4) That the PCCI help in disseminating information from BPS regarding standards, manufacturers that are certified as complying with standards.

(2) 2nd Meeting - 9 March 1988

Major conclusions :

- 1) Immediate formulation of standards for the following:
 - a) Edge marking of plywood
 - b) Weight/mass of bread
 - c) Toys & children's furniture enamels & other surface coatings
 - d) Surface coating by enamel and others
 - e) PVC cement
 - f) Plastic containers for food
 - g) Insulating thermoplastic materials
- 2) Financial Institutions could be used to exert pressure on some manufacturers by requiring that only BPS-certified products be used in projects funded by loans from banks and other financial institutions.
- 3) That Penalty should be stratified based on the degree of violations. Tentative measures can be adopted such as preventive suspension upon discovery of violation.
- 4) A review by BFAD of the Export Commodity Clearance procedures for food (whether this can be made mandatory again) to control causes of detention.
- 5) The teaching of quality in schools.
- 6) Integration of PNS into the various codes.

(3) 3rd Meeting - 9 May 1988

Major conclusions :

- 1) DTI to initiate an inter-agency to develop standards including acceptance/rejection levels on food products for export.
- 2) BFAD will make a special study about problems of food manufacturers/exporters with many detained shipments.

(4) 4th Meeting - 6 July 1988

Major conclusions :

- 1) Regular DTI-association dialogues on Continuing issues, procedures, implementing guidelines, assessment of standards implementation.
- 2) BPS submission to associations concerned of reports of non-compliance by association members with standards.
- 3) Regular submission to BPS of copies of test reports of testing laboratories such as ITDI for products that failed to meet standards (even though tests conducted were not contracted by BPS).
- 4) Mr. Marquez of the Philippine Technology Council to report to BPS reinforcement bar manufacturers which manufacturers sub-standard products.

(5) 5th Meeting - 7 September 1988

Major conclusions :

- 1) On Metrication Program (At present, the following are being done):
 - a) to write to manufacturers who have not yet metricated their products.
 - b) to write to supermarkets and outlets about metrication.
 - c) to write to agencies who issue licenses to strictly require applicants to specify required information in metric units)
- 2) Processed food for Export
 - a) BFAD to keep close liaison with PSA, Philippine food engineering association and other government agencies and professional bodies.
 - b) To establish a professional group in BFAD in response to the needs of quality control from processed food exporters.
 - c) To clarify the exporter who had been often terminated the export of their products, review the problems and make them taken QC training in the sanitary field.

- d) To coordinate retailer council with consumers council to sort out such problems as promotion of standards in processed food and exposure of companies which do not comply with BFAD standards.

(6) 6th Meeting - 10 November 1988

The decisions of Regional/Provincial Standard Councils are reviewed in this meeting.

Major conclusions :

- 1) To accredit Regional testing laboratories and undertake the testing without sending samples to Manila
- 2) To amend BPS licensee system, and especially revise the fee structure of BPS licensee by company size and type of industry. (The present fee structure is based on an unitary price (5,000 pesos) regardless company size, profitability and sales)
- 3) To review the establishment of Regional Standard Council
- 4) To implement the metrication for purpose of checking a lack of sales in primary commodity such as rice and sugar.

Attached Information 3: Outline of Implementation program for Standardization

1. Implementation Program of Standardization in 1988

(1) Key Objectives

To contribute to the department's goal of developing trade and industry through standardization by providing standards and other technical services in testing and certification, consultancy and training to DTI offices and ultimately to the manufacturing, trading, consumer, professional and other sectors.

(2) Critical Objectives

a) To develop and issue Philippine national standard specifications, testing methods and codes of practice, giving priority to products that affect public life, health and safety, as bases for manufacturing efficiency, productivity, and quality control and for evaluating product conformity to specifications.

b) To provide, in coordination with DTI field offices, testing and certification services to verify and attest to consistent conformity of products to established standards

c) To provide technical training to industrial clients to enable them to apply standards and institute quality control systems and procedures in their production operations;

To provide technical training in standardization to BPS and other DTI personnel to upgrade their knowledge, skills and services to clients.

d) To establish public awareness about the benefits of standardization and to encourage the application of standards and of quality control systems and procedures in manufacturing operations.

(3) Implementation Program

The Implementation Program of Standardization in 1988 is shown in Table A2-3-1.

(4) Standards Formulation

PNS sets up the following priority fields of standardization.

Table A2-3-1 BUREAU OF PRODUCT STANDARDS
1988

PROGRAM	TARGET				
	ANNUAL :	QUARTER			
		1	2	3	4
<u>PROGRAM 1. STANDARDS DEVELOPMENT</u>					
A. Standards to be formulated/adopted	150	20	45	45	40
B. BPS Technical Committees to be organized	4	2	2		
C. ISO Committees to be participated in	4	1	2	1	
D. Projects to Integrate Philippine Standards in National Codes	3		1	1	1
E. ASEAN Regional Standardization					
<u>PROGRAM 2. PRODUCT CERTIFICATION</u>					
A. Factory & Product Assessment Reports to be evaluated	500	80	145	150	125
B. PS Certification Mark Licenses to be issued	40	8	10	12	10
C. Standards Implementing Guidelines to be issued	50	10	15	15	10
D. Product Testing to be conducted					
- Samples to be tested	4000	750	1250	1300	700
- Test Reports to be issued					
<u>PROGRAM 3. LABORATORY ACCREDITATION</u>					
A. Laboratory Assessment Reports to be evaluated	22	2	4	10	6
B. Laboratories to be accredited	3		1	1	1
<u>PROGRAM 4. STANDARDS PROMOTION</u>					
A. Exhibitions to be conducted	30	4	10	10	6
B. Publication Projects to be conducted	6	6	6	6	6
C. Sectoral Dialogues/Information Seminars to be conducted/to be participated in	20	3	6	6	5
<u>PROGRAM 5. QUALITY CONTROL ASSISTANCE</u>					
A. Quality Control Training Seminar					
- For Clients	11	1	3	5	2
- For Staff	22	3	8	7	4
B. Quality Assurance Consultancies to Clients					

a) Agricultural Standards :

- 1) Food

b) Building and Construction Standards :

- 1) Lumber/wood products
- 2) Pipes, fittings, valves
- 3) Pre-coated/plastic roofing sheets
- 4) Glass windows/steel frames

c) Chemical Standards

- 1) PVC resins
- 2) Petroleum
- 3) Pesticides
- 4) Paints

d) Electrical/Mechanical Standards

- 1) lighting fixtures
- 2) Wires and cables
- 3) Household appliances
- 4) Automotive and bicycle parts
- 5) Boilers
- 6) Gas cylinders/fittings
- 7) Fasteners (screws etc.)
- 8) Agri-machineries

e) Paper and board

- 1) Industrial packaging materials
- 2) Writing materials

f) Consumer goods

- 1) Toys
- 2) Garment sizes
- 3) Footwear sizes

2. Implementation Program of Standards Development in 1989

The fundamental and priority objectives of BPS in 1989 are in accordance with that of the previous year, although the following priority issues are selected to clarify the countermeasure.

A. STANDARD DEVELOPMENT

PROBLEMS	PROGRAM ACTIONS
1. Absence or lack of standards	1. Fast track development of standards
2. Clarification of criteria for Mandatory and voluntary	2. Institution building (for networking of BPS programs and services)
3. Mandatory - selective, based standards on these criteria: health and safety, energy conservation: foreign country requirement; high consumer impact	

B. STANDARDS IMPLEMENTATION

PROBLEMS	PROGRAM ACTIONS
1. Lack of information/awareness about standards	<ol style="list-style-type: none">1. Publications2. Training seminars3. Exhibitions4. Dialogues5. Consultancies
2. Lack of industrial manpower skills, testing facilities and quality control procedures	<ol style="list-style-type: none">1. Training seminars2. Publications3. Consultancies4. Lab accreditation
3. Lack of independent testing labs	<ol style="list-style-type: none">1. Company lab accreditation2. Foreign assistance/grants
4. Business sector's apathy, "not me, but him" attitude, low compliance with standards in certain sectors	<ol style="list-style-type: none">1. Publications2. Exhibitions3. Training seminars4. Dialogues5. Institution building (for networking of BPS programs and services)6. Legal actions
5. Lack of DTI/BPS manpower	<ol style="list-style-type: none">1. Institution buildings (for networking of BPS programs and services)2. DTI recruitment
6. Lack of cooperation by certain government agencies, private organizations and consumers	<ol style="list-style-type: none">1. Publications2. Training seminars3. Dialogues4. Institution building (for networking of BPS programs and services)

C. Number and priority field of Standard Development Programs in 1989 are as follows.

1. Number of Standards Development Program : 170

2. 1989 Priorities for Standards Development :

a) Electrical (Safety) *

- 1) Decorative bulbs (Incandescent)
- 2) Luminaries
- 3) Room air conditioners
- 4) Water heaters
- 5) Rice cookers
- 6) Toasters/Ovens
- 7) Flat iron
- 8) Micro wave ovens
- 9) Electric fan
- 10) Washing machine
- 11) Small transformers
- 12) Radios
- 13) Televisions
- 14) Stereos
- 15) Cassette Records
- 16) Re-winders (Beta /VHS)

b) Building and Construction (Dimensions)*

- 1) Channel sections
- 2) Steel and aluminum doors
- 3) Furnitures (tables, chairs, school desks and beds)
- 4) Ductile iron castings (faucets)
- 5) Electroplated coatings of gold and silver
- 6) Bathroom accessories
- 7) Paints and lacquers (PAPM)
- 8) Adhesives

c) Packaging (Dimensions)

- 1) Glass finishes
- 2) Fiber board boxes
- 3) Plastic containers
- 4) Tin cans

d) Mechanical (Dimensions and Interchangeability)

- 1) Bolts and nuts per application such as for use in home appliances, car and the others
- 2) Small tools (screw drivers, pliers, spade, wheelbarrow)
- 3) Metal components (pulleys, gears, shafts etc.)
- 4) Boilers
- 5) V-belts, flat belts
- 6) Gas cylinders (acethylene/oxygen) : CGA
- 7) Aerators : AMTEC
- 8) Refrigerator components (compressors, insulation materials, plug cords, etc.):PARES
- 9) Room air conditioners components (compressors, evaporator coils, condenser coils, etc.):PARES
- 10) Welding electrodes

e) Consumer Goods (Performance/ Dimensions)

- 1) Rubber and rubber products
- 2) Tapes
- 3) Cutlery
- 4) Cook wares
- 5) Plastic wares
- 6) Air pots
- 7) Flat wares
- 8) Mattresses/Blankets/Linens
- 9) Pillows & pillow cases
- 10) Baby walkers and cribs

f) Chemicals (Performance)

- 1) Extinguishing agents
- 2) Paper and paper products
- 3) Two stroke motor oil
- 4) Dental materials
- 5) Soap and Detergents- Coco based products

g) Agricultural & Food

- 1) Ethnic foods
- 2) Code of practice for the manufacture of plastic items

h) Office Supplies (Dimension / Performance)

- 1) Blackboards/whiteboards
- 2) Stapler and staple wires
- 3) Puncher
- 4) Paper clips
- 5) Pencils
- 6) Markers
- 7) Typewriter and computer ribbons

Attached Information 4: List of Technical Committees

	<u>Name of Technical Committee</u>	<u>No. of Committee Members</u>
TC 1	Wires and cables	12
TC 2	Fire protection and fire fighting equipment	9
TC 3	Cement and lime	9
TC 4	Lamps and related equipment	13
TC 5	Concrete, reinforced concrete and pre-stressed concrete	11
TC 6	Gas cylinder	11
TC 7	Surface active agents	11
TC 8	Safety matches and lighters	8
TC 9	Batteries and cells	10
TC10	Wiring devices	12
TC11	Steel	11
TC12	Petroleum products and lubricants	10
TC12/SC1	Carbon black	7
TC13	Chemistry	9
TC14/SC1	Acid and alkali	2
TC14/SC2	Gas	1
TC14/SC3	Adhesives	1
TC14	Fertilizers and soil conditioners	11
TC15	Rubber and rubber products	9
TC16	Sizing system and designation of clothes	6
TC17	Textiles	16
TC18	Machineries for Agriculture and forestry	11
TC19	Agricultural food products	8
TC20	Paper, board and pulps	14
TC21	Lumber and wood products	9
TC22	Cooking and heating appliances	14
TC23	Plastic Products	13
TC24	Paints and varnish	9
TC25	Safety on toys and children's playthings	10
TC26	Leather	-
TC27	Glass and glass products	12
TC28	Ceramic and ceramic products	12
TC29	Household appliances	11
TC30	Pesticides	11
TC31	Coal	16
TC32	Metal casting	11
TC33	Doors and windows	11
TC34	Plywood and veneer	10
TC35	Metallic coatings	8

Attached Information 5: Steps of Standards Preparation Activities

The development of national standards is conducted in compliance with "A Standard for Standards (manual)".

Step I: Formulation of Implementation program for Standardization by BPS and set-up and operation of Technical committee.

The BPS draws a program of work on standardization, taking into account the needs and interests of industry, trade, consumers, academe, professionals and government. Other factors include: (a) developments in science and technology; (b) new products and materials developed; (c) availability of resources in the country, such as technology, processes and materials; (d) public health and safety; and (e) national economic development objectives. In the preparation of its work program, the BPS welcomes requests or proposals from interested parties to develop a standard for a specific subject or to revise an existing standard. As a matter of policy, the BPS reviews all existing national standards to keep them updated and therefore relevant to the changing needs of users.

Technical committees (TCs) are formed with specific product group assignments; whenever necessary, sub-committees (SCs) and working groups (WCs) are likewise formed to expedite the work of the TCs. So that resultant standards are meaningful and realistic in the light of a dynamic environment, the TCs, SCs and WGs have representatives of the BPS, manufacturers, consumers, academe, professionals and other government agencies as members.

Step II: Preparation for a Draft of a Standard by BPS and Formulation of Committee Draft.

Based on researches that also examine existing international standards and in consultation with sectors concerned, the BPS prepare a draft of a standard. It is submitted to the relevant TC for intensive deliberation. Once a consensus on vital issues is attained, a committee draft is issued by the TC.

Step III: Circulation of Committee Draft to all Parties or Sectors Concerned.

The committee draft is forwarded and circulated through the Director of the BPS for a month's duration to all parties or sectors concerned for comments and suggestions. Recipients of the committee draft include all potential users of the standard envisaged.

Step IV: Review of Comment on Committee Draft by Technical Committee.

After the lapse of the commentary period, all comments on the committee draft are evaluated by BPS' technical staff and presented to the appropriate TC for consideration.

Step V: Opening of General Public Hearing for Reviewing Modified Committee Draft.

After due deliberation and incorporation of all the modifications necessary, another draft is prepared by the TC and is presented to a general public hearing for further comments and suggestions.

Step VI: Formulation of Final Draft Standard and Approval and Promulgation as National Standard.

Finally after due consideration and evaluation, the final draft standard is prepared and submitted to the Secretary of Trade and Industry for approval and promulgation as a national standard.

Step VII: Publication of National Standard.

The national standard is then published in the Official Gazette or a newspaper of general circulation, in case of mandatory standard. However, voluntary standard is only circulated in print with no publication of the official gazette or any newspaper.

Attached Information 6: Memorandum of Agreement on Close Coordination and Collaboration for Standardization with Private Industry

The content of the above-mentioned agreement with industrial associations is almost similar, and the outline of agreement between BPS and the Philippine Air-conditioning and Refrigerating Engineers Society (PARES) is shown below as an example of that agreement.

- (1) The BPS and the PARES shall promote the general adoption of the standards, codes of practice and other standardization aspects.
- (2) The Philippine standards, which are national standards recognized as such in the country, shall emanate from the BPS and shall prevail at all times.
- (3) The PARES shall furnish the BPS with their annual program on standardization in order to coordinate all work programs for standardization at the national level.
- (4) The PARES shall submit to the BPS all standards for approval and adoption as national standards.
- (5) All BPS/PARES standards so approved and adopted as national standards shall include in their titles "PNS/PARES".
- (6) The BPS/PARES may publish all voluntary Philippine National Standards.

Attached Information 7: Memorandum of Agreement on Close Coordination Collaboration for Standardization with Governmental Agency

The agreement with governmental agency, which develop and conduct the standards and codes, is similar to the following agreement. A example of the agreement between BPS and BFAD is shown below.

- (1) The PSA and the BFAD shall promote the general adoption of standards, codes of practice and other aspects of standardization.
- (2) The Philippine Standards which are recognized as the country's National Standards shall emanate from the PSA. The BFAD shall be responsible for the formulation, promulgation and implementation of standards and codes of practice relating to drugs, cosmetics and processed foods.
- (3) The PSA shall formulate standards of products not otherwise covered by the BFAD.
- (4) Upon consultation with the BFAD, the PSA may recommend standards for certain products which are under the jurisdiction of BFAD, for consideration and approval of the Minister of Health.
- (5) The BFAD shall submit to the PSA all standards prepared by the BFAD for accreditation as National Standards.

Attached Information 8: JIS Adopted as PNS

<u>Designation</u>	<u>Date</u>	<u>Title</u>
JIS B 1501	1983	Steel balls for ball bearings
JIS B 7721	1873	Tensile testing machines
JIS C 2320	1982	Electrical insulating oils
JIS G 1211	1981	Iron and steel, methods for determination of carbon
JIS G 3103	1977	Carbon steel and molybdenum alloy steel plates for boilers and sure vessels
JIS H 0401	1983	Methods of test for hot dip galvanized coatings
JIS Z 2201	1980	Metallic materials, test pieces for tensile test
JIS Z 2204	1969	Metallic materials, test pieces for bend test
JIS Z 2241	1980	Metallic materials, method of tensile test
JIS Z 2247	1977	Erickson cupping test
JIS Z 2248	1975	Metallic materials, method of bend test

Attached information 9 :

LIST OF MANDATORY STANDARDS

Number	Name of Mandatory Standards
PNS 02 : 1983	Specification for Tubular Fluorescent Lamp for General Lighting Service
PNS 03 : 1983	Specification for Steel Cylinders for Liquefied Petroleum Gas (LPG)
PNS 04 : 1983	Specification for Automotive Liquefied Petroleum Gas (LPG) Steel Cylinders for Use in Motor Vehicles
PNS 05 : 1983	Code of Practice for Use of Liquefied Petroleum Gas (LPG) System in Internal Combustion Engines
PNS 06 : 1983	Specification for Automotive Lead-Acid Storage Batteries
PNS 07 : 1983	Specification for Portland Cement
PNS 09 : 1983	Specification for Safety Matches for Commercial)
PNS 12 : 1983	Specification for Ballasts for Tubular Fluorescent Lamps
PNS 13 : 1983	Specification for Electrical Cartridge Fuse
PNS 14 : 1983	Specification for Unplasticized Polyvinyl Chloride (uPVC) Electrical Conduit
PNS 15 : 1983	Specification for Portable Fire Extinguisher
PNS 16 : 1984	Specification for Concrete Hollow Blocks Type 1
PNS 25 : 1984	Specification for Pneumatic Tires
PNS 26 : 1984	Specification for Black and Hot-Dipped Zinc-Coated (Galvanized) Longitudinally Welded Pipes for Ordinary Uses
PNS 27 : 1984	Rules for Classification, Fire Testing and Rating of Portable Fire Extinguishers
PNS 34 : 1984	Specification for Rubber Inner Tube for Pneumatic Tires (Automotive, Trucks and Other Ground Vehicles)
PNS 35 : 1983	Specification for Thermoplastic Insulated Electric Wires and Cables

Number	Name of Mandatory Standards
PNS 38 : 1984	Specification for Incandescent Lamps for General Service
PNS 40 : 1984	Specification for Copper Redraw Rod for Electrical Purposes
PNS 41 : 1986	Methods for the Requalification of Liquefied Petroleum Gas (LPG) Cylinder
PNS 42 : 1986	Specification for Lampholders and Starterholders for Tubular Fluorescent Lamps
PNS 43 : 1984	Specification for EC Aluminum Redraw Rod for Electrical Purposes
PNS 45 : 1984	Specification for Starters for Fluorescent Lamps
PNS 49 : 1986	Specification for Steel Bars for Concrete Reinforcement
PNS 55 : 1986	Specification for High Density Polyethylene (PE) Pipes for Portable Water Supply
PNS 63 : 1987	Specification for Pozzolan Cement
PNS 67 : 1986	Specification for Galvanized Steel Sheets and Coils
PNS 68 : 1986	Specification for Fire Hose
PNS 77 : 1986	Specification for Carbon Steel Wire Rods
PNS 74 : 1987/UL1570	Specification for Fluorescent Lighting Fixtures
PNS 79 : 1986	Specification for Pressure Sensitive Adhesive Polyvinyl Chloride (PVC) Tapes for Electrical Insulation
PNS 80 : 1986	Specification for Edison Screw Lampholders
PNS 99 : 1987	Specification for Pressurized Kerosene Stoves
PNS 100 : 1988	Safety and Performance Requirements for Liquefied Petroleum Gas Stove for Household Use
PNS 103 : 1987	Specification for Medical Grade Oxygen in Cylinders
PNS 105 : 1986	Specification for Ballasts for High Pressure Mercury Vapor Lamps

Number	Name of Mandatory Standards
PNS 109 : 1987	Specification for Polyvinyl Formal Enameled Copper Wires
PNS 110 : 1987	Specification for Polyester Amideimide Enameled Copper Wires
PNS 111 : 1987	Specification for Oleo-Resinous Enameled Copper Wires
PNS 130 : 1988	Specification for Safety Glass for Automotive Application
PNS 134 : 1987	Safety Requirements for AC Electric Fans
PNS 135 : 1988	Specification for Electronic Ballast
PNS 136 : 1987	Specification for Steel Wire Nails
PNS 137 : 1988	Packaging and Labelling Safety Requirements for Toys
PNS 173 : 1988	Dimensions and Tolerances of Sawn Timber (Lumber)
PNS 189 : 1988	Specification for Lighting Sets Using Miniature and Sub-Miniature Lamps for Decorative Purposes for Indoor Use
PNS 194 : 1989	Specification for Sawn Timber (Lumber)
PNS 196 : 1989	Specification for Plywood
PNS / DOT	Specification for Motor Vehicle Brake Fluids
3, 4, 5	

Attached Information 10: Standard Promotion Activities of BPS

1. Publications

The following publications are issued by BPS and widely circulated.

a) Standardization and its Benefits

The publications explain the meaning, use and benefit of the standardization, types of standards, operation of BPS and development of standards etc. with plain words and illustrations.

b) Various Services of BPS

The publications show the various operations of BPS plainly.

c) Catalogue of Philippine National Standards

The code, price, title, and scope of each PNS is described respectively. The period and content of revision made are added in case of the updated PNS. A catalogue of 1988 comprises of parts classified by standard code and by subject.

d) BPS Quarterly

The BPS Quarterly is issued quarterly to introduce the recent trends and information of the standardization, containing new standards or guidelines, progress of standard development, content of essential standards, related information on on-going Standard Council and TCs and their decisions, guidance of seminars and lectures, name of PS Mark manufacturers and their products, collaboration with related industries, and other activities.

e) Annual Report

The annual report of BPS in each year is published to outline the actual performance in contrast with the previous year's performance.

For instance, the annual report of 1988 gives the actual performance and various articles featuring new standards, factory assessments, approved PS mark licensee listing, issuance of ICC, product assessment, accreditation of laboratories, technical extension service, seminars, publications, exhibitions, legal actions, participation to

the international events related to standardization, technical cooperation and other activities.

f) List of PS Licensees

The latest approved PS mark licensee listing is published and circulated quarterly. This list shows the names of manufacturers granted the license to use the PS Quality Mark, its product, and its brand name. It also contains name of manufacturers which were not operated, re-evaluated, and put on trial. It therefore contributes to the use in the procurement of BPS-certified products by government and in general purpose.

g) List of Importers with the Import Commodity Clearance

This list is published to give the name of importers and products approved for import in compliance with mandatory standards. It contributes to the use in the procurement of BPS-certified products by government and in general purpose, as item f) does.

The BPS also helps promote standardization and metrication through the publication of poster and newsletter in the event of national convention etc.

2. Seminars and working groups

The objectives of seminar are largely divided into two types; one type of seminar aims to give related information on the contents, scope and considerations in use of the standards in case of the enactment and amendment of essential standards, or to disseminate people concerned and make them understood in case of important policy or new policy. The other type of seminar places an emphasis upon communication for purpose of disseminating the standardization. The latter includes mainly meetings with crucial industrial associations and public organizations.

According to the actual performance in 1988, 28 seminars were conducted. Among them, 3 seminar on explanation to new standards, 9 seminars on government procurement of PS mark products, and 16 seminars on introduction and promotion of metrication are included. In 1988, 22 conventions/conferences were held including 19 conference with 12 major industrial associations and 3 other conferences with Standard Council, OEA, PMA and other organizations. 6,296 persons in total took part in these seminars and conferences. The actual performance in seminars and conference held in 1988 is shown in Table A2-10-1.

Table A2-10-1 SEMINARS AND DIALOGUES FOR STANDARD PROMOTION HELD IN 1988

Categories	Date	Place	Number of Attendants
1. Explanation of Newly Established Standards	3 times		60
a. Requalification of LPG Cylinder	1988-01-27 (1)	BPS	16
b. Nails, Steel Wire	1988-02-12 (1)	BPS	22
c. Marbles	1988-03-19 -21 (1)	Lonblon	22
2. Explanation of New Governmental Policy on Standardization	25 times		4,000
a. Government Procurement of PS Licenced Products	1988-02-12 -12-16 (9)	8 Cities (Metro Manila, Cagayan de Gro, Davao, etc.)	3,108
b. Metrication	1988-03-17 -09-07 (16)	14 Cities (Laguna, etc.)	892
3. Dialogues with Industrial Parties	19 times		1,906
a. Marble Tile Manufacturers' Association	1988-02-23 and 03-11 (2)	Metro Manila, Barcan	26
b. Fire Extinguisher Manufacturers	1988-03-04 and 04-22 (2)	Metro Manila	60
c. Paint Manufacturers	1988-03-29 (1)	Metro Manila	11
d. Philippine Paint Manufacturers' Association	1988-08-24 -09-02 (4)	Metro Manila, Cebu, Iloilo	1,055
e. Textile Manufacturers	1988-04-05 and 05-12 (2)	Metro Manila	15
f. Steel Wire Nails Manufacturers	1988-05-06 (1)	Metro Manila	15
g. Philippine Plating Association	1988-05-06 (1)	Metro Manila	11
h. Steel Bars Manufacturers	1988-05-13 and 05-24 (2)	Metro Manila	20
i. Pipes Conduit Manufacturers	1988-10-07 (1)	Metro Manila	25
j. Technicians of Air-Conditioning and Freezing	1988-10-14 (1)	Metro Manila	18
k. Union of Philippine Designers	1988-10-21 (1)	Metro Manila	400
l. PS Licence Holders	1988-10-12 (1)	Metro Manila	250
4. Other Dialogues	3 times		330
a. National Standards Council	1988-05-09 (1)	Metro Manila	15
b. Office of Energy Affairs (OEA)	1988-05-11 (1)	Metro Manila	15
c. Productivity Management Association (PMA)	1988-11-17 (1)	Metro Manila	300
Total	49 times		6,296

Note: Numbers in Parentheses show the number of seminars or dialogues held.

Source: BPS Annual Report 1988.

3. Exhibitions

BPS mobiles traveled in major cities to exhibit products of importance from the viewpoint of producers and consumers among the products mainly with PS Mark. BPS explains the objectives and importance of standardization to consumers, exporters and producers (particularly small- and medium-scale manufacturers) and also provide technical consultation for them.

The BPS mobile furnishes films, slides, audio-visual equipments such as VTR, pamphlets, various standards including PNS and foreign ones, and other supplements in addition to these PS mark products. In 1988, 17 exhibitions were held with a total number of more than 10,000 visitors, as shown in Table A2-10-2.

4. National Convention of Promoting the Standardization

National event for the promotion of standardization is held in National Standardization Week which is the second week of every October. Main events includes seminars and communications with various industries, industrial associations and consumers. The importance and effect of standardization, BPS policy, and on-going activities of BPS are main subjects of many of seminars.

In the conference with various industries and industrial associations, the promotion of BPS policy over the industrial sector and proposals/requests from the industrial sector reflect the strengthening of BPS administration through the discussion on BPS policy. The recent issues and countermeasures related to the standardization between the BPS and Industrial sector are also discussed.

In 1988, BPS have had seminars and meetings with representatives from related manufacturers, contractors, professionals and related government agencies in collaboration with CIAP (Construction Industry Association of the Philippines). The adoption of the existing standards and construction materials of sub-standard were the major issues. The proposed countermeasures were as follows.

- 1) To inspire the consciousness of consumers towards the quality
- 2) To introduce the PNS to the legislation system
- 3) To strengthen the monitoring of quality
- 4) To strengthen the administrative penalties

Furthermore, the explanation to government procurement of PS mark products and case study on the effect of quality improvement were presented in the conference.

Table A2-10-2 EXHIBITIONS HELD IN 1988

No.	Place	Date	No. of Visitors
1.	Manila	Feb. 17-21	257
2.	Cavite	Mar. 14-18	369
3.	Cavite	Mar. 21-26	435
4.	Manila	Apr. 11-17	400
5.	Laguna	Apr. 18-22	270
6.	Laguna	Apr. 25-29	362
7.	Manila	Apr. 27-May 1	320
8.	Laguna	May 14-18	267
9.	Camarines Norte	May 25-June 1	416
10.	Camarines Sur	June 2-8	800
11.	Laguna	June 29-July 1	624
12.	Batangas	July 4-8	526
13.	Laguna	July 18-22	1,006
14.	Laguna	Aug. 8-12	890
15.	Laguna	Aug. 15-19	526
16.	Barcan	Aug. 22-26	822
17.	Barcan	Sep. 5-16	2,182
Total			10,472

Source: BPS, 1988 Annual Report.

5. Dissemination by Mass Media

BPS carries out the promotion of standardization by means of publishing important notices in magazines and national newspapers such as Manila Bulletin, Manila Chronicle and Philippine Daily. Therefore, a total of 40-50 press releases were sent annually to various print media, and press dialogs were often held.

6. Dissemination through Library Service

The BPS accommodate its own library, maintaining and updating a full set of PNS, major international standards, and the standards issued by national standards bodies of other countries, together with their catalogues, journals and other publications. The BPS Library has a reference room, which receives inquiries, fills orders for copies of local, foreign and international standards, and metrication materials, and makes photo-coping service. The reference files for the BPS documents were processed and stored in personal computer, satisfying the inquiries from users. A total of around 30 users visit daily.

The BPS Library caters the information needs of users and promote the standardization and metrication by printing and dispatching the standards to government agencies, industrial associations and personnel concerned without any charge after the enactment and amendment of the standards.

7. Government Procurement of BPS Certified Products

DTI, DBM and COA promulgate a joint memorandum on procurement of supplies, materials, and equipment by government as of 1 October, 1987, and this circular took effect on 1 January 1988. the original purpose is maximum safety and efficient utilization of government resources, although government procurement has appeared to take a crucial role of promoting the industrial standardization to manufacturers (especially small-medium companies with weak capability of market development) and consumers since the government procurement occupies a large share of total demand. The BPS strengthens the collaboration with DBM and COA and promotes the government procurement of PS mark products by means of seminars and working groups with industrial associations and consumers and circulation of print materials. This circular has been reviewed further and taken effect as Executive Order No.359 on 2 June, 1989.

Attached Information 11: Outline of legislations relevant to Industrial Standardization

Many of the legislations relevant to the national standardization activities has taken effect in the Philippines. These legislations include acts, executive orders, department administrative orders and other legislations. The following ten legislations are essential to understand the background of the present standardization activities.

- (1) Executive order No.133, 1987 (EO No. 133-1987)
- (2) Republic Act No.4109, 1964 (RA No. 4109-1964)
- (3) Letter of Instruction No.1208, 1982 (LOI No. 1208-1982)
- (4) Standards Administrative Order No.20-3, 1987 (SAO No. 20-3, Series 1987)
- (5) Executive order No.913, 1983 (EO No. 913-1983)
- (6) A Standard for Standards -Manual, 1983
- (7) Department Administrative Order No.10, 1987 (DAO No. 10-1987)
- (8) Implementing Guidelines on Government Procurement of BPS-Certified Products
- (9) Department Administrative Order No.4 (DAO No. 4-1988)

Revised Rules and Regulations Concerning the Issuance of Import Commodity Clearance

- (10) Memorandum of Agreement on Joint Procedures for the Monitoring and Inspection of Imported Products Covered by Mandatory Philippine Standards

(1) EO No.133-1987

BPS of DTI has conducted the implementation and coordination of industrial standardization as execution agency in accordance with EO No. 133. According to this Order, the BPS conducts the following services.

- a) To review the products contained in the critical imports list in accordance with established national standards or relevant international standards and buyer-seller specifications
- b) To promulgate rules and regulations necessary for the dissemination of International System of Units (SI).
- c) To promulgate rules and regulations necessary for the country's shift to research on the various reference materials to be used as basis for the start of whatever analysis or evaluation is demanded by the products under examination or investigation.
- d) To establish standards for all products of the Philippines for which no standards have as yet been fixed by law, executive orders, rules and regulations and which products are not covered by the standardization activities of other government agencies
- e) To participate actively in international activities on standardization, quality control and metrology
- f) To ensure the manufacture, production, and distribution of quality products for the protection of consumers
- g) To test and/or analyze standardized and un-standardized products for purposes of product standard formulation and certification
- h) To extend technical assistance to producers to improve the quality of their products
- i) To check length, mass and volume measuring instruments
- j) To maintain consultative liaison with the International Organization for Standardization (ISO), Pacific Areas Standards Congress (PASC), and other international standards organization.

This Executive Order has taken effect in 26 July, 1987, with a view to the reorganization of DTI after the establishment of Aquino Government. These Executive Orders are equivalent to Ministerial Ordinances in Japan, and tend to be a lack of the embodiment in

promoting, implementing and coordinating the operations. DTI has formulated various regulations, announced the guidelines and implemented industrial standardization.

The followings have been closely related to the present and planned operations of BPS, prior to the date of the enactment of this Executive Order.

(2) RA No.4109-1964

This Act was promulgated in 20 June, 1964 and has contributed to strengthening and expansion in implementing the industrial standardization. The enhancement and strengthening of BPS's operation was done through the transfer from Standard Section, Bureau of Commerce, Department of Commerce and Industry (DCI), predecessor of DTI, to Bureau of Standard (BS), DCI, in line with the expansion of organization. This Act is one of the important legislations which contributed to the building-up of foundation for industrial standardization. The formulation of national standards of the Philippines has been commenced since 1965, although this Act took effect in 1964. The Act is briefly outlined as follows.

The Operation to be undertaken by BS

- a) To have charge of the establishment of standards on all agriculture, forest, mineral, fishery, industrial and all other products of the Philippines for which no standards have as yet been fixed by law, executive order, rules and regulations and the inspection and certification of the quality of commodities imported into the Philippines
- b) To determine the country of origin of the articles which are exported from the Philippines, and determine if they satisfy the buyer's or importer's requirements or specifications for domestic consumption.
- c) To determine the country of origin of the articles which are imported, and determine if they satisfy the buyer's requirements or specifications for export.
- d) To prohibit the discharge and/or release of any article which are imported from the country without trade relations with the Philippine government.
- e) To bid logical and/or chemical tests or analysis necessary for the examination of products under the provisions of this Act may be undertaken in any branch of the Government having facilities for the purpose until such times as BS may have its own facilities.

- f) To make a decision on fees and charges for such services as testing, certification, assessment and other analysis, and collect these fees and charges.
- g) To place a company, individual, and association under investigation in case that they act against this Act.

(3) LOI No.1208-1982

This letter of Instruction was ordered by President of the Philippines in 9 March, 1982. At that time a fire broke out frequently due to the sub-standard electrical wires, materials, components and devices, and early detection of fire may be able to extinguish by proper use of fire protection and fire fighting equipment. The Instruction ordered the Ministry of Trade and Industry (MTI) and the Chairman of the Board of Investments (BOI) to take the following countermeasures:

- a) To require all firms engaged in the manufacture, importation and/or distribution of electrical wires, materials, components and devices as well as fire protection and fire fighting equipment, systems and devices to have their products qualified prior to distribution and sale in the market
- b) To make their manufacturing processes comply with the requirements of overall product quality assurance
- c) To establish in their factories quality control schemes under the supervision of the Product Standards Agency (PSA: predecessor of BPS).
- d) To transfer the following authority and responsibility to the PSA
 1. To give clearance for the manufacture and/or importation of electrical wires, materials, components and devices as well as fire prevention and fire fighting equipment systems and devices, and such clearance should be imposed as a prerequisite before any manufacture and/or importer is permitted to distribute and sell his products to the public.
 2. To inform the consuming public of the findings on the quality of products.
 3. To order the withdrawal of unqualified products from the market.

According to the Letter of Instruction, the PSA and BPS, the successor have been in charge of the formulation of standards for products and strengthening of certification system in this field.

(4) SAO No.20-3, Series 1987

This Administrative Order was ordered by MTI according to Republic Act No. 4109, and is a regulation applicable for granting the license of PS Certification Mark to producers and manufacturers. The industrial standards and certification system was not originally established by the enactment of this SAO, although this SAO is a regulation that revised and expanded the detailed rules pertaining to the conventional certification system.

a) Commodity for Certification

Any product may be granted the license of PS Certification Mark as far as the product is stipulated in the National Standards. The standards and specifications for commodities include those adopted and/or accredited by the PSA and any other standards, together with the standards of which has been or may be promulgated by the Director and approved by the Minister of Trade and Industry.

b) Authority and Responsibility of PSA

PSA (Predecessor of BPS) has the following authority and responsibility in implementing the certification system.

1. To specify a standard mark which shall be known as the Philippine Standard Certification Mark.
2. To grant, renew, suspend or cancel a license to use the Standard Mark.
3. To assesses the manufacturing firm as to its compliance with the "Guidelines for Assessing the Quality Control Systems of Manufacturing Firms Relative to the Issuance of the License to Use the PS Certification Mark" issued by PSA.
4. To conduct assessment of the plant facilities of a person applying for license to use the Standard Mark and to draw sample as may be necessary for testing and analysis relative to the evaluation of the qualification of the applicant.
5. To enforce and regulate the proper use of the Standard Mark.
6. To collect fees in accordance with existing rules and regulations on fees.
7. To conduct surveillance visits on the plant facilities of grantees of the license to use the Standard Mark.

8. To require the submission of documents, papers, invoices, inventory records, etc. to determine compliance by the licensee, regarding foreign rules and regulations relative to production, sale, and disposition of goods, and/or manufactured products covered by the license.

c) Indication of PS Mark

The Standard Mark shall be printed, etched or embossed on the commodity. In case there is no space on the commodity or if the product is of such nature that the placing of the standard mark is not possible, it shall be printed, etched or embossed conspicuously on the cover and/or label of the commodity.

d) Application for, Grant or Denial of License

1. The application for the grant or renewal of a license to use the PS Mark shall be made on PSA Form No.5 (present BPS Form No.5). The application shall be filed with the PSA Central Office or with the Regional Office of MTI which has jurisdiction over the area where the manufacturing plant is located. A separate application shall be made for each product covered by a particular Philippine Standard, or an approved international standard.
2. The corresponding license is issued with respect to the commodity produced/manufactured by the applicant. The PSA is entitled to give terms and conditions in granting the license according to the present regulations.
3. The license of PS Certification Mark is not transferable.

e) Denial of License

Any license granted under the provisions of this order may be canceled or annulled on any or all of the following grounds:

1. That the commodity bearing the standard mark fails to meet the requirements of the relevant Philippine Standard as determined after due tests prescribed by the relevant Philippine Standard or an approved international standard by the PSA or its accredited testing laboratory.
2. That the licensee fails to comply with any or all of the terms and conditions of the license.

APPLICATION FOR LICENSE TO USE THE PHILIPPINE STANDARD CERTIFICATION MARK

(This form should be accomplished in triplicate)

PS Original

(Date)

The Director
Bureau of Product Standards
Department of Trade and Industry
Trade and Industry Bldg.
361 Gil J. Puyat Avenue
Makati, Metro Manila

Sir:

In accordance with Standards Administrative Order No. 20-3, promulgated pursuant to Section 79 (B) of the Revised Administrative Code of the Philippines and Executive Order No. 101, Series of 1967, in conjunction with the provisions of R.A. 4109, we hereby apply for the license to use the Philippine Standard Certification Mark.

1. Name of Applicant Firm _____
(If corporation or partnership, attach certified true copies of articles of incorporation, partnership including amendments and certificate of registration with the Securities and Exchange Commission. If single proprietorship, attach a certificate of registration of business name).
2. Office Address and Telephone No. : _____

3. Factory Address and Telephone No. : _____

4. Product: _____
5. Type/Description : _____
6. Relevant Standards : _____
7. Brand Name/s of Product/s : _____
8. Name of Duly Authorized Representative: _____
9. Position of Duly Authorized Representative : _____
10. Telephone Number of Duly Authorized Representative : _____
11. Name of Company President: _____

12. Plant Rated Capacity

13. Actual Capacity

14. Volume of Production during the last three (3) Calendar Years:

Year	Production	Value
_____	_____	_____
_____	_____	_____
_____	_____	_____

15. Inspection and Test Plan:

Specify each inspection and test point including frequency and the sampling methods followed in relation to: (Use a separate sheet if necessary)

a) Raw Materials

b) In-process materials

c) End-product

16. Measuring and testing equipment

Enumerate measuring and testing equipment available and indicate frequency of checking and calibration including utilization

Name of Equipment	Quantity	Year in Operation	Last Calibration	Frequency of Calibration	Utilization (In-coming materials, in-process materials etc.)

17. Documentation

List down main documents as a basis for quality control (Q.C. Manual, Standard Specification, Inspection and Test Procedures) and attach the organizational chart of the Company.

18. Records

List down records kept, control charts and forms used for quality control purposes

Title	Utilization (In-coming inspection in-process, end-product inspection)	Description	Person Responsible
:	:	:	:
:	:	:	:
:	:	:	:
:	:	:	:
:	:	:	:
:	:	:	:
:	:	:	:
:	:	:	:
:	:	:	:
:	:	:	:
:	:	:	:
:	:	:	:

19. Quality Control Inspection Staff

List down all personnel performing Q.C. activities including respective qualifications.

20. Have tests been conducted on the product by other laboratories for which a license is being applied? (Specify)

In the event the license is granted, we hereby agree to abide by all terms and conditions and all other rules and regulations including amendments there to, prescribed for its use.

(Signature)
President

Subscribed and sworn to before me this _____ day of _____
19 _____, affiant exhibiting to me his/her Residence Certificate A/B No. _____
issued at _____ on _____.

Notary Public

Doc. No. _____
Page No. _____
Book No. _____
Series of _____

3. That the licensee made false statements in connection with its application for the grant of the license.

f) Conditions for Grant of License

1. The licensee shall use the Philippine Standard Certification Mark (PS Mark) only on its own product which is covered by a valid license to use the PS Mark.
2. The licensee shall permit and grant duly authorized assessors of the PSA free access to its plant precinct, facilities, production and such other records as may be necessary for the conduct of periodic inspection at any time, within regular plant hours, during the lifetime of this license.
3. The licensee shall pay the PSA required marking fees, in accordance with existing rules and regulations on fees.
4. The licensee shall at all time maintain the quality of its product under license within the specification of the relevant National Standard or an approved international standard.

(5) EO No.913-1983

This Executive Order was ordered by President of the Philippines in 7 October, 1983 to grant the authority of formulating the regulations necessary for the implementation of the objectives of legislations pertaining to trade and industry. Such important objectives as damping protection of sub-standard products, smuggling of low quality products affecting the local garment and textile industry are included.

This Executive Order has some aspects of exercising strict control over the offenders against the legislations pertaining to trade and industry, although it has other aspects of formulating the standards for the commodity and disseminating these standards with the promotion of quality consciousness to both producers and consumers. This is one of the crucial tasks PSA has to undertake.

(6) A Standard for Standards-Manual 1983

This manual was published by MTI in 1983, and is one of the Philippine National Standards (PNS). It aims to showing concrete policy for development of standards and promoting the formulation of standards through the coordination of Technical Committees. This manual consists of the following five (5) parts;