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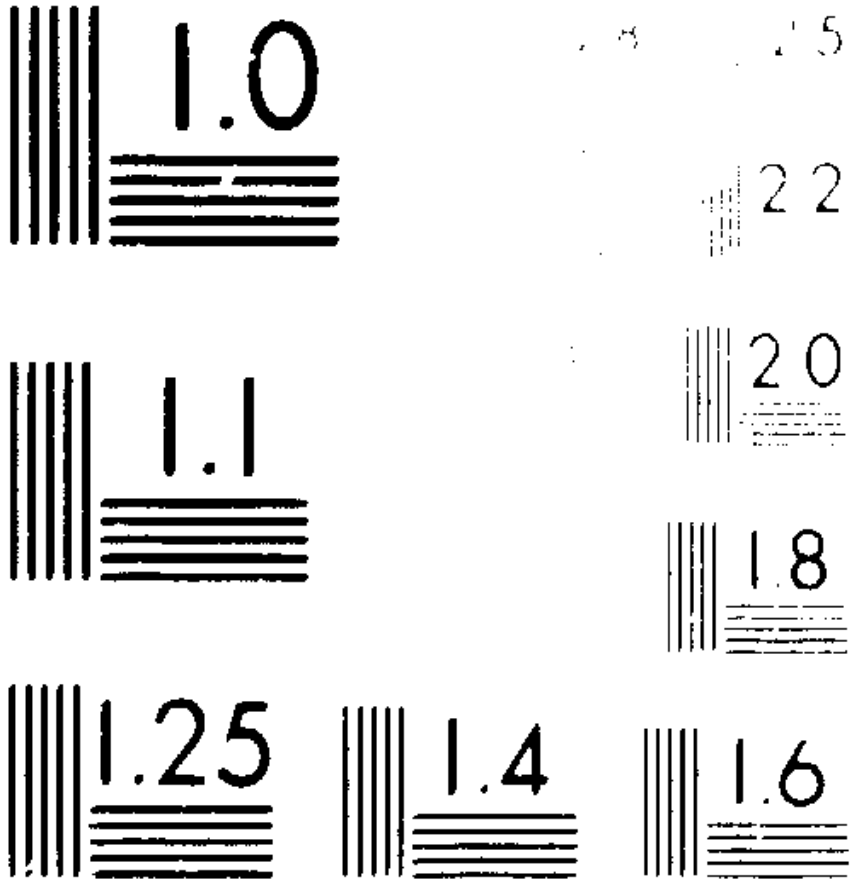
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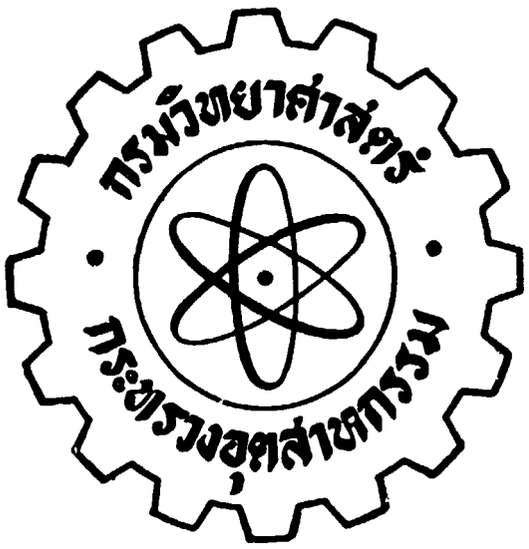


RESTRICTED

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION

FINAL REPORT

by

R.A. Hopper

Project Manager/Expert on Information for Standardization

on

DP/THA/72/027: THE THAI INDUSTRIAL STANDARDS INSTITUTE

31 July 1978

This report has not been cleared by
UNIDO and does not necessarily express
the views of that organization.

C O N T E N T S

ACKNOWLEDGEMENTS

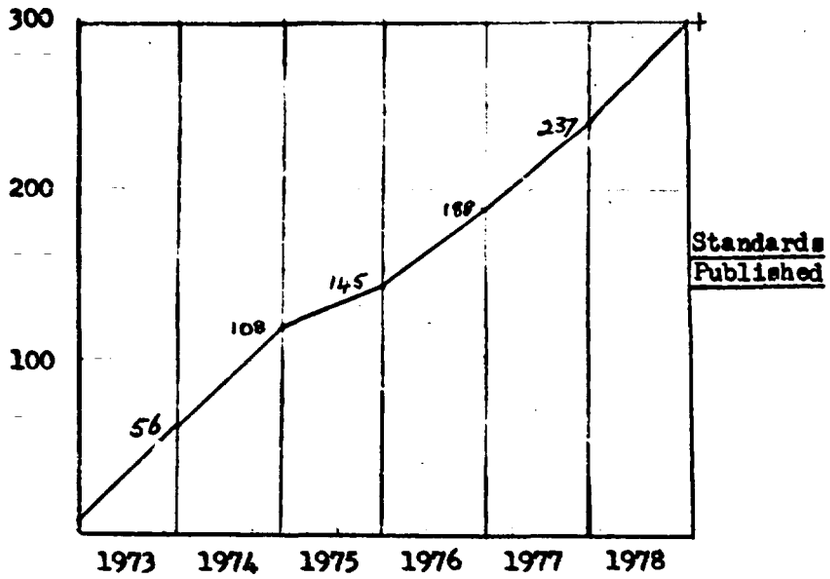
It is difficult to express proper appreciation of the great deal of assistance I have been given from many quarters and of the warmth with which this has been conveyed.

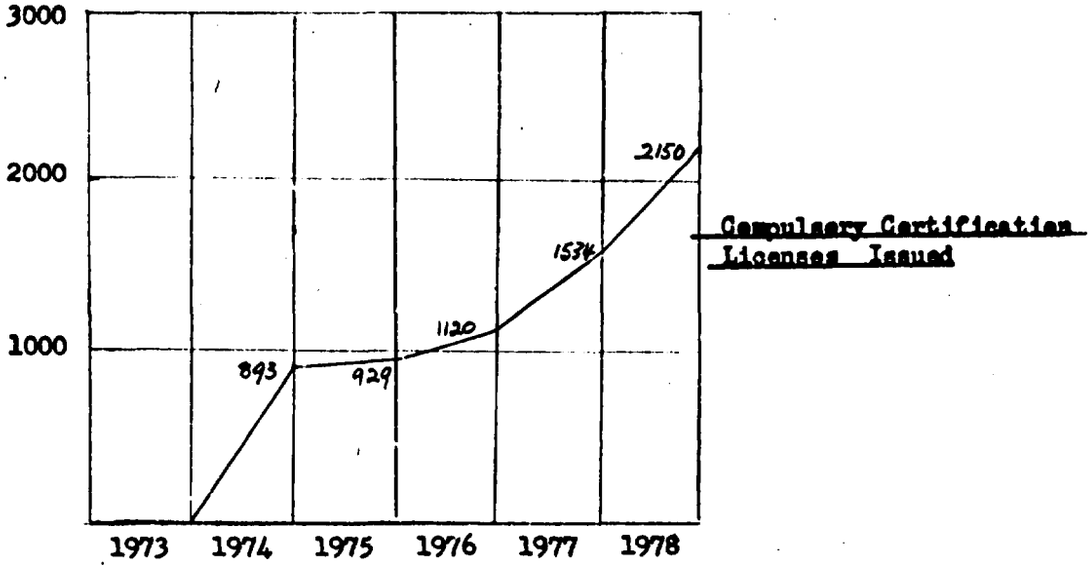
I wish to extend, not only appreciation, but admiration for the Acting Director of TISI, Mr. Chaiwai Sangruji, his two heads of departments, Mrs. Phani Na Rangsi and Miss Kanya Sinsakul, and the whole staff of the Institute. It is quite impossible to convey what they have achieved in an industrial and social environment which would have daunted many others in their profession. Whatever irritation and frustration I have displayed have been met with patience and understanding; on the other hand, whatever irritations they have felt about my attitudes have sometimes not been so kindly rewarded! There must have always been the danger that three highly qualified people, gradually coming to grips with all the ramifications of modern standardization, would feel on occasions some uneasiness under the critical eyes of colleagues from very different industrial environments. I have never felt this: what I hope was the case was that we had a mutual respect for each other to which, on my part, was added affection. With few exceptions they have proven aware of the country's needs, energetic and incorruptible and it has been a lifetime privilege to have worked with them.

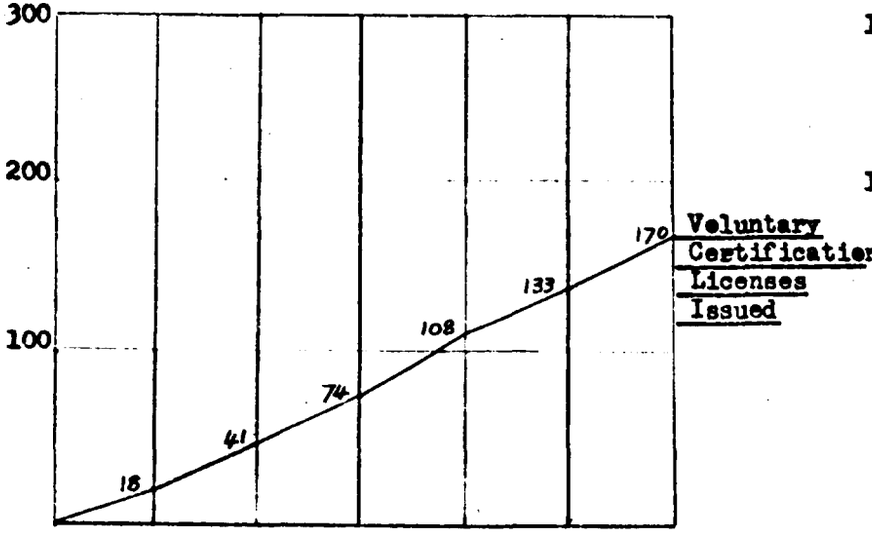
Although personal contact has been sporadic, cooperative appreciation of my position has been obvious from successive Under-Secretaries of State, Professor Yos Bunnag and Group Captain Vimol Viriyawit and various Ministers who have discussed the project. This feedback has also been apparent from the Standards Council, the members of which have shown themselves seriously involved and very conscious of their responsibilities.

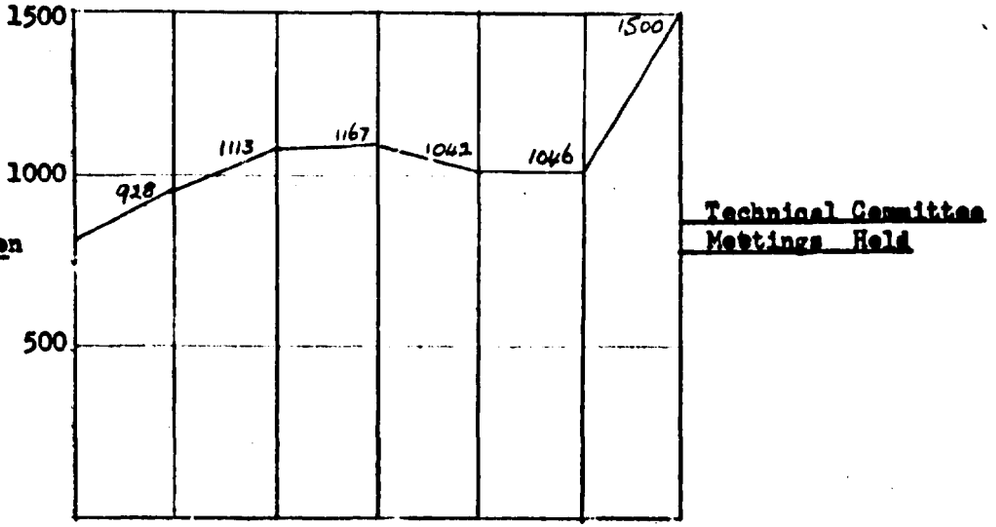
Excellent relations have been maintained with UNDP and UNIDO and with some members of the Department of Economic and Technical Cooperation, a relationship which undoubtedly made the job easier at certain periods, particularly on discussions which affected the future of the project.

The period of teamwork with Mr. Lars Wallden, former project manager, and Dr. Kenneth Stephens, was a considerable pleasure because of their undoubted knowledge and dedication to the project and I am grateful to them.

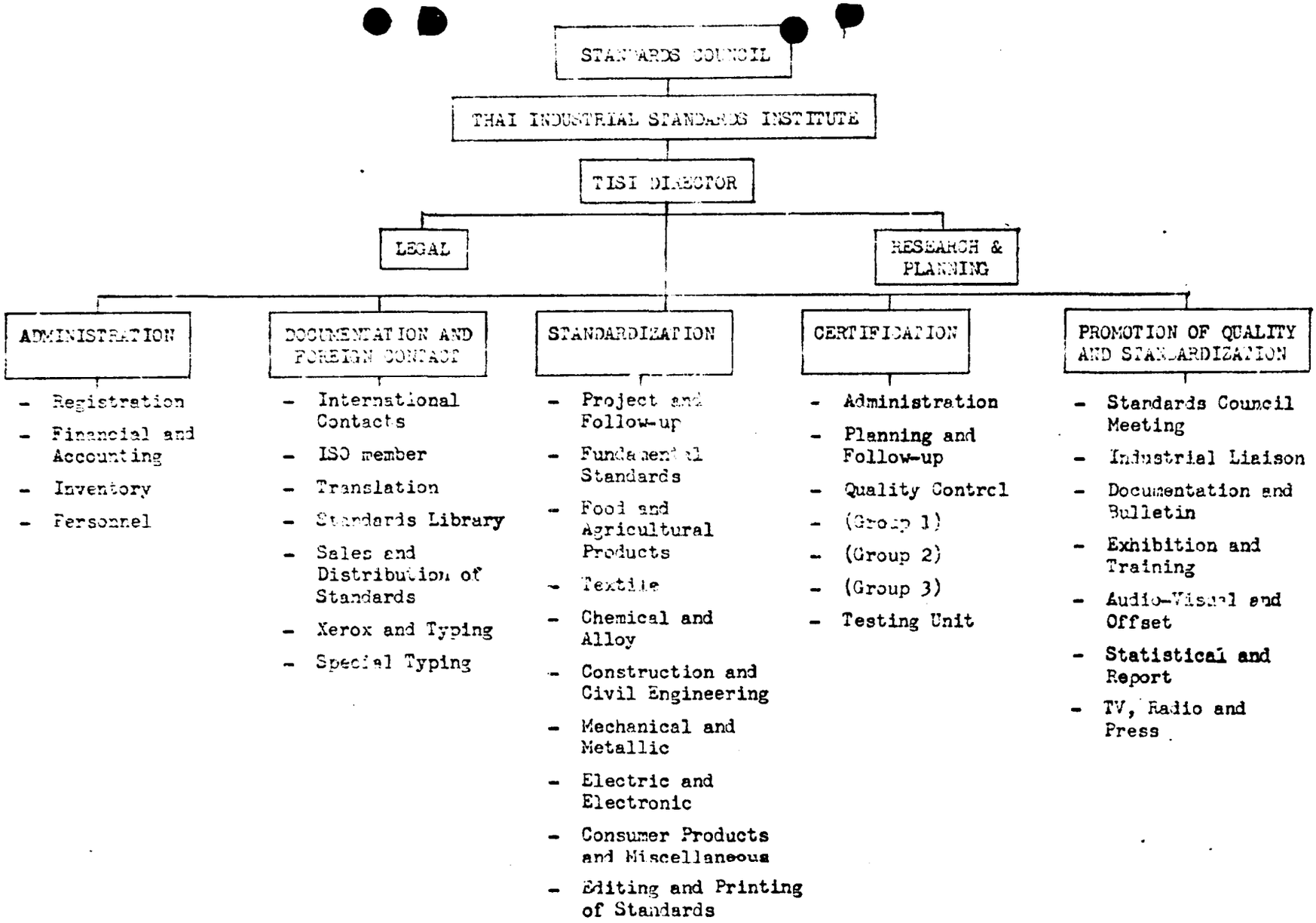








TISI PROGRESS GRAPHS 1973 - 1978


STANDARDS COUNCIL
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- Registration
- Financial and Accounting
- Inventory
- Personnel
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- International Contacts
- ISO member
- Translation
- Standards Library
- Sales and Distribution of Standards
- Xerox and Typing
- Special Typing
STANDARDIZATION
- Project and Follow-up
- Fundamental Standards
- Food and Agricultural Products
- Textile
- Chemical and Alloy
- Construction and Civil Engineering
- Mechanical and Metallic
- Electric and Electronic
- Consumer Products and Miscellaneous
- Editing and Printing of Standards
CERTIFICATION
- Administration
- Planning and Follow-up
- Quality Control
- (Group 1)
- (Group 2)
- (Group 3)
- Testing Unit
PROMOTION OF QUALITY AND STANDARDIZATION
- Standards Council Meeting
- Industrial Liaison
- Documentation and Bulletin
- Exhibition and Training
- Audio-Visual and Offset
- Statistical and Report
- TV, Radio and Press

1. INTRODUCTION

This report covers a period from March 1973, when a report on the Completion of Phase I was prepared, and September 1978, the completion of the expert's operation in the post.

Bi-annual reports have traced the progress of the project in detail and it is intended to cover the much broader issues, substantiating with detail where this is a key factor.

One thing needs to be said as a necessary adjunct to reading this report. Comparisons have severe limitations. The Thai people have individualistic emotional, moral, political and philosophical attitudes which affects everything they do, not least industrial development. For these reasons, there is little to be gained by comparing progress of TISI either against performances of developed countries or even other developing nations. It is small avail, for example, to arrive at conclusions about, say, the number of certification licenses which should now have been issued according to comparisons with X country, when TISI certification officers have been threatened with ambush and murder- a situation which renders such comparisons meaningless.

Appraisal can only be made against what, all things being equal, could have been achieved in Thailand.

It is intended that this report should be a critical evaluation, suggesting those targets and improvements which can be achieved in Thailand, and not those arising from good intentions based upon experiences in industrialised countries. What ever criticisms and recommendations are included cannot distort an inevitable conclusion that the project has been a remarkable achievement on the part of the Thai personnel involved and a successful application of UN Funds.

2. GENERAL STATUS AND POLICIES

As forecast, the Government has not been able to provide statutory instruments whereby TISI has become a body to "lead and direct standardization activities now being carried out by a number of existing bodies in Thailand" (Plan of Operation). Nor is it realistic to expect that it will ever do so, given the lack of machinery for coordinating many Ministries and Departments, each convinced of its own ability and authority to maintain control of various aspects of the national economy.

Nevertheless, TISI has achieved this ipso facto by virtue of personal liaison and agreements among officials, the representation of other Government Departments on the Standards Council and TISI's status as the national standards body representing Thailand at the International Organization for Standardization (ISO).

The situation has improved largely to the point where many Government and quasi-Governmental departments have agreed to use the TISI standards specifications in their own standards activities. Thus the civil engineering department of the Greater Bangkok Municipality now specifies construction work to TISI standards exclusively and its staff are equipped with relevant standards for inspection purposes. In the same way, the Ministry of Commerce's Office of Commodity Standards uses TISI standards where they exist to enforce its own control of exports e.g. tapioca and frozen shrimp. The Metropolitan Electricity Authority, the Provincial Electricity Authority the Housing Authority, Irrigation Department among others all stipulate and adopt relevant TISI standards as they are published. The National Electricity Authority has dropped its plan to issue certificates of safety with a safety mark.

The Board of Investment, which offers tax facilities and other means of encouraging industry, has issued a special booklet and makes it clear that more favourable consideration will be given to companies specifying TISI standards in building and any products produced.

Perhaps of the greatest overall significance is that all Government purchasing officers, whatever the Ministry, are required by Cabinet regulation to refer to TISI standards in purchasing and show preference for

products which are certified. If there is any reason to ignore this regulation, permission must first be sought from the Minister of Industry. TISI is the only Government body empowered to certify products under a national quality mark and the only one given legialative authority to enforce compliance where the product has been compulsorily standardized (See Appendix 4 j).

There are, however, flaws which disturb the smooth flow towards national cohesion. Some overlapping of standards still exists on food processing and the situation arose where the Budget Bureau rightly considered standardization as a basis for purchasing and wrongly considered doing this itself without personnel trained in the economic effects of standardization (stipulation of round steel bar of non-standard dimensions for furniture, for example, could cost the country unnecessary expenditure).

Yet such activities are compatible with a national standards effort. There is no reason to believe that standards activities on the part of the electricity authorities, Engineering Society of Thailand, the Budget Bureau, the Ministry of Public Health, the Codex Alimentarius Committee, cannot be made analogous to the situation in developed countries. No standards body in the world can cope with the demands made upon it today and the pace of development is often best served by sectorial 'specifications' - not standards - which can harmonize and clarify until such time as they can be made into national standards. The prime example of this lies in the American Situation in which there is a national standards body, now moving gradually towards Federal standards, which depends upon the specifications (standards) of thousands of industrial and independent bodies (ASTM and Underwriters' Laboratory, for example). This is also the case in Britain, - among other European countries - where the national standards bodies operate effectively with the Institute of Electrical Engineers and British Steel Corporation, two bodies among many which have their own standards which are aligned with both national and international requirements by the British Standards Institution as the occasion arises.

This is also possible in Thailand on a smaller scale but it does require statutory instruments for integration (See Recommendations).

Notwithstanding this, the emergence of TISI as the national standards body is confirmed by the level of consultative standing it has achieved. For example, foreign manufacturers and study groups are invariably sent to TISI; the Institute has been involved in ASEAN workshops and seminars as the Thai organization dealing with standards and certification; and the interest in standardization in public purchasing by such departments as the Office of the Prime Minister invariably involves discussions with the Director of TISI.

TISI holds in excess of 1200 technical committee meetings a year formulating new standards. It has on call some 3000 specialists for this purpose from all walks of life and this must put it into the position of being one of the most continuously active fora for industrial/Government/academic collaboration in the country.

Perhaps a significant comment on this may lie in the independent assessment of the United States National Bureau of Standards/USAID Survey published in February 1977:

> "...Peiser (Director) revisited TISI for a half-day because he judged this Institution to hold the key to progress in Thai standardization services."
>
> "The Survey Team members felt strongly that the achievements of TISI under given conditions was remarkable. A gradually increasing interaction with industry was foreshadowed with substantial benefits to Thailand."

Internationally, the Institute is recognized by the 80 countries represented in ISO as the organization in Thailand most able to represent Government and industrial involvement in standards matters and most capable of contributing to international harmonization. The Acting Director of the Institute has been appointed an honorary Regional Officer to represent SE Asia in ISO policy making, an appointment not made for 'political' considerations but because the Secretary General considered him the best man for the job in the area.

3. STANDARDIZATION

Standards are produced by the well-known method of concensus of opinion in technical committees, the membership of which consists of balanced representation from manufacturers, major users, appropriate Government Departments, university specialists and others having a close professional interest in the product. Each is invited by the Minister of Industry on the recommendation of the Institute.

It is anticipated that at the end of December 1978 the number of standards produced and published will be 300+(present 268). It is usual at this time to have a backlog of standards which have been prepared, approved and are only awaiting printing, so effectively the number will be in excess of this. In various stages of preparation will be 176 standards. The number of technical committee meetings for 1978 is likely to be 1500. 200 standards are programmed.

The preceding chart shows the publication of standards over the period. Between 1974 and 1978, a 'platform' target of some 50 standards a year was considered desirable in view of the staff situation, the need to consolidate standardsmaking techniques, train new staff and upgrade the level of technical committee representation. These targets were not met, mainly because the problems outlined later could not be resolved, particularly those of adequate staffing. But such shortfalls of targets in the preparation of standards can lead to false assumptions. It is virtually impossible to gauge the degree of activity by the number of standards produced. Some contain 20 pages of technical data and there is a general concensus of agreement from the first draft; others extend to over 100 pages and involve considerable disagreement and compromise. This is common to all national standards bodies. Nevertheless, special efforts have been made to raise the output of standards and a new figure of 70 for 1978 will almost certainly be reached.

Of the 268 standards listed, 143 are used in various degrees by industry or in Government purchasing, 25 are partially used for special purposes (research and testing) or are likely to be used soon for special purposes(e.g. the automobile series as a basis for requirements of the Government's Sub-Committee for Consideration of Automotive Parts and Components and growing list of parts which must be made locally).

Criticism of the fact that 100 seem moribund must be weighed against the difficulties encountered in certification and the fact that sudden opportunities arise for using these standards. For instance a demand by the airlines for suitable canned juices because of shortages abroad, enabled TISI to certify tomato, orange and pineapple juices already standardized some years before. Again, only one company used the standard for fish sauce for 4 years. Suddenly, commercial conditions accelerated the demand and there are now 9 licensees accounting for growing exports and internal adherence to safe standards.

As usual in the standardizing process, there have been conflicitng reports on the quality of these standards. On the one hand, industry subjecting its products for certification often complains that the standard is too high; on the other the assessments of some experts, major users and foreign observers such as manufacturers who want to buy to good standards is that some are too low. There are many examples of this: the standard for tapioca did not include a requirement for starch content (now revised), the standard for the lead content of ceramic glazing is too stringent on ceramic ware not intended for culinary use and the sampling and test procedures are out of date; the match standard does not include provision for controlling afterglow; the standards for upholstery leather are not compatible with the more exacting requirements of the trade in Germany (see Appendix 4.1); the standard for bicycles will not include requirements for a copper base to the chrome - an essential component if the chrome is to last.

Yet many other standards such as those for ballasts for fluorescent lighting are fully up to IEC/CEE requirements.

Since standards are formulated by the concensus-of-opinion method stated, flaws in such standards can be fairly ascribed to the strength or otherwise of committee chairmen.

The policy adopted by TISI - and to which the author personally subscribes - is that, at this stage of development, it is better to break a deadlock in committee on occasions by compromising with manufacturers in order to produce 'a standard'. The establishment of a standard familiarises industry, especially where certification is involved, with the use and application of standards specifications and from this basis it can subsequently be revised

to a tighter specification. This is an easier and more effective method in the situation in which Thailand finds itself than to insist on the utmost levels through Standards Council arbitration and find no one prepared to adopted the standard. This policy is educative within the broad national ambitions of an institute established in a country which was barely aware of standards six years ago.

In other cases of apparent weakness, there have been sound reasons for omitting technical clauses which might otherwise have seemed essential. The outdated laboratory method of testing samples for lead content in glazing is a practical step which recognises that the industry consists largely of private enterprise barely expanded beyond the 'cottage industry' status which does not have the more sophisticated equipment and is unlikely to get it. Concessions to protesting small producers in producing a special standard for re-rolled steel bar for reinforcement purposes eliminated the chemical test which they claimed they were unable to apply. But advice from metallurgists had previously indicated that, if all other tests were applied correctly, chemical conclusions could readily be drawn anyway. So the concession was, in fact, more of a political sop than a serious deterioration in the standard.

The pattern of standardization shown in the attached list has been variable, responding to demands from many Government departments, from industry itself which sought certain advantages, from the Engineering Society and other interested sources. Nevertheless, there are concentrations in the construction, electrical and textile industries - over 60 standards cover the construction industry alone. In each case, and in the case of many of the individual standards, the work reflected a severe need for such standards. The construction industry was chronically at the mercy of sub-standard components and materials; it was estimated that over 30% of ballasts (fluorescent lighting is used widely throughout Thailand) and 80% of the electric wiring was sub-standard; several charges were made that the textile industry exported too much sub-standard material; fish sauce was notoriously unreliable; locally made cosmetics and toiletries were also the subject of public warnings on the dangers of dermatitis and eye infections. And there was of course, the pre-eminent need to stop adulteration in the tapioca industry, about which more will be said later.

It is understandable that the work programme for TISI has been shaped by such obvious needs. Nevertheless, the time has perhaps come for some large-scale forward programming - or at least some attempt to define what may be needed in respect to the Five Year Plan and various Government proposals for the future. In this respect, some examination of the need for establishing standards reflecting international agreements for the steel industry, now being mooted as a possibility, in order to control any conflict between nationalities involved in a consortium; for definitions of what need to be standardized when natural gas reaches Bangkok and other areas - domestic equipment, industrial burners, safety measures and the like. This would then put Thailand in the position of stipulating certain specifications instead of having to accede to the impositions of the contracting companies. It would also prevent the import of such equipment from countries whose products may be suspect in terms of public safety.

It will also be important to react rather sharply to growing danger to the public. The greatest need lies for national standards for pressure vessels and a system of follow-up inspection and certification of installed equipment. Some months ago 'Business in Thailand' commissioned an American expert to review boiler installations. His report indicated a wide ignorance, both in local construction and maintenance. He forecast a series of explosions. He was tragically prophetic. This year alone there have been five boiler explosions with much loss of life and destruction. The Ministry should have reacted more quickly to this report.

One of the salient needs in many areas of the industrial economy is for Codes of Practice in which conditions of safe application and working conditions are specified and in which individual standards can be referred to. A large number of the factories seen by the author would be closed down under the various Factories Acts in the industrialised countries because of hazards to employees; electrical supplies on construction sites defy all the rules of safety; although equipped with good standards the construction industry cannot escape criticism on misapplication and malpractices are common.

Despite the need, it is difficult to see how TISI can embark upon Codes of Practice in the next few years: there is simply too much which remains to be done on product standards. The solution may lie in codes being established

by the Government departments and industries concerned, working closely with TISI, which can be made into national standards when the opportunity arises.

The recommendation that fundamental standards should come under early priority has not been completely adhered to, but some important standards have been, and are being, published. Among them are those affecting the use of SI units, drawing practices (500 were ordered by the King Mongkut Institute of Technology which has standardized mechanical engineering drawing on the TISI standard) and terminologies.

The problems affecting the standards section of the Institute are as follows:

3.1 The unsuitability of some technical committee members to formulate standards.

3.2 The lack of industrial experience on the part of technical secretaries - graduate staff of TISI.

3.3 The unwillingness of manufacturers to depart from present practices.

3.4 General unawareness of the inherent economy in standardization.

This is not to say that all committees suffer from these drawbacks. Some are excellent, led by excellent chairmen; but sufficient number are affected to warrant improvement. These drawbacks will be dealt with later under Recommendations.

The Government has become increasingly concerned about quality and irregularities in public purchasing and has established a committee to arrive at measures for offsetting the weaknessess in the national economy. This committee has so far made it plain that the establishment of purchasing standards should be the responsibility of the Ministry of Industry (TISI). This broad recommendation borders on the absurd. The task is immense. Struggling against shortage of staff and increasing responsibilities, there is no likelihood that TISI will even be able to approach the organization needed other than provide standards which are already compulsory or which by Regulation must be specified by purchasing officers. Some discussions have taken place on the compulsory certification of all consumer goods. Again, this is entirely unworkable, not only within the context of the Thai economy, but from results experienced in countries other than the Socialist Bloc.

It is strongly suggested that greater attention should be paid to the distributed report 'A National Standards Organization' prepared by the project manager which mutatis mutandis is workable and realistic (see Recommendations)

LIST OF CERTIFICATION-APPROVED PRODUCTS

** denotes compulsory certification

Standards No.		Product
3.		Local fish sauce
6.		Lead-acid storage batteries
8.		Flavour sauce
11.	**	PVC insulated cables and flexible cords
12.		Asbestos-cement flat sheet
14.		Monosodium glutamate
15.		Portland cement - general
16.		Cold-reduced tinplate and blackplate
17.		Polyvynil pipes for water services
20		Steel bar for reinforced concrete: round bar
23.	**	Ballasts for fluorescent lighting
24.		Steel bar for reinforced concrete: deformed bar
26.		Black and galvanized steel pipe with threaded ends
30.		Nitrous oxide for medical purposes
29.		Toilet soap
36.		Wall tiles
45.		Dentifrice
50.		Galvanized steel sheet
51.	**	Canned pineapple
52.	**	Tapioca
53.	**	Matches
54.		Ordinary sheet glass
56.		Sugar
58.		Hollow load-bearing concrete units
64.		Hard drawn copper wire for overhead lines
75.		Fertilizers
78.		Laundry powder detergent
79.		Asbestos-cement asymetrical section corrugated sheet
81.		Asbestos-cement pressure pipes
82.		Polyvynil enamelled round copper wire
83.		Vinegar
84.		White and coloured chalks
85.		Aluminium stranded conductors
86.		Aluminium conductors steel reinforced
95.		Steel wire for prestressed concrete
99.		Orange juice
100.		Tomato juice
102.		Structural clay load-bearing tiles
106.		Asbestos-cement pipes for sewerage and drainage
112.		Pineapple juice
128.		Reinforced concrete drain pipes
133.		White Portland cement
157.		Vitreous sanitaryware
165.		Aluminium sulphate, potash and ammonium alum
170.		Kraft paper
219.		Gypsum plasterboard
196.	**	Automobile Safety Glass - laminated
197.	**	" " " - tempered
198.	**	" " " - zone-tempered
21.		Silverware
41.		Sulphate and oleum for industrial uses
47.		Cooking oils and fats

4. CERTIFICATION

The system of certification of industrial and consumer products is one of continuous surveillance. It covers - with minor adjustments - both compulsory and voluntary certification and is based upon well-used concepts of factory production, quality control and records appraisal; the testing of random samples taken by TISI officials in authorised laboratories; the award of licenses - all things being satisfactory - by the Standards Council which allows companies to use the national quality mark; and periodic follow-up visits and testing.

At July 31 1978, the certification section had certified 55 different products (and many more different types within product categories) involving some 1055 factories of which 900 cover tapioca. 157 voluntary licenses have been issued, 2114 compulsory licenses, a total of 2273 since October 1972 when the first licenses were awarded.

Licenses are only given by the 19-man Standards Council on the recommendations of TISI. Test fees established by the Ministry are charged to companies submitting products under voluntary certification: no fees are charged those complying with the standard under a compulsory Royal Decree. All fees go direct to Treasury and not to TISI. Compulsory certification is applicable to both indigenous and imported goods; imported goods are, at present, not eligible for voluntary licensing because of the cost and difficulty of maintaining factory control in the country of origin.

In order to secure commercial security, all products are 'de-branded' before submission to the laboratories and results and discussions on test matters are carried out under a classification number.

Very few products are compulsorily certified. The policy, supported by the author throughout, has been to prefer the slower, persuasive method of getting industry's cooperation and recognition of the benefits of certification. In laissez-faire economies, compulsory certification en bloc rarely works. Personal experience and discussions with other experts and visitors from many parts of the world have tended to reinforce an assumption that it leads to standards too loose in their interpretation in order to protect existing factories when they become law; the inability to exert complete control and

consequent effect on the reputation of the certifying body; and the wider and more pressing opportunities for irregularities. TISI seeks compulsory certification only where sub-standard products are likely substantially to affect public safety and the economy of the countr. In this respect, compulsory standards are imposed upon tapioca (second largest foreign currency earner) canned pineapple (public health and of rapidly emerging export inportance) matches (internal economy and safety) ballasts and pvc covered electric wire (the major cause of fires in Thailand), steel bar for reinforcement (internal economy and public safety), automotive safety glasses (public safety). The list of voluntary products certified is attached: many of them are important in terms of the national habits of the country - fish sauce, food flavouring, and monosodium glutamate are almost a 'staple' addition to Thai food and are widely used - or in the economy - asbestos cement, cement, transmission cable, corrugated sheet, etc.

Bearing in mind that between two and six test samples are taken each visit for each type of product and that visits range between twice-yearly to monthly, the results from a certifying staff which has never exceeded 30 can only be regarded as outstanding. Week-end working, sorting and classifying samples until late in the evening, long distances of travel without air-conditioning and absolute integrity have emphasized the spirit of the certification team and its leadership. In order to maintain some semblance of control on tapioca, TISI is now authorizing officials of the Office of Commodity Standards to act on its behalf - a move resisted by the project manager.

But the work has been consistently hampered largely by outside influences resulting in long delays in testing the products of new applicants. These influences are the variable cooperation of testing laboratories and low priority sometimes given, the chronic inability of the Civil Service Commission to provide staff, the heavy burden of statutory action against offenders and the inadequacy of Government industrial information.

To take these in some detail may serve to indicate the seriousness of these obstacles:

4.1 While it is true that greater harmony between TISI and many laboratories has been achieved - notably in the university and electrical laboratories and other Department of Science laboratories,

two laboratories are at best tardy and at worst resistant. Notable among these is the Department of Science Mechanical Testing Laboratory which has been defiantly obstructive for a number of years. It was with the greatest difficulty that TISI could extract detailed information on testing routines and results - a matter critically important where an application had been rejected - the delays seemed unwarranted on the evidence of the amount of work being carried out in the lab on numerous occasions and the demand of this laboratory for more samples than stated in the standard is inexplicable in the light of testing alone and must arouse the deepest suspicions.

The UNIDO team encountered this type of resistance on two occasions: once when the expert on statistical quality control tried on very affable levels to discuss the operations of this lab. and was met the day after with a complaint by the Department of Science that the head of the laboratory had accused him of interfering with his work: the second was on an occasion when test results were submitted which were not only arrived at on wrong formulae but were wrong even to these mathematical conclusions.

Clearly the leadership of this laboratory is in question - especially since it is hampering the rate of progress of another section in the Department of Science which is important to the economy.

The mechanical testing laboratory of the Applied Scientific Research Corporation of Thailand has also been notable for its long delays in testing samples - three months being common and up to nine months well within the experience of TISI. However, in recent weeks, during the demand for testing a large number of steel bar samples, it has been highly cooperative and worked quickly. It is believed that the governing board has refused to sanction adequate staff for this lab. and some review of this policy is urged.

It is clear that a revision of the policy not to include its own test facilities in the work of TISI will have to take place (see Recommendations). This will not deprive existing labs of work. No standards establishment in the world, whatever its facilities, can rely entirely upon its own resources. Among many others Britain employs 47 independent laboratories, Australia and New Zealand have had to set up an 'approved laboratory' system, the Underwriters' Laboratory of the USA sub-contracts, inspects on site with manufacturers' equipment and also uses appointed agents and the USSR employs laboratories throughout the country. If the expansion of TISI goes on only at its present rate, it could use a basic test laboratory of its own and still have to employ other laboratories.

4.2 Semi-annual reports have consistently listed shortage of staff as a chronic problem and this has thrown a great strain on TISI staff, not least upon the heads of sections who have to cope with administrative work which should not be their function.

It is futile to belabour the point that without the staff, TISI must constantly struggle against an unnecessary obstacle which would have been easy to remove a long time ago. It should be said here that the Department of Science has been very generous in giving TISI the large share of its allocation for all departments. See 6. Staff.

4.3 TISI has raided over 200 factories, distributors and retail outlets under the powers given it under the Industrial Standards Act of December 1968 and accompanying Regulations and has taken over 50 to court to date (see Appendix 1 a). The extent of avoidance of the law could not have been foreseen and the raids, sealing off production and products and subsequent classification of evidence needed for prosecution, threw a very heavy burden on the certification team and legal officer. Such actions, however,

were immeasurably valuable to the reputation and acceptance of TISI by the industry. The area largely affected was ballast manufacture. The industry estimated when certification first came into being that well over 30% of the three million ballasts made at that time were sub-standard and produced in backyard industries. It is now estimated that some 3-5% are not licensed and they are operating up country where it is difficult to detect them. The outcome has been notable with the expansion of reputable Thai companies both in premises and operating hours, the consolidation of indigenous industry gains over imported products and the growing competition on quality alone. If also brought about a much more careful observation of the law by electric wire manufacturers who complied with few exceptions. It is now very difficult to find non-certified ballasts and wire for sale.

4.4 The inability of the Institute to plan well for control of the tapioca industry was initially due to an underestimate of the size of the industry. Estimates were gathered from various sources - the Thai Tapioca Traders Association, the Thai Exporters Association and the Government statistics offices. All were sadly unrealistic and TISI was faced with the problem after it had begun of certifying over 2000 outlets instead of the 800 it had been led to believe existed.

4.5 In the past, and for the foreseeable future, the only hope for TISI to keep abreast with the demands for certification put upon it is, and will be, to enforce the principle of audit of production in the factories i.e. to actively encourage efficient quality control inspection, charts and corrective systems and record keeping in order to reduce TISI's test programme to a reasonable level compatible with good certification control. Owing to salary grade structures in Government, virtually all the certification team have had no practical production or quality control

experience and it is therefore often difficult for them to advise licensees on efficient quality control lay-out, procedures and equipment. All they can do is to equate results with the sampling plans and test methods in the standard and attempt to assist where there is discrepancy. This, where medium and small companies are concerned, makes the test programme part of the factory's obligations. The return of Fellows from quality control courses and statistical quality control master's degree studies overseas has helped of course but these cannot entirely replace practical experience. Until improvement is much more evident, it will always be difficult to achieve complete audit responsibility.

4.6 The project manager has been an advocate of reciprocal recognition of each other's certification marks among other countries and the Act indeed provides for this, but experience has shown that some imports under internationally known brand names are not up to the standards imposed in the country of manufacture. There must remain a strong suspicion that sub-standard batches are 'dumped' into countries believed to have little statutory protection against such action. TISI has shown itself consistently fair in dealing with imported products under its compulsory control. No rejections have taken place without discussion with the companies and further tests in different laboratories. In one notable instance, the technical director of the company involved flew in to investigate and openly accepted liability for removing the products from the country. For all this, the slowness of testing does establish an unfair obstacle against imports in that go-down fees mount every day and contribute to non-competitive pricing. Efforts should be made to process quickly if an accusation of trade restriction is to be avoided.

For all the comments on dumping, reciprocal recognition should remain a target, especially for the ASEAN countries.

4.7 Tapioca

Special space must be reserved for TISI's involvement in a commodity which is so important to Thailand economic stability.

This commodity occupies second place among Thailand's foreign currency earners and the value rises annually. It is estimated that some 7 000 million baht ($350 million) will be exported in 1978.

Compulsory certification was introduced in 1973 because of protests of the more conscientious traders and constant complaints from Europe, which imports some 90% of the country's production for cattle feed.

It was clear from the beginning that TISI was faced with a Herculean task since processors were spread all over the country and small factories numbered over 2000 instead of the 800 on which control had been planned.

For this reason, the assistance of the traders and exporters was sought to implement TISI's activity and to collaborate on the technical details of achieving control. Many full meetings were held with the exporting companies, among which two at that time controlled exports via their ability to arrange shipping, negotiate prices and sell to other branches of their companies in the receiving countries.

It was eventually stated openly by the exporters's association at these Ministry meetings that corruption was the issue and that the Association had no desire to add under-cover payments to yet another Government body. This was also confirmed in several semi-private meetings with senior officials of the foreign companies involved.

TISI had taken urgent action to license operators and convince them of the benefits for the future of the trade in submitting to its control of quality. At times it

almost denuded the Institute of staff to carry out application and inspection procedures in the field. Special leaflets in simple language were produced and distributed and it is a mark of the respect its officials gained in this operation that several forward-looking processors telephoned for TISI intervention when the picture became blacker.

The Institute's director and the project manager, in an effort to get the exporters cooperation, compromised at every issue of control procedure - except the final one of withdrawing TISI supervision at the go-down.

We then heard from sources within the industry that the exporters had no intention of cooperating with TISI because it had now realised that it would carry out its duties with integrity. It was in their interests to be able to 'gain weight' by adulteration when supplies fell during the rainy season and the ships were waiting. This was to some extent confirmed when the Association complained to the Prime Minister and the then Minister of Industry and succeeded, during a meeting with all concerned, in restricting TISI's function purely to the factories. At this stage, the author advised UNDP/UNIDO that further consideration of the mobile units scheduled for equipment assistance should be stopped, and that TISI should ask that the Royal Decree be rescinded in order to protect its reputation.

The adulteration of tapioca continued unabated. Between January and April of 1975, samples taken at Rotterdam showed sand/silica adulteration reaching up to 15.1% of the total quantity. Of the 13 ships which arrived at that time, only one contained tapioca with less than 3% sand - the EEC and TISI maximum permitted (see Appendix 4 a).

During these intervening years, protests by the Royal Netherlands Grainhandlers' Committee - representing the major users of tapioca - were made through the Thai

Embassy and visits were paid by its representative. Conversations with this man, a Director of one of the Dutch companies, left no doubt about the seriousness of the situation - "if we could find alternative sources, we would drop Thai tapioca tomorrow".

Several warnings issued by the Acting Director and the Project Manager both internally and through the medium of editorials in the influential journals went unheeded until recently when the present Government took alarm, substantially increased penalties, stepped up arrests of offenders, and gave strict injunctions to the Director of TISI and the Office of Commodity Standards to exert better control.

These warnings, which had always conveyed the opposition of a strong French lobby - the French Wheat Producers Association which in June called for a tax on Thai tapioca - to the trade and the possibility of EEC closure on it, finally became confirmed in May 1978 when the Mayor of Rotterdam threatened to close the port to the Thai commodity on the grounds of dust and environmental problems. Dutch representatives managed to obtain a concession that this order would be withheld until the dust content of two or three shipments had shown whether there was improvement or not. Within few days, the Dutch sent a technical team to see whether anything could be done in view of the extreme urgency. By avoiding 'selected' sites of investigation, they found what we had known for some time - falsification of test certificates at the docksides, adulteration and excessive moisture content (saleable weight) in the factories. But they have also found that, with no extra cost, Thai producers can improve their production, gain more economy in doing so, and can avoid the loss of the trade if they act urgently (see Appendix 4 b).

If they can do this, TISI, with its improved staff position and with the help of UN mobile units and renewed responsibility for complete control can safeguard the industry.

If they cannot do it in time, there will be no need for UN equipment nor for TISI control. If the Port of Rotterdam closes against Thai tapioca imports, others cannot handle the largest ships and, in any case, will almost certainly follow suit. EEC will then be in no position to refuse an application for a total ban on the Thai product.

It must remain a subject of considerable conjecture as to why successive Thai Governments have allowed foreign interests resident in the country to virtually control the fortunes of one of its major foreign currency earners - and in effect to exert an influence which has brought the trade to this precarious situation.

NOTE: Just before this report was printed TISI had taken court action against three producers in one of which the level of sand - 61% - showed an outrageous disregard for the future of the trade. OCS also took action against a company at the dockside and the Prime Minister has revealed the Government's determination by using Article 27 to send both owners to jail for life and by fining the company 2 million baht (see Appendix 1 b). The large question remains as to whether this action has come too late. If it has not, it must offer confirmation of continued assistance sought from UNDP.

It is known, however, that some unscrupulous traders will go on taking the risk because they intend to amass as much profit as possible in a short time and then abandon the trade.

It is apparent that nothing but full control in the hands only of TISI and of no other Government Department will halt the danger to the trade and it is strongly recommended that TISI be given

the field inspectors (150) and full control up to ship loading.

It is also apparent from recent events that the personal danger to TISI inspectors will substantially increase. Local police have sometimes proven ineffective against threats and it is suggested that officers of the Crime Suppression Unit accompany TISI officials when court action has to be taken. It would be tragic if resolute and dedicated officials of TISI, earning between 2-3000 baht a month, should die or be severely injured as a reward for their integrity.

A SELECTION OF ARTICLES, LECTURES, REPORTS AND SCRIPTS PREPARED ON ASSIGNMENT

The following list is a small selection from hundreds of such items and is included simply to indicate the range of work done in this area

THE ECONOMIC BENEFITS FROM VARIETY REDUCTION
Lecture: Thai Packaging Association Conference: 1972

THE STRUCTURE OF A NATIONAL STANDARDS INSTITUTION
Business in Thailand: Jan 1973

THE ECONOMIC BENEFITS OF SECTORIAL STANDARDIZATION
Thai Management Association Seminar: Feb 1973

STANDARDS AND CERTIFICATION IN A DEVELOPING COUNTRY
(co-author, Dr.K.Stephens) BSI News: April 1973

STANDARDS - AN IMPORTANT ROLE IN THAILAND
Asian Economic Review : May 1973

HIGHER PROFIT FROM A RATIONAL APPROACH IN INDUSTRY
National Economic Development Board's Review: Jul 1973

CONSUMERISM - A NEW TERM IN ECONOMICS
National Economic Development Board's Review: Sept 1973

THE WORK OF UNIDO IN THAILAND
Financial Post Annual Industrial Review: Dec 1973

* A MANUAL FOR THE OPERATION OF AN INFORMATION/ PUBLIC RELATIONS SERVICE IN A STANDARDS ORGANIZATION (with particular reference to developing countries)
UNIDO/TISI : Dec 1974

* Working document.

INDUSTRIAL STANDARDS IN THAILAND AND THEIR EFFECT ON CONSUMERS
SE Asian Conference of the International Organisation of Consumers Unions: 1974

INTERNATIONAL AND REGIONAL COOPERATION IN THE RELATED AREAS OF QUALITY CONTROL, STANDARDIZATION AND CERTIFICATION MARKING
AND
MASS MEDIA INFORMATION AND THE DEVELOPMENT OF QUALITY CONSCIOUSNESS IN THE CONSUMER
UNIDO SE Asian Workshop on Quality Control and the Certification Marking of Industrial Products: May 1974

THE GOLDEN OPPORTUNITY
Thai Economic and Business Review: 1974

STANDARDS - A WAY TO PROSPERITY
The Investor: 1975

THE ADOPTION OF SI UNITS AND ITS IMPLICATIONS FOR THAILAND
Chulalongkorn University: June 1975

THE ECONOMIC ADVANTAGES OF STANDARDIZATION
Industry: July 1975

THE SUCCESS OF STANDARDIZATION IN THE CONSTRUCTION INDUSTRY
Thai Construction Annual: Jan 1976

RATIONALIZING TECHNOLOGY AND PROTECTING THE ECONOMY
Science Journal: Feb 1976

A GAP IN THE TRANSFER OF TECHNOLOGY - STANDARDIZATION
Focus: journal of the Society for International Development: (1976)

TECHNICAL ASSISTANCE AND ITS PRIORITIES - A CRITICAL ASSESSMENT
UNIDO/ISO Algerian Conference: Sept 1976

*A PLAN FOR THE RATIONALIZATION OF THE FASTENER INDUSTRY IN THAIL
UNDP/UNIDO: Oct 1976

*Working documents

THE THAI INDUSTRIAL STANDARDS INSTITUTE

Government Overseas Publication: March 1977

WHY STANDARDIZE?

CERTIFICATION - AN INVALUABLE AID TO SALES

ASEAN/ESCAP/UNCTAD Training Programme in Export Promotion; Oct 1977

STANDARDIZATION AND YOU

A Course of 10½ hr. Periods Involving Programme Learning: 1977

*A PLAN FOR A NATIONAL STANDARDS ORGANIZATION: Aug 1977

AN ASEAN MEDICAL CENTRE, TOO?

Thai Medical Journal, Aug 1977

TIME FOR NEW YEAR RESOLUTIONS

Thailand 'Profile', Jan 1978

* A PROGRAMME LEARNER ON CONSUMERISM PREPARED FOR THAI SCHOOLS

Translated from English: May 1978

STANDARDIZATION WIDENS THE PROFIT MARGIN

Thailand Business , July 1978

AGRICULTURAL STANDARDS HELPING DEVELOPMENT

Thailand Business, August 1978

Film, Radio and Television Scripts

FILM:	FULL VALUE FROM STANDARDS	20 mins.
V FILM:	STANDARDS AND YOU	18 mins.
TV:	'BUY THAI'	30 mins.
TV:	STANDARDS AND THE CONSUMER	15 mins.
RADIO:	HOW TO COMPLAIN (for Nat Cl. of Women)	15 mins.
RADIO:	THE IMPORTANCE OF STANDARDIZATION IN THAILAND	30 mins.

*Working Documents

5. PUBLIC RELATIONS AND INFORMATION

The Institute has a Public Relations Department and a Technical Library and Information Department. The first employs a staff of ten, which includes the head of the department, a journalist, a bulletin and publications editor, a designer, a draughtsman, a photographer. There are vacant posts for another journalist, a printing operator and two assistants. The rest of the staff are non-graduate service personnel. The Technical Library consists of a graduate head and three other graduates. This Department also deals with ISO drafts and all foreign correspondence.

When the project manager joined the Institute in 1972, it was decided with the Director of the Institute that the following priorities were to be established to overcome a situation which showed that few Ministry and university staff knew anything about standardization and there was widespread ignorance of it in industry. Furthermore, the inherent economy in standards and their important role in removing non-tariff barriers was almost totally unknown.

Staff were few and comparatively untried and there was a low budget. Progressive stages were established in the following order:

5.1 Government department personnel, senior civil servants and political appointees - on the grounds that TISI's work should be well-recognised if it was to get the cooperation it needed, particularly from Ministers and the Budget Bureau.

5.2 Industry, for obvious reasons.

5.3 University students - because of the necessity of steering industrial executives designers, researchers, etc. of the near future towards an acceptance of standards before they entered employment.

5.4 The general public - because of the need to convey standards and certification of products as instruments of consumer protection and to enlist their aid in bringing pressure on manufacturers from another direction.

Of all the media of communication, the business press and newspaper sections were used most prominently and were, in the first two years, 'saturated' because the ideas and principles of standardization were unknown and therefore of news value. In addition to news releases which became a regular routine in the Institute, all the influential business, Government and financial journals had carried at least one major feature about TISI by 1974. The preceding list to this section of the report gives little idea of the quantity of material published but does convey the approach and the types of publication covered.

5.5 Television and Radio

Among the television features scripted by the expert, translated and televised were: 'Standards in Thailand' (30 min.), 'Buy Thai - Standards' (30 min.), 'Standards and the Consumer' (15 min.), 'How to Complain' (for National Council of Women, 15 min.), 'Standards and You' (30 min.), 'Standards in Industry' (20 min.). This does not cover special treatment during World Standards Week, itemised later. There were, in addition, numerous news items such as the Ministry awards to licensed companies.

TISI holds clippings for 320 major articles, comments and news stories about TISI and many more appeared, particularly in the Thai press, which were not picked up. The theme of these features ranged from techno-economic to light hearted consumer and appeared in national newspapers, technical, commercial, business and financial journals and also in professional Government journals such as the Department of Economic and Social Development Journal. Six large supplements exclusively about TISI appeared in the English-language and Thai newspapers. And a number of magazines such as the 'Investor' and 'Business Review' have carried cover stories on the Institute (see Appendices 3.a-n).

5.6 Publications

Publications included booklets for the general public; four

booklets on certification procedures; an explanatory booklet to encourage members oftechnical committees to understand the full ramifications of their work; a brochure on variety reduction; a Government Bulletin and leaflet for use by the embassies overseas as propaganda to support sales of Thai exports. A monthly TISI Bulletin is produced which is distributed among Government Departments, Universities, Trade Associations, etc. The demand has steadily risen and the periodicity has had to be changed from bi-monthly to monthly and circulation increased to 3500. The Institute also produces an annual Buyers' Guide which is up-dated three times a year and which involves careful technical detail, names of brands and manufacturing companies of the products certified by TISI.

Some 30 000 leaflets have been prepared for hand-outs at exhibitions.

5.7 Visual Aids

A 20-min. colour, 16 mm. film has been scripted by the section and produced professionally. At the time of writing this had just been completed and its public launching has not yet taken place. It is expected to be shown on TV. The usual projector and overhead slides have been prepared about TISI activities for tapes and lectures.

5.8 Exhibitions and Displays

Some 17 exhibitions and displays have been staged, the majority at fairs up country attended by 20 - 100 000 local people. TISI staff manned these exhibitions from 1000 hrs. to 2400 hrs. A survey taken at Lopburi showed that 1000 people had actually visited the stand to listen or discuss, primarily about certification of products, as opposed to passing viewers.

5.9 Special Events

ISO's World Standards Day was chosen as a peg on to which to hang a TISI 'World Standards Week'. Two major exhibitions

were held in the largest department store and a building centre, the opening of which by the Under-Secretary of State drew television, radio and Press coverage. A bolloon competition for the public also drew much Press coverage (see Appendix 1 c); the Director of TISI gave a broadcast at peak listening time; franked envelope slogans were issued by 22 major post office sorting centres; posters were put up and some journals carried special features. A large Government/Industry conference was planned in Bangkok, but a military coup prevented its completion.

5.10 Lectures

Arrangements have been made with three universities - Chulalongkorn, King Mongkut Institute of Technology and Khon Khaen - to run 'saturation' Standards Days for senior students. On these days - sometimes extending to two - curriculae were put aside in order to accommodate two types of lectures: one group on the national and international implication of standardization and SI units, the others on specific technical lectures carried out both by TISI staff and chairmen of committees. In each of these a diaplay was erected in a central lobby of the university. The general impression was that these went well and seemed to convey the importance of the topic to both staff and students (see Appendix 4 i).

Numerous lectures were given during the period by the QC expert in the course of his duties, particularly at QC courses run on behalf of the Ministry, and by the author and TISI senior staff. They included individual lectures by TISI staff at industrial promotion seminars, universities, Engineering Society, etc. and by the expert to universities, businessmen's meetings such as Rotary and Lions' Clubs, womens' organizations and consumer group meetings - the project manager was an honorary adviser to the Consumer Affair Project of the National Council of Women of Thailand. These activities also included seminar participation in

Singapore on the UNIDO/SISIR and NBS/USAID workshops, the Penang workshop on consumer testing for IOCU, and the ASEAN/ESCAP/UNCTAD seminar on exports in Bangkok.

5.11 Advertizing

On some occasions it has been possible to advise new licensees about appropriate publicity following the award of the certification license and, on one occasion, a complete publicity and marketing scheme was presented to the company. A number of companies - notably the Siam Cement Group manufacturing building materials and steel bar, Phelps Dodge, making electric cable, Zolex toothpaste company, Lion soaps, American Standard sanitary ware, Siam City Cement, Thip cooking oils, among others, - have engaged upon large-scale television and newspaper advertising promoting the award of the mark. Many others carry the mark prominently in their advertising (see Appendices 2 a-g).

5.12 Liaison Officer

At the project manager's suggestion, a liaison officer was appointed whose function was to follow-up the publication of standards by personally visiting factories and persuading them to certify to the new standard; to take up queries concerning the application of standards; and to sort out problems such as those where Govt. purchasing officers are compelled by Regulation to order standard products but cannot find manufacturers who will make within the budgeted price (see Appendix 4 c).

This has, in the main, failed because the person chosen was a new graduate with no experience either of industry or or standardization, see Recommendations.

5.13 Printing Unit

The long delays in printing standards and publications - up to four months - and the many errors which appeared due to

incorrect proofs and compounded errors by the printer led to requests for a complete printing shop. In 1977/78, the Government supplied the printing press, an offset A3 machine, and a guillotine; UNIDO supplied - or are supplying - a process camera, platemaking equipment, collator, stitcher and folder, in addition to the 4 IBM dualectric typewriters.

At the time of writing, the collator, stitcher and folder have been requisitioned but not delivered. In any case, there is no urgency about this because the printer left TISI employ early in 1978 and it is not expected that he will be replaced by Civil Service Commission for some months. The public relations section is, however, capable and trained to produce its own typesetting from IBM typewriters, its section headings from the process camera and plates from the platemaking equipment. This can avoid typesetting problems with printers and reduce costs.

It had been anticipated that most publications - standards and booklets - would be produced in-house before the departure of the project manager, but the resignation of the printer blocked this progress.

Posts have been requested for a printer and two assistants who can be trained by the printer and it is hoped that a similar situation will not arise once the new staff have joined TISI.

It should be repeated here that the constant attempts by the two project managers to alter the size of TISI standards to A4 instead of the present A5 have failed. The co-manager cites as his reasons for rejecting this advice that 6000 standards have to be produced as inserts to the Government Gazette (when they then become official) and the Gazette is produced to a special size. Yet enquiries have shown that an announcement of two pages could legally be accepted or, alternatively, the Government Gazette publishers would at least discuss their own conversion to A4 size if they were

confronted with the economic benefits of changing, which are: more economy of page space, better lay-out of drawings and tables, standardized simultaneous production of the batches for Government Gazette and general purposes. If this were agreed, the whole 9000 could be produced in TISI, thus avoiding laborious interchanges with printers on proofs and multiple errors and the heavy costs of printing in Thailand.

5.14 Introductory Courses

Three Introductory Courses have been held internally when a sufficient number of new staff has grown. These occupied two or three days and gave brief introductions in all aspects of standardization, particularly the wide national and international implications and the economic benefits.

5.15 English usage and conversation

Weekly sessions on the use of, and familiarity with, the English language have been held for many years for those who wish to be considered for fellowships and others who want to improve their understanding of English. Numbers have been small, ranging from 4 to 12. It is believed from comments of a fellow overseas that they had been useful.

5.16 Technical Library and Information Section

The purpose of this library is to keep references to foreign standards in English, a necessity for producing the first draft in Thai for discussions by the technical committees and for industrial enquiries. The library also displays foreign standards manazines and other information. But the section is also responsible for handling international standard drafts circulated for comment by ISO in order to reach international agreement and for dealing with foreign correspondence. In 1977, it received, apart from international questionnaires and correspondence, some 700 ISO drafts and is undoubtedly under pressure. It is at a fairly rudimentary stage. One of the essential elements of such information

services is the selection of foreign and home technical information which will be valuable to technical committee in their deliberations and also to pass on relevant information to industrial companies likely to benefit. This stage has not yet been completely fulfilled but this is entirely due to the staff situation: an additional 5 posts remain vacant.

This section does need, however, to check its responsibilities and make sure that (a) it has filed all information about the Institute, including the names of the Standards Council and (b) that it is fully agreed to pass on to technical committees all useful information it receives from overseas.

In the Initial years and until the latter part of 1976, the spirit and output of the public relations and information section was high. There can be little doubt that its exertions contributed to the situation today in which standards and certification are much more widely recognized in Thailand, especially by other Government departments and industry. It would be foolhardy to claim that the general public and small industry are are fully aware of standardization - but the situation is a constant source of displeasure among standards bodies all over the world. It must also be recognized that TISI's discussions with Government and industry, compulsion and indirect compulsion achieved through Cabinet regulations, and the growing number of industrial, Government and university members of technical committees on call by TISI have spread much more understanding. Nevertheless, it is a fair assumption that the concentrated propaganda over the years largely schieved its target of valuable support for the Institute's development. It is significant that great efforts had to be made initially to project TISI into Press consciousness and educate them until 1975: there has now been a complete volte face and it is extremely difficult to meet the demands from the Press itself. The results of a survey carried out among students of Chulalongkorn University in 1975 are also significant. Of the 300 senior students issued questionnaires, 60% knew of the work of TISI before the lectures began and 37% knew something of the certification mark.

In the last year, as the expert withdrew direct involvement - apart from major Press features, film and TV scripts - in favor of advice, the output has declined, largely as the result of the loss of the head of the department and an energetic journalist. It is imperative to keep the early initiative going and measures immediately essential are:

(a) Placing of the new film in a television programme.
(b) Completion of a series of slides for television which have already been offered.
(c) Completion of the joint booklet about TISI, for which artwork and copy have already been prepared.
(d) Completion of the leaflet on SI units.
(e) Sectorial leaflets simply explaining the benefits of standardization and certification in various sectors.
(f) Arrangements for a high-level joint Government/Industry/University Conference as scheduled for World Standards Day in 1976.
(g) General promotion for the 'Buyers' Guide' with free copies and Press releases for the Press, sales to University bookshops, notification of industry through Associations and Institutes, etc.
(h) More active approach to popular magazines and Thai newspapers to take feature material.
(i) See Appendix 4 k.

This 'cycle of decline' is expected to take an upward turn once the new head of the department becomes experienced and new staff join.

But whatever the temporary setbacks experienced in this section, it is clear that the Director and senior staff are fully aware of the value of public relations and well-directed information and that the staff are capable of effective journalism, the writing, lay-out and publishing of publications, good design, the role of visual aids and the ultimate effects of continuous publicity and information.

The detailed and comprehensive manual on information and public relations for national standards bodies (with particular reference to developing countries) produced in 1976 should be a constant source of reference. This manual is fully supported by ISO and has attracted international attention in that 37 countries have asked for copies.

6. STAFF

The position at 31 July 1978 was as follows:

Director	1
Senior Scientific Officers	14
Scientific Officers	61
Asst. Scientific Officers	29
Others - typists, drivers, service	37
Total	141

The requests to the Civil Service Commission for additional staff for 1978 were as follows:

Certification	31
Standards	3
Documentation	26
Administration	2
Legal	2

Of this total of 64 additional staff needed for 1978, the Budget Bureau has allocated funds for 10 and of this number the Civil Service Commission has gi

This consistent and chronic shortfall in staff since the inception of the Institute has bedevilled TISI's attempts to forge ahead and has certainly resulted in key staff becoming very tired from the overload.

The UN experts on the post have estimated that, to cope well with expansion to meet demands made upon it, TISI should have in the region of 300 staff by 1979. TISI itself has requested additions to make a total of 254. It is likely to be saddled with a total not exceeding 150-160. This excludes the 60 staff for field control of tapioca, a special allocation which does not help certification and standardization generally.

The system of staff allocations is a complex leapfrogging operation between the Civil Service Commission and the Budget Bureau. If, for example, requests are made by TISI at the end of 1976 for 1978, the Budget Bureau must receive approval for these requests from the Civil Service Commission

by June/July 1977. It seldom gets this approval in time and can then only schedule finance for 1979. This means three years - and even then further shortfalls are caused by CSC being unable to find qualified staff.

This is understandable in the light of key personnel at CSC describing TISI's function as 'controlling tapioca' - a description hardly likely to enthuse mechanical, electrical, civil and industrial engineers applying for Government posts!

The system is cumbersome and unworkable in real terms. There seems little reason why TISI should not seek Budget Bureau approval, recruit its own staff - which it can do by excellent propaganda in the universities - and leave the Civil Service Commission to be the administrative, examining and documenting agency.

7. ECONOMIC

This question of tangible results inevitably raises the difficulty experienced by all national standards bodies since it is impossible to quantify exactly how much improvement was the direct result of standardization and certification. What is felt globally is that the results of standardization must be very much more than specific examples show: apart from public statements from such managing directors as one in Britain who claims that British Standards save his company $ 2 million a year, most executives adopting efficient standardization are more inclined to claim that it is their own execut . skills which have led to greater efficiency and economy. The examples of the USSR, which declared some years ago that its standardization of cranes saves the nation some 60 million roubles a year are rare.

Nevertheless, there are strong pointers in the Thai economy that TISI has had a considerable effect on certain aspects of the economy.

7.1 The Institute is currently exerting quality surveillance of some 7-8000 million's baht's worth of products and has a gradually increasing grip on a further 7000 million baht value of tapioca exports.

7.2 The situation with canned pineapple - expected to reach 1000 million baht sales overseas this year - is that in 1973, when the compulsory scheme was introduced, 1.3% of all Thai food and drugs rejected by tne Food and Drug Administration of the USA, consisted of canned pineapple. The following year this fell to 0.33% and, since 1975, no Thai canned pineapple has been rejected by the FDA on grounds of quality. Some shipments have initially been detained when they were damaged during the voyage, but large parts of the consignment have eventually been allowed to enter. There have recently been some complaints from West Germany which are being followed up, but there is no evidence that such conditions do not apply (see Appendix 1.d) in general to the other major importers. When certification began, Thailand was lying seventh in world supply: today it is the third largest supplier of canned pineapple in the world.

7.3 Ballasts and Electric Wire

The situation which existed before certification in 1973 and 1975 respectively is described on page 9. The Police Research Department had named these products as the prime cause of fires in Thailand, estimated to cost the country some 800 million baht annually. The trade had estimated that 30% of all ballasts sold in the country were sub-standard and 80% of all wiring installed was dangerous. It is now estimated that some 3-5% of ballasts are manufactured illegally up-country and TISI has had only one or two instances where sub-standard wire has been made. The acceptance of control has been confirmed by the manufacturers themselves. When they have been asked during technical objections whether they wanted the Royal Decree rescinded, they have been adamant that they do not want it. Having invested up to 800 000 baht in equipment in order to reach the standard requirements, they have no wish to nullify this investment and return to 'jungle' commerce (see Appendix 1.e).

The results of punitive action against ballast manufacturers has consolidated the import figures of 30% of the trade and brought up reputable Thai manufacturers to a control of 65-67%. Some are exporting in the region and one to Japan. At least three of the largest manufacturers went on to full-time shift work after the compulsory order and small companies expanded their factories and numbers of employees. All have had to improve their lay-out and quality control under TISI surveillance. Prices are stabilised and the industry is competing on quality, particularly on the finishing.

7.4 In 1976, the G.S. Steel Company received an order for 10 000 tonnes of steel bar from the United Kingdom. It was unable to complete because the Government of that time placed a ban on the export of this commodity to keep down prices. Since the United Kingdom construction industry is bound by stringent regulations, it is certain that the order would not have

been placed had the steel not complied with international standards. TISI at present controls 80% of steel bar production and will coon control all when the new compulsory standards become effective.

7.5 In 1976, the Siam Cement Group, the largest industrial group in Thailand, announced export figures of 2850 million baht - an increase of 27% over 1975. It cannot be entirely coincidental that this Group also has the largest number of certified products of any company and the managing director is on record more recently in the TISI film as saying that the certification scheme has materially assisted his company's export position.

7.6 In 1976, the Ministry of Public Health publicly issued a condemnation of ten brands of fish sauce - wilely used in Asia - as being unfit for human consumption. At that time TISI was certifying one small factory product. Now it controls 9 major producers and exports to the United States are growing (see Appendix 1 f).

7.7 The managing director of a popular food flavouring claims that he has captured 70% of the market with certification - his nearest competitor being a foreign brand company and a wholly - Thai toothpaste manufacturer holding the Mark claims similar figures against foreign brands.

7.8 These specific examples override the inherent economy in applying national standards. The adoption of the TISI steel bar standard, with its range of 8 dimensions, by the two largest producers has reduced the variety from the over 30 different sizes manufactured before. This means less stock carried, greater capacity to forecast sales consumption, closer accuracy in advance ordering of billets from abroad and greatly reduced inventories and variety of manufacturing parts which have to be bought overseas.

The Highways Department will reap considerable economic benefits from the standard on drainage piping. Under

> laissez-faire contracting in various provinces, real problems are experienced in replacing old, broken pipes, the specifications of which have long been abandoned. This has meant 'specials' at a high cost. The advent of pipe to a national standard means replacements from any source at standard costs.

The budget allocation for TISI in 1978 is 10 834 000 baht, of which it is possible that some 6 million could be said to affect exports directly or indirectly. An estimate of the value of exported products under TISI surveillance in this year is about 11 000 million baht. This means that the cost to the country for relevant standards and a continuous certification surveillance is about 0.0005% of the total value. Most countries would be well-satisfied with those costs for safeguards for some of its foreign currency earnings.

8. GOVERNMENT AND UNDP INPUTS

The TISI budget allocation for 1978 is 10 834 000 baht, bringing the total Government input for the six years in this the period of this report to 35 638 000 baht (approx $1 780 000). This does not include apportionment of the number of authorized laboratories which test for the Institute which would probably push this figure up to $2.50 million. The UNDP input in the same period - until December 1978 - is estimated at $635 587, a ratio of approximately 1 : 2.8.

Government support has therefore been tangible. Actually, in six years operation the budget allocation has risen by some 500% from 2.1 million baht in 1973 to 10.8 million baht in 1978. This expenditure includes 8.5 million baht which constitutes one half of the amount spent on the new joint TISI/Industrial Promotion building.

For all the Government's good intentions, however, the fact remains that of over 80 countries represented in ISO (the International Organization for Standardization) only 7 have a budget less than TISI's. At 1975 figures The Philippines and Singapore, who have produced about the same number of standards as TISI, had budgets of 2 500 000 Sw. francs and 5 400 000 Sw. francs respectively three years ago. Even Sri Lanka (1.1 million), Ghana 3.8 million), Ethiopia (2 million), Malaysia (2.3 million) and a number of other countries on parity or less-developed than Thailand show larger inputs on 1975 figures than Thailand's 1978 figures of 900 000 francs. Yet in terms of production of standards and implementation through certification few can approach TISI's development. I have no doubt that the disparity is much greater under 1978 review of budgets.

To return to Sri Lanka, economically very undeveloped, the Bureau of Standards employed 138 personnel in 1975 - against TISI's 100 - and had a budget of 1.1 million Sw. francs against TISI's 100 000 at that time. Yet it still has not developed a national certification scheme. Further conclusions from these comparisons would be superfluous.

9. FELLOWSHIPS

The list following these pages shows the breakdown of training schedule between 1973 and December 1978. Of these, only 32-08 is expected to be changed and be postponed until 1979.

Of the fellowships, all have returned with master's degrees (one with the communications diploma), for which they were awarded the fellowships.

In addition to this, 18 graduate personnel have attended UNIDO/Bi-lateral courses. With the exception of two, all completed these courses. Two more were sent on Colombo Plan awards, one getting her master's degree in textile technology and the other his one-year Intermediate Diploma.

The total training time for all sources completed so far is 205 mm.

The early years were bedevilled by new instructions from UNIDO when standard costs resulted in slashing the man months for each fellow - a situation which involved many of them having to complete a master's course on their own money - 15 mm against the 18-21 mm required. These were then revised and increased annually, which again meant cuts. The 1976 'freeze' also disturbed the programme. Attempts subsequently to apply more flexibility by adjusting according to the capability of the individual fellows were met with resistance and any flexibility has now been entirely stopped by the Department of Technical and Economic Cooperation.

The management of fellowships has been a bane, often aggravated by the inability to change the schedule easily. In a project constantly changing shape according to industrial and Government demand, it is essential to apply some flexibility to the disbursement of funds. What may seem desirable in 1976, may not meet the need for a change of training in 1977. It should be possible to budget in the project for known requirements for training, but, on written sanction from UNDP/UNIDO, to change within the amount scheduled. For example, it could not have been foreseen that the Indian Standards Institute would offer training in standardization and certification on a 50/50 basis. In the time allowed it was impossible for the Government to sanction its share, but it should have been possible to send fellows by adapting the project document on an exchange of letters - a revision of the project taking too long.

A constant problem has been the TOEFL testing in this country. In 1973, I protested strongly to the Resident Representation that some of the English used in this test was complex, syntactically weak, and broke all the rules of good English i.e. clarity and succinctness. Many of the passages were tests of memory, not tests of English. This was taken up by the ResRep with New York and two deans from American universities subsequently agreed with the project manager. The examination texts have now improved but a chronic problem are old, inaudible tapes from which the comprehension tests are made. They are the cause of widespread complaint among students in Thailand and certainly made the difference between fellows getting 550 and just below that. Since most reputable American universities require an absolute minimum of 550, we sometimes had the utmost difficulty in placing good candidates. To throw the extra work on the fellowship sections of New York and Vienna because of worn tapes seems to be an unnecessary burden out of all proportion to the problem. The project manager has spoken personally to appropriate people here but without significant results. It clearly needs liaison at an official level between Fellowship Section, New York and TOEFL administrators.

Such fellowships and training courses are essential to the progress of TISI. Since it is quite impossible to recruit graduates with industrial experience because of pay scales, this experience abroad, whilst no replacement, is at least a needed step. In every case we have observed new awareness and new ability to rationalize in returning fellows.

The programming of fellowships for master's degrees is sometimes not understood and criticized. The need is based upon traditional 'hierachy' attitudes of the Thai people and the need for technical committee secretaries and certification officers to be at least academically equal to the industrial and academic people with whom they are dealing. TISI growth must lead to a situation in which the technical secretary can persuade his/her chairman and committee members to make decisions in line with the principles of the Institute and avoid uneconomic decisions. Certification officers must eventually be able to persuade factory management to adopt certain measures in order to meet the standard and even improve production generally. In this respect the possession of a foreign degree plays a substantial part, as irrational as this may seem in other countries.

Four fellows who have undergone UN training have left the project and another is likely to do so soon. Although this is a set-back, it is not a loss in the sense that, with one exception, all will go to industry thoroughly indoctrinated in standardization and the benefits of certification. This has proven the case with an earlier departure who is now a member of a TISI technical committee and has pushed his 'company' certification license to public attention with good effect.

FELLOWSHIP SCHEDULE 1973 - 1978

31 Fellowships

31-01	Electrical Eng.	(S. Watanawong)	Master's Degree	Dec. 1975
31-02	Mechanical Eng.	(K. Rukngan)	Master's Degree	Oct. 1976
31-03	Civil Eng.	(P. Ariyadej)	Master's Degree	Sept. 1978
31-04	Chemistry	(R. Tangpoonpholvivat)	Master's Degree	Jun. 1977
31-06	Stat. QC	(S. Avavadorndeja)	Master's Degree	Feb. 1977
31-07	" "	(K. Sinsakul)	Master's Degree	Dec. 1976
31-08	" "	(N. Sirilarpyos)	Seeking placement	
31-09	" "	(S. Thaleongchok)		May 1979
31-12	Engineering Prod.	vacant		
31-13	Metallurgy	(C. Homhual)	Scheduled 1979, start Sept. 1978	

32 Group Training

32-01	Data Class and Retrieval	(S. Sunthrarak)	Completed	Nov. 1977
32-03	Standardization (Law)	(S. Wongwichien)	Completed	Sept. 1977
32-07	Plant Standardization	(S. Harinasuta)	Completed	Nov. 1977
32-08	Plant Standardization	1978	Abandoned and changed in 1979 to work study New Zealand Standards.	
32-09	Food Technology Study	(M. Hotrabhananda)	Scheduled as soon as possible	

UNIDO/BI-LATERAL AND BI-LATERAL STUDIES

FELLOW	YEAR	PERIOD	COUNTRY	SUBJECT
Pachanee	1970	4 months	Japan	Q.C.
Phani	1971	3 weeks	Japan	Standards
Charoon	1971	4 months	USSR	Standards
Smith	1972	4 months	Netherlands	Q.C.
Somchit	72/73	2 months	Iran	Certification
Sawalak	72/73	2 months	Iran	Certification
Pachanee	1973	4 months	USSR	Standardization
Pairoj	1973	3 months	Sweden	Q.C.
Parima	1974	2½ months	Netherlands	Q.C.
Chalit	1974	4 months	USSR	Standardization
Niphon	1974	4 months	USSR	Standardization
Suree	1974	1 week	Singapore	Seminar
Mr. Chaiwai	1974	1 week	Singapore	Seminar
Suebsthiera	1974	3 months	Sweden	Q.C.
Saowanee	1974	3 months	Sweden	Q.C.
Charoon	1975	2½ months	Netherlands	Q.C.
Wanwimol	1975	2½ months	Netherlands	Q.C.
Chatchanee	1975	4 months	USSR	Standardization
Ekachai	1975-1976	University Diploma, UK.	Electrical Eng.	Colombo Plan
Rampaibhan	1975-1977	University Master's, UK.	Textile Tech.	

10. EQUIPMENT

The Mercedes Benz bus acquired in 1973 has been used consistently for the purposes for which it was purchased - transportation of staff and exhibition stands - but has also been used to transport technical committees to factories for investigations during formulation of standards and for carrying certification staff. It has been run for 33647 km. with only small incidents and repairs completed by the Government and is in good condition.

The more recently acquired Toyota car has been used almost exclusively by the project manager but has also been used for transporting staff during business hours when Ministry transport was not available. It has completed 43 113 km.

The Nikkormat camera and ancillaries, the projector, back projection screen, tape recorders, etc. have been used consistently, only the cabinet slide projector and the generator being unused to any great extent; the former because the UN Development Training and Communication Planning unit could not devise the contact linkage with the Jonan Synchrorecorder they had promised and the generator because it proved unnecessary with the spread of electricity up-country. I have advised that this be kept as a standby unit for the mobile test unit to be delivered this year.

The small inspection equipment has been used by the certification section in their visits to factories.

Most of the equipment acquired during the period has now been handed to the Government. The exceptions being the Toyota Crown vehicle, which will be used for in-coming experts, and the process camera, platemaking equipment and printing ancillaries to be delivered - a precaution in view of the delayed printing facilities staff.

To be discussed at the forthcoming Tripartite Review is the possibility in 1979 of supplying ancillary equipment for testing which will be kept by TISI and issued to various laboratories as the need arises.

The issue, together with the request for more mobile units, will be dealt with in the Tripartite report and in any steps taken to raise a project revision for 1979.

It is recommended that the Toyota Crown be handed to the Government on completion of the contracts of the two experts due to arrive. TISI has used and maintained its UN equipment well and because of its wide national activities is in constant need of vehicles.

The value of equipment delivered is $30 139 and, likely to be delivered by 31 December 1978, $102 892, making a total of $133 031.

11. EVALUATION AGAINST WORK PLAN OF MAJOR REVISION 1975

Schedule and Timing

11.1 Construction of the new building to house the Standards Institute

Completed January 1977.

11.2 Transfer of ISO membership from CTNSS to TISI

Accepted 1975.

11.3 Mission by the consultant on the design and equipment of mobile units

Short term consultancy completed 1975. Contract now sought with Tropical Products Institute to design, equip and survey construction of the first before Dec. 31, 1978. For reasons of slippage, see 4. CERTIFICATION.

11.4 Ordering of mobile units

See above and 4. CERTIFICATION.

11.5 Changing status of TISI to separate department within Ministry of Industry

All documents prepared and to be passed by Cabinet. Now awaiting statutory instruments for change. Jurisdicial Department asked to speed-up process.

11.6 The preparation and publication of national product standards

Fully active - see Report.

11.7 All testing, inspection and surveillance necessary for a certification scheme

Fully active - see 4. CERTIFICATION.

11.8 The production of fundamental standards

Partially within programme - see 3. STANDARDIZATION.

11.9, 11.10, 11.11 Abandoned for reasons given in 4. CERTIFICATION. Now reinserted for 1978/79 operations.

11.12 Training of TISI staff to advise on implementation of standards in factories

Begun during assignment of Wallden, standards engineer, in 1975/76 and to be continued with the arrival of Zalewsky in August 1978.

11.13 Training of staff to advise on implementation of quality control systems in respect of certification requirements

No UNIDO expert available; QC expert awaited, but overseas courses have been attended and the head of certification has been running periodic courses and instruction sessions for her staff.

11.14 Organization of a Technical Information and Retrieval Section which includes central responsibility for ISO membership involvement

Now established at basic levels. All ISO drafts are handled by this department and all foreign correspondence. The head of section has completed an intensive study of other standards organizations and has attended a seminar on the new ISONET system of information storage and retrieval. This will expand as staff allocation is filled.

11.15 Establishment of National Quality Control Institute or Association under the aegis of TISI but not responsible to, nor administered by, the Institute.

Fully formed and officially registered in 1977 with a former Minister of Industry as President. It has already started courses and consultancy services (see Appendix 1 g).

11.16 Establishing sectorial standardization in the construction industry

Changed to sectorial standards in the fastener

industry. National plan has been prepared and translated. Progress in calling industrial meeting and approving five-year plan is slow because of the immediate work of personnel involved (see Appendix 4 d).

11.17 Completion of film on TISI activities

Completed July 1978. Distributed on loan.

11.18 Completion of synchronised sound/slide programmes on standardization, certification, SI units and economics of standards

Programmes completed on standardization and certification, but others delayed because of departure of key staff and overload on designer.

11.19 Training on typesetting of standards and other publications

Completed on IBM typewriters but jeopardised because of resignation of typing staff. Suitable new staff will be trained as they arrive.

11.20 Training on offset camera and platemaking equipment

Completed by manufacturers and staff is capable of operating equipment.

11.21 Training of key personnel on programming on Monroe Calculator

Partially completed by former expert and instructions now given by head of section. Awaiting new QC expert to round off training.

11.22 Training of key staff in sampling plan techniques

Staff now substantially capable with the former expert training and return of two fellows with master's degrees in statistical quality control. Will be followed up by QC expert on arrival.

11.23 Training counterpart PR staff in preparing film, radio and television scripts

The PR department assisted on the TISI film script, has worked on two television scripts and has also prepared radio material.

12. CONSUMER PROTECTION

It has always been considered by the UNIDO expert on the project that an active consumer protection body would extend, supplement and reinforce TISI's efforts to elevate quality, if only by reason of external and non-political pressures on manufacturers and by virtue of the fact that it was an established network for impressing standardization and certification on a nation of consumers.

For this reason he sat as an honorary adviser to the Consumer Affairs Project of the National Council of Women of Thailand. Despite advice to the contrary, CAP confined itself to an educational role for a number of years. In 1976, the project manager prepared a Consumers Charter which was presented to the then Prime Minister. He handed it to the Minister of Commerce and shortly afterwards was removed from office. The president of the NCWT renewed the issue and the response was rapid. A National Consumer Protection Committee was set up in the early part of 1977 which is empowered to reinforce existing laws, suggest others and generally do all it can to provide effective consumer protection measures (see Appendices 1 h, i and 4 e, f).

As part of these measures, CAP, with sufficient funds and staff is seen in a key role. Accordingly NCWT asked the Government/UNDP for financial assistance of $16 000 over a two year period in which to launch a financially independent body, publishing a public newspaper on consumer hazards and information, lecturing throughout the country, setting up seminars for would-be lecturers and conducting comparative tests of products on the market. This has been agreed by Government and UNDP and now awaits UNIDO approval for attaching this sum to the TISI budget for administrative control.

13. SUMMARY

The project has been successful in establishing an active institute which is raising quality levels of Thai products in order to assist export acceptance and raise employment and investment levels by inducing the Thai community to prefer Thai products. It is also beginning to show some success in protecting the consumer by certifying widely used food and toiletry products.

The Institute is well-founded and is led by dedicated and energetic Thai executives who have managed to transfer some of this spirit to its core of experienced staff. It is quite unique in Government service.

Despite the general goodwill of many other Government departments and the understanding and support of the Ministry of Industry, the Budget Bureau and the Department of Technical and Economic Cooperation, progress has been, and is being, hampered by a deplorable lack of staff and some unsatisfactory test facilities.

The effect of the Institute's work on certain sections of the economy has been noticeable and its reputation for integrity has spread among Government, industry and responsible Press representatives.

Weaknesses are generally attributable to outside influences, to the transition of the country to an industrialised nation, to misunderstandings due to the comparatively short time in which it has been in full operation, and to low salary scales. But some retardation of progress is due to internal administration and it is hoped that the Government/TISI will take note of the recommendations made.

It has become, by any criteria, the national standards body of Thailand and its achievements so far have been substantiated not only by UNIDO expert staff and UNDP personnel, but by overseas bodies well-recognised internationally.

It is the opinion of the author that no serious decline of activities will take place once the last of the UNIDO long-term experts has gone, but that some assistance in fellowships, equipment and short-term experts should continue at least until the completion of the present

Country Programme. This assumption is also made with the proviso that the present executive staff remain in their posts.

Great expansion should take place and take TISI into closer collaboration with industry, key functions in public purchasing, basic support in the Government's developments within the five year plan, more technical contributions to international standardization and - ultimately - Codes of Practice and involvement in Factory Safety Acts.

14. RECOMMENDATIONS: JOINT GOVERNMENT/UNDP/UNIDO

It is suggested that all future appraisal of the TISI project should not be so microform. If the Institute is to function well and really effectively within the developing economy of the country it must be seen within the broader pattern of national endeavour. It is common, for example, to find important Government meetings on various aspects of the economy, e.g. exports, unattended by the TISI Director. It is also clear that, while adequately equipped in terms of intelligence and skills, the universities have little or no knowledge of the full scope of standardization and turn out graduates who are unable to comprehend the inherent economies and rationalization of standardization.

Future assistance should be looked at as a whole by all the organizations involved, since it is difficult to define any aspect - manufacturing, commerce, research and development, academic, Government purchasing, agricultural, medical, finance, investment, consumer protection - in which standards do not have an important role to play.

For these reasons, it is suggested that jointly planned operations surmounting the narrow view of TISI standardization and certification should be considered. On the part of UNDP/UNIDO, for example, it is possible that the parlous condition of the important tapioca industry may not have been reached if the advice of the project manager to involve FAO on crop increase and rotation, ILO on storage and bulk transport and management of factories and UNIDO on technical advice to processors and certification control (the only contribution) had been heeded. Together with this it is also doubtful whether the situation would have been reached if the Government had taken greater control of the industry in a general administration and had heeded the repeated warnings of the project manager and TISI directorate from 1974.

14.1 It is recommended that the joint parties involved adopt the project manager's proposals for 1979 contained in the notes prepared for the tripartite review in August/September. The provision for ancillary testing equipment will be a stop-gap arrangement until, in the author's opinion, the inevitable blockage is reached - the need for a basic test laboratory

of its own for the Institute.

An outline of the problems of testing is contained under 4. CERTIFICATION. These are not likely to be relieved to any great extent and will, within the next few years, prove a very serious obstacle to expansion.

It is recommended that Govt/UNDP/UNIDO discuss the possibility of establishing a laboratory for TISI which will deal with the most constant mechanical, electrical and chemical testing. It may be that these discussions should include bi-lateral assistance, since the building and equipment is unlikely to cost less than $500 000 and provision will have to be made in the TISI annual budget for yearly additions. Such a laboratory should include a workshop for building test rigs.

It is emphasized again that this is unlikely to deprive existing labs of work for TISI will have grown appreciably by the time it is established and there will always be a need for a network of supporting laboratories. But it will speed up certification procedures and boost voluntary applications.

14.2 That the joint bodies give serious consideration to the National Calibration Centre, which has been mooted for some time. To put matters plainly and simply, industrial development is based upon efficiency and efficiency is based, to a very large extent, upon accurate measurement - which means the ability to calibrate against national reference material. We have personally seen a number of factories where calibration of instruments was not carried out and production suffered accordingly. Such a Centre should be established in the Department of Science, Ministry of Industry, or in the Applied Scientific Research Corporation of Thailand. It is not overstating the case to support Dr. Mervyn Probine, New Zealand's Director of Physics and Engineering Laboratories, when he says:

"There can be no doubt at all that the general state of equipment serviceability is a serious problem in underdeveloped countries... low stocks of spare parts are held by instrument suppliers; and there is a shortage of servicing skills. The problem of instrument serviceability is often compounded by environmental factors such as high temperatures and high humidities, which lead to rapid deterioration of instruments even when they are not in use (contacts corrode, mould grows on the optics of microscopes, electronic circuits and components break down, and so on)...".

The situation in which companies have to send away foreign instruments - and be charged customs duty on their re-entry - obviously deters many. At least in the meantime, the list of scattered facilities available which was recommended in a report on the return of the project manager from the symposium in Singapore could be compiled. To quote Probine again on a situation which exists in Thailand: "In many countries in the region, user groups are unaware of facilities which could be used with instrument repair and calibration problems. User groups are also unaware of testing and analytical facilities which already exist."

14.3 Reference has already been made to the need for considering the wide economic effects of TISI and a review of the closely-aligned activities in the nation, the development of which could substantially assist the adoption and widespread use of standardization. Outlines of such steps are contained in the following paragraphs:

15. RECOMMENDATIONS: GOVERNMENT

15.1 That the haphazard distribution of Ministry of Industry factory licenses is a burden both upon TISI control and on the nation's economy. Many sectors of industry are over-saturated with productive capacity: the motor assembly industry, the match industry, the steel bar industry, the ballast industry, the tapioca industry, are just a few examples from many. It is evident that this has led to outputs far beneath the productive capacity of the plants and the inevitable high cost per unit. This has, in turn, driven bad elements in each industry to arrive at the lowest quality possible and price undercutting as the only means of staying alive. It has also intensified the difficulties of well-laid out factories intent upon producing good products and has burdened TISI in a constant struggle to control the smaller, unethical companies. (The recent conflict with small steel producers is an example. See Appendices 1 j, k and l).

It should not be too difficult for the Ministry to align its policy of issuing factory licenses with the national economic situation and refuse licenses where the existing productive capacity is heavily unused.

15.2 That the jurisdicial measures for the separation of TISI as a separate department be completed as soon as possible to improve the situation in TISI concerning administrative authority, promotion of staff, staff allocations and international authority (see Appendix 4 g).

15.3 That discussions with the Universities Board and technical colleges take place to implement a national and decisive change to SI units as the system of measurements. The Government of Thailand was an agreeing party to the Conference de Poids et Mesures in Paris in 1960 which agreed to convert to the new metric system. The majority of nations in the world have changed or are in the process of changing; the United

States has already started to change within industry. Most developing countries have legislated SI as the only system of measurement in their countries - even tiny Mauritius - and if steps are not taken soon to phase-in SI units as a national system to a programme along the lines proposed by the project manager, Thailand will find itself technologically isolated in many respects. It is not uncommon to find in universities one faculty still teaching in old metric - MKGS - and some teaching SI - and in one notable instance civil engineering being taught in ft., lb., when most of the Imperial system countries have already changed. In Sri Lanka, less developed than Thailand, all faculties, technology institutes and the like, teach in SI (see Appendix 4 h).

15.4 That the Government should set up a small unit of qualified personnel to offer consultation on quality and reliability in manufacturing processes and that this unit should plan a national Quality and Reliability Year in association with the Thai Quality Control Association. Similar events have shown excellent results even in the long-industrialised countries. A major theme should be the conservation of materials and avoidance of scrap by higher quality control.

15.5 That the Government should require by law all foreign national companies, particularly the multinationals, to comply with TISI standards where they exist and that they should certify those products to those standards. While the CMMC group of companies - wholly Thai - were the first to assist TISI get off the ground by submitting their products voluntarily for certification, foreign companies - notably Lever Brothers - have refused to do so. They claim that their products are above the national standard, but independent tests at the Department of Science have shown that many are not and some are, indeed, suspect from the national health point of view.

It may be put forward as a reason for not doing this that the current need to invite foreign investment precludes this type

of action. It is a false premise. Foreign companies are subject to controls along these lines in their own countries and will not be discouraged from making profits in Thailand by the need to comply with Thai standards.

15.6 That discussions take place with universities and technical colleges towards introducing standardization, quality control and certification into the curriculae of faculties teaching mechanical, electrical, chemical and industrial engineering, textile technology, industrial design, and that examinations and projects should be based on this teaching. Further, that a new standards degree - the first in the world - be introduced at universities based upon the course details structure proposals already given to TISI (see Appendices 1 m and 4 n).

It is possible that the Government could lead a joint UNIDO/ UNESCO project to cover both 14.3 and 14.6.

15.7 That Government - and aid organizations - give greater recognition to standards as a rapid - possibly the fastest - means of transferring technology. The ballast industry, for example, is made up of many small concerns, some of which were subject to legal action in the beginning; but all - substantial and small - are now producing these components to high international technical specifications by virtue of compulsory compliance with the standard.

15.8 That Government use the experience of TISI in wider context, particularly during those discussions on major developments in the Five Year Plan. Already cited are the natural gas and steel operations. As far as steel alone is concerned, there are still international discrepancies between the standards of one steel producing country and another. This could be eliminated by the selection of relevant standards by TISI in order to avoid confusion and misunderstanding and possible recrimination among consortium countries. In any case, a Thai terminological standard to harmonize steel nomenclature and descriptions will be needed from the outset of operations.

TISI can do much to avoid lengthy discussions between participating countries by selecting ISO international standards where they exist or naming the most appropriate foreign national standards.

15.9 That Government departments really try to solve the problem of shortage of staff at TISI. Enough has been said in other section of this report to make repetition unnecessary.

15.10 That the Government set up a Committee comprised of representatives of the Office of the Prime Minister, Ministry of Industry, Ministry of Commerce, Budget Bureau, Civil Service Commission, etc. to re-examine the proposals for a National Standards Organization purchasing system contained in the two documents submitted to the Government in 1977. With variations according to the views of the departments involved and with the stage-by-stage development proposed there is no reason why the Government should not be in a position of saving upwards of 10% of its national expenditure on purchasing by adopting this structure.

15.11 That a more realistic approach be made in the order of the Government's Sub-Committee that 50% of automotive parts be supplied locally by 1980. It is unreasonable to ask motor manufacturers to buy locally-made parts which do not match the quality and price of imported CKD parts. Toyota and Volvo have already investigated the supply of fasteners and have found little quality control, sub-standard and overpriced nuts, screws and bolts. A paralleled TISI programme of standardized components and certification would largely overcome this problem. Brake linings are a serious issue in this respect.

16. RECOMMENDATIONS: THAI INDUSTRIAL STANDARDS INSTITUTE

16.1 It may not be possible within the present Civil Service grading but the appointment of deputies to the Acting-Director, and heads of standardization and certification is urgently necessary. They are all carrying responsibilities which they should not have, particularly in the detail involved. The Acting-Director should not be involved in approval and discussion of quite small items such as how many desks to order; the head of standards should be able to concentrate purely on supervising her technical secretaries, sorting out technical committee problems and the thousand-and-one items concerning standards making - she should not be involved in budgetary and administration detail. The head of certification should be able to control policy, liaison with laboratories, training, control of certification team activities and liaison with the standards section when certain clauses in standard do not align themselves with the precise requirements, legal and otherwise, of certification.

To some extent, such added duties and involvement, are the result of their own conscientiousness and desire for perfection, but there are signs that larger issues drag on unnecessarily, suffering delays because of the amount of detail and small decision making which could be made by deputies.

16.2 The recommendations made by the author (see Appendix 4 p) concerning committee structure have been rejected, largely because, it is suspected, they do not fall within the experience of TISI and would be a departure from general practice across the world. Yet the weakness of some committees in professional strength because some Government departments and industrial associations send personnel who are little more than clerks cannot be dealt with by standing procedures. Either TISI should 'vet' committee members proposed and be prepared to reject them through the proposed form or it should deviate from common practice, appoint the general committee as at

present, which, in turn, appoints a working committee of high professional skill and interest. In this way, depending upon general committee approval at the conclusion of the draft standard, the calibre of the standard is likely to be higher, the completion of it faster and the Government will save money expended on honoraria.

It avails Thailand little to proceed along those lines soundly established in other countries if such procedures clearly are not wholly effective.

16.3 The compulsory match standard has become a standing joke in the community and TISI should either seek to rescind the Royal Decree and avoid all association with the very bad quality of Thai matches, or take action against the worst of the manufacturers. Despite repeated assurances of the foreign managing director of the Thai Match Co. that steps were being taken to improve his production, the product has become measurably worse and it is in fact now a fire and accident hazard.

Recent personal tests of packs of twelve boxes showed that no box exceeded 50% of matches which functioned, one box contained 43 matches out of 53 which did not ignite properly because the heads were barely dipped. It was a common experience that the friction surface became smooth and unusable before the matches were used.

The company's output has become, in other words, tantamount to fraud upon the public, quite apart from the damage the product inflicts on clothing and person. The author has had two boxes catch fire during the act of igniting the match.

Punitive action would only serve to benefit the industry. There are far too many companies for Thailand's needs and each is producing at an uneconomic unit cost.

16.4 The constant need in TISI - and one which is likely to persist for years to come - is the lack of industrial experience of its graduate staff. It is very difficult for a technical committee secretary to contain manufacturers' objections if she/he has had no practical experience in industry and is unable to argue effectively against biased objections. Fellowships and training courses help considerably and experience will be gained gradually, but it would benefit TISI in the author's opinion to arrange three-month sabbaticals with industrial companies in Thailand in order to gain actual manufacturing experience. A number of progressive companies would cooperate.

16.5 By virtue of the fact that they are working together, fellows returning from degree and study courses impart some of their knowledge, but it would help if more positive action were taken in the shape of arranged small-group training sessions during which the returning fellows could pass on the salient features of their training.

16.6 As certification grows, the pressures upon TISI staff will continue, even if the staff problem is cleared up. For this reason, TISI should consider in the near future suitable 'agency' arrangements for imported goods whereby testing and certification will be completed within the country of origin, leaving TISI to carry out occasional spot checks instead of the batch certification as at present. Under this arrangement, manufacturers would be responsible for the cost of testing and certification and relieve the Government of these costs and themselves of unnecessary work.

It is understandable that, in order to avoid even further antagonism from companies coming under a compulsory standards order, that test fees should be covered by the Government, but it is recommended that some consideration be given to a requirement that all companies, voluntary and compulsory, should pay test fees in the future. An announcement one year ahead of

such a decision would prepare companies and also provide an incentive for them to improve their own quality control arrangements in order to reduce the frequency of TISI testing.

It would be difficult to find any other country which takes the attitude that companies which manufacture under compulsory order should not pay for periodic testing. A period of, say, five years should have changed the climate of Government/Industry relationships sufficiently to convey that certification is a double check upon their own quality control arrangements.

16.7 TISI's committee for establishing test fees is fast approaching the state of being unrealistic. The high cost of testing is inhibiting applications and the decisions of the committee should come under closer scrutiny of the Standards Council. It is ludicrous, for example, to charge 18 000 baht for testing electric cooking rings which cost only 2-300 baht and little justification can be found for charging 8000 baht for electricity and 10 000 baht for 'labour'. Since most laboratory assistants get 2-3000 baht a month, this is tantamount to saying that the testing of a single simple cooking ring will take up the work hours full time of an assistant for nearly three and a half months or two for half that time!

16.8 It seems difficult to see why some 30 applications for certification are held up because of the inability of test houses to acquire the necessary test equipment. Standards, unless they are of the non-certifiable type, should be examined for test availability <u>before</u> they are accepted on the TISI schedule.

16.9 I would recommend quicker action made upon recommendations of some time ago to install air-contitioning and more fans in certain rooms. It is not only unfair, but bad management practice to expect loyalty to the job and hard work in the face of noise and dust pollution and humid heat.

17. RECOMMENDATIONS: UNDP AND UNIDO

A number of recommendations are inherent in various sections of the main body of the report. To these should be added:

17.1 Recognition by UNDP that a national standards institute affects practically all projects and all agencies to a greater or lesser degree. In order to integrate activities and provide a valuable forum from which it would be possible both to inform the agencies what TISI is doing which would affect them e.g. the compulsory regulations which require that their counterparts order products to TISI standards, and gain from them what national standards would be useful for other project operations, the project manager detailed a UN Standards Committee. This was never implemented by UNDP and there seems some reluctance to do this.

17.2 Greater flexibility in applying project documents. This has already been referred to in regard to Fellowships see page41 It also suggested that the TISI project should be examined from the point of view of terms of support longer than single years under which revisions have to be raised every year. This is time consuming within the Institute, DTEC and UNDP/ UNIDO and inhibits development plans since it is never quite clear whether UN support is to go on from year to year.

In regard to this flexibility, emphasized in New Demensions, but seemingly ignored in procedure, it borders upon a bureaucratic Alice-in-Wonderland to have to submit purely administrative changes in project documents within the overall budget to the full procedures of joint Signatures. Certainly this is time-consuming and an obstacle to urgent procurement.

17.3 There is a greater need for a review of recruitment procedures at UNIDO. The UN agency in each country cannot be relied upon to place job descriptions in the most fruitful centres. Some years ago, a system for using the professional journals of each country to recruit was given to the then Asst. Director,

UNIDO who was visiting. The basis of this is still sound. Professionals read their professional journals. Many professional journals would print job opportunities in UNIDO as a service to their readers. In addition to this, inexpensive advertising in one newspaper, well recognised in each country for its employment pages ('The Sunday Telegraph' in Britain, for example), would also materially help.

In the meantime, attempts to find recruits and also to place fellows in locations normally difficult to find from a distance seems to be frowned upon in Vienna. It is difficult to see why since the expert often has contacts in his home country and others which are suitable. All means should be employed to find the right man for the job and the right location for fellowship studies: none will jeopardise the authority of the UNIDO officials.

17.4 The instructions concerning Form E-2 GOVERNMENT PERSONNEL in the UNDP semi-annual reports should be revised. It is a long process to list every single name of relevant staff on a project, especially when it is growing beyond 100. Numbers should be accepted; if there is any doubt about the accuracy, a full list could be called for as a spot check at any time.

17.5 The comments already made concerning a broader overview on the part of the Government also apply to United Nations assistance. The rate of progress of TISI would be substantially increased if attention were paid to universities, technical colleges and industrial training generally. It is part of the project manager's responsibilities to effect liaison with the various bodies concerned (a quality control system for the Production of School Science Equipment project and various universities were part of this) but active project assistance in these areas should be seen as a whole of the movement to implement standardization and quality control. A paper, with some detail was submitted to the then SIDFA, Kurt Aselmann, and UNESCO was asked to comment but no pressure was exerted to put this into a practical proposal.

17.6 The New Dimensions document proposals for aid to selected non-Government organizations was well-received and in this respect it is to be hoped that the proposals concerning a prominent consumer organization in Thailand will also be approved by UNIDO. (See 12. CONSUMER PROTECTION).

In respect of this UNDP document, the greater use of nationals from developing countries in technical assistance was also noted with satisfaction. It is suggested that, once efficient deputies have been established at TISI, Mr. Chaiwai Sangruji, Acting-Director; Mrs. Phani Na Rangsi, head of standards section; and Miss Kanya Sinsakul, head of certification section; should be considered, either to assist very new standards bodies in this or other regions or to be recruited in any organization under ASEAN determining regional standards. Quite apart from their technical qualifications, they have experienced the constant struggle to build a standards institute in a developing country and may be better able to understand the problems inflicted on other developing institutions than a technically highly-experienced person from the industrialised world. At present they would resist any such suggestion but the approach at a relevant time should be made.

17.7 In view of Mr. Waldheim's agreement with the Secretary General of ISO that the whole UN structure will adhere to the international paper sizes in the 'A' series as soon as stocks are expended, there seems little justification for agencies continuing to order every paper size given to man. If UNIDO projects are to try to achieve rationalization and known economies in this field, it behoves UN agencies to be the first to display practical adherence to these principles.

17.8 Similarly, in an international organization which has recourse to the expertise of the world, the UN family shows itself technologically backward by a decade in publishing documents in units other than the SI metric system now being adopted throughout the world. It is time for a hard-and-fast rule

that expressions of measurement in all UN technical documents shall be in SI (see Appendix 4 m). There is little justifi a-tion for UN to continue to publish in outmoded units simply because permanent staff may themselves be unfamiliar with SI units.

17.9 It will be apparent that an active Press and information service has materially influenced those who, in turn, had influence upon the progress of the project. ILO and other agencies employ information officers - UNIDO has to rely upon the good offices of the UN Chief Information Officer in Bangkok, who freely admits that he has little time other than ESCAP work to pay attention to the agencies.

All UNIDO projects, whatever their size, could gain greater prestige and thus greater support from Government officials, by responsible publicity, and it is recommended that UNIDO consider the appointment of strategically placed Press and Information officers.

18. MISCELLANEOUS

This report has not covered active assistance - often involving substantial reports - to other projects in Thailand and the region, to projects in Africa, Hong Kong and the Philippines, to visiting and resident experts. Nor is detailed reference made to discussions with the Japanese Standards delegation, Indonesian Government officials on tapioca and monosodium glutamate, the National Bureau of Standards survey team, German bi-lateral experts concerned with standards operation, the International Organization of Consumers Unions, and many others seeking cooperation and assistance (see Appendix 4 o).

19. APPENDICES

Series 1: News stories relating to this report
Series 2: Company advertizing
Series 3: General feature coverage of TISI
Series 4: Relevant memoranda.

Most news items have been chosen from the English-language Press for obvious reasons. There is no indication of the large number of features in Thai.

BANGKOK POST

MONDAY JAN. 1977

War on fake ballasts

THEY look like parts of a well-known name in electrical equipment. But they are fake and dangerous to use.

The small manufacturer in the heart of Bangkok was caught red-handed when certification officers of the Thai Industrial Standards Institute swooped on his factory recently. Samples of his illegal products were taken by TISI, components put under official seal and his factory virtually closed.

This is the latest incident in the institute's unremitting war against sub-standard ballasts which have been identified as a major cause of fires in Thailand. Mr Chaiwai Sangruji, acting director of the TISI, commented:

"We have carried out over 240 raids in Bangkok and the provinces and there's no doubt that we have reduced the production of these bad ballasts to a small percentage. But we know that some retailers, particularly up-country, are still stocking them. This is a warning that we have the power to prosecute anyone selling them as well as making them. Small shopkeepers should beware of unidentified salesmen who come round in trucks selling ballasts. Deal only with recognised company salesmen. Stocking sub-standard ballasts could cost you a fine, or even a prison sentence—or both."

He went on to advise shopkeepers: "If you don't know which brands are safe to stock, check with a reputable wholesaler. He should have a list of those ballasts which are officially approved."

BANGKOK POST 26 July 1978

Penalties alarm tapioca firms

TAPIOCA product manufacturers were in a turmoil yesterday following news of the heavy punishment meted out to the owner and manager of the Saha Puetchpol Tawan-ok Co Ltd for adulterating their tapioca products with foreign matter.

While expressing their concern over very heavy penalties, they nevertheless indicated that it would lead to a great improvement in the export quality of these products.

Prime Minister Kriangsak Chomanan, using Article 27 of the Interim Constitution, sentenced Mr Hanghua Pathommarutapong the proprietor of the company to life imprisonment and fined two million baht for adulterating tapioca pellets with as much as 76.3% sand and gravel in certain cases.

Mr Anukit Kittivorakarn, the manager of the company's plant in Chon Buri Province was sentenced to 25 years imprisonment too. Besides this, the company's operating licence was also revoked.

This punishment is the heaviest ever to be imposed for adulterating agricultural products with foreign matters in this country's history.

There are at the moment, several hundred tapioca mills throughout the country, and there are fears that many more owners and managers will be arrested and punished if the officials concerned keep stricter controls on the quality of the products. By law, tapioca products should not contain foreign matters of more than 3%.

While stating that the quality of the tapioca products will now be greatly improved since tapioca manufacturers would take greater care over the quality of their products, the manufacturers expressed the fear that their competitors or enemies could try to sabotage them.

"All that is needed is for the government officials concerned to find excess foreign matter in the products and we are guilty, even though we may not know anything about it," they said.

In an effort to prevent this sabotage, it was reported yesterday that millers had issued stern instructions to their plant managers and others to take extreme care in producing the tapioca products. Furthermore, instructions were also issued by exporters that any purchases of tapioca products were to be very carefully vetted before being accepted.

Tapioca products are a major source of foreign income for the country. In the first half of this year, Thailand exported some 3,168,272.8 tons of tapioca products.

Bangkok Post Thursday 28 October 1976

Who will be the lucky one?

SOME lucky person is going to step on 500 baht this week when he or she walks over a collapsed balloon on the field or road. Each balloon has a label on it and the finder has to post it back to the Thai Industrial Standards Institute at Rama VI Road, Phyathai to be eligible for a draw for 800 baht — 300 baht will go to the person who sends the balloon and 500 baht to the finder.

Hundreds of shoppers at Rajdamri Arcade sent up some 1,600 balloons last Saturday. The programme was part of the TISI's World Standard Week which was the Thai contribution to similar events recognised by 81 nations to bring focus attention on the national need for standards and certification of products.

The balloon carried the Institute's national quality mark and the slogan "Buy Value-for-money. Look for the Mark."

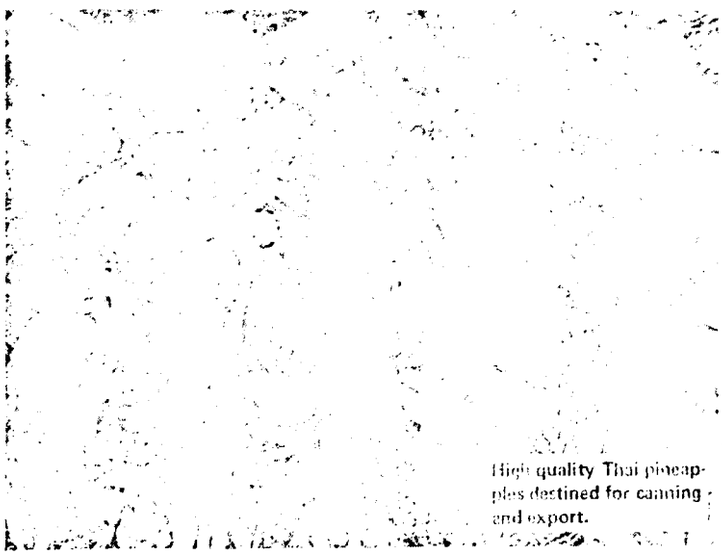
Left: These children are seen among the shoppers who have released the balloons at Rajdamri Arcade last Saturday.

APPENDIX 1d

BUSINESS POST

Vol. XXXII No. 16 BANGKOK TUESDAY JANUARY 17, 1978 SECTION II

Canned pineapple exports up 30%



High quality Thai pineapples destined for canning and export.

THAILAND's exports of canned pineapple last year increased by about 30 per cent in volume while the earnings increased by about 35 per cent, the Board of Trade stated yesterday.

The BoT estimated that total exports of canned pineapple last year were around 80,000 tons, worth about 845 million baht, as against 61,445 tons worth about 605 million baht in 1976. However, the exact export figures for 1977 are not yet available.

The BoT however reported that Thailand had, in the first 10 months of last year, shipped out 69,018 tons of canned pineapple worth 705 million baht.

The United States was the largest buyer, taking 33,203 tons worth 336 million baht in the first 10 months of 1977, and this accounted for 48 per cent of the total exports.

Other important buyers were Germany, which purchased 12,917 tons of canned pineapple worth 106 million baht, and Japan, which bought 4,218 tons worth 36 million baht.

The BoT stated that prospects for Thai canned pineapple in Japan are good since Japan has been producing less canned pineapple of its own.

Okinawa, which normally produces between 1.4 to 1.5 million cartons of canned pineapple a year, produced only one million cartons last year since farmers turned to other crops instead of pineapple.

The BoT forecasted that Thailand will be able to export some 110,000 tons of canned pineapple worth about 1,200 million baht this year.

MARKETS

However, Thailand would be able to produce even more canned pineapple for world markets, should the Government encourage farmers to grow more pineapples to supply the canneries.

The canneries have been facing a major problem for years in that they cannot get sufficient supplies of pineapples.

BUSINESS NEWS

BANGKOK WEDNESDAY JUNE 20, 1973

Controls slapped on dangerous lighting

NEW regulations have been sanctioned which will make it an offence to manufacture or sell sub-standard ballasts for flouresecent lighting, according to a Ministry of Industry report.

The sanctions followed growing public concern about these products, apart from the Police Department's findings that they are a major cause of fires in Thailand.

A standard was recently prepared by the Thai Industrial Standards Institute and all ballasts made in Thailand as well as the imported ones will now have to be certified or approved by TISI that the equipment is up to this standard specifications, the report said.

This certification scheme, the report explained, involves testing of the product, investigation of the factory's quality control systems and then periodic visits and tests to make sure that the standard is maintained.

According to the report companies who have been given the certification licence when everything is satisfactory will be entitled to mark the ballasts with the TISI certification mark.

Householders, electrical engineers and contractors will be able to see the mark when buying, either on the product or on the package.

Spot checks will be made on ballasts bought in retail outlets to make sure that the system is not being abused.

The regulations will make it an offence to sell uncertified ballasts after a certain date so shopkeepers selling sub-standard ballasts that are spuriously marked will be liable to prosecution, the report warned.

Mr Chaiwai Sangruji, acting director of TISI, said yesterday "the regulations will take a little time to go through of course, but manufacturers of ballasts would be wise to apply now for the certification licences. The tests and factory surveillance take time to complete and a rush of applications after the regulations have been announced could cause a bottleneck which could damage the trade."

Business Times
Thursday 6 July 1978

Savor Your Nam Pla Again—It May Be Fake

A RANDOM survey by the Public Health Ministry has shown that 23 brands of nam pla, or fish sauce, available in Thailand are below standard.

The probe concentrated on the scores of cheap brands which retail for between 2 baht to 4.50 baht per bottle. The worst "fakes" uncovered by the ministry's investigators showed that what the customer gets is merely salt water mixed with a coloring agent.

The Medical Science Department announced yesterday that the survey was randomly conducted from January to May this year throughout the metropolitan area and upcountry centers.

Of the 23 offenders brought to light, 11 were producing from Bangkok factories, three were located in Samutsongkram, three in Cholburi, two in Udon Thani and one each in Samut Prakarn and Yala.

The department said the names of the offenders cannot be made public because no laws exist to charge them with adulteration or sub-standard production.

The people who can afford the genuine standard nam pla which retails for about 10 to 12 baht, are much better protected.

The Thai Industrial Standards Institute has accepted nine brands from seven producers as being of exportable standard.

Made from a base of fish and/or squid and salt water and involving fermentation of anywhere from two to 12 months, the more expensive brands undergo strict quality control on a regular basis.

APPENDIX 1 8

PROGRAM A :

Profit – Making Through Quality – Achieving For Thai Industries

one–day semiar for top management

PROGRAM B :

How To Solve Quality Problems In Our Workshop

three–day seminar for middle management

PROGRAM C :

Quality Control For Foremen

five–Saturday training program for foremen

Organized by

TECHNOLOGICAL PROMOTION ASSOCIATION (THAI–JAPAN)

In association with

QUALITY CONTROL ASSOCIATION

Waree BHONGSVEJ
President
Technological Promotion Association (Thai–Japan)

The importance of quality control in production has been recognized and top and middle level management of industrial enterprises have attached more and more importance to this overtime. Plant engineers and supervisors in particular must be familiar with quality control techniques and should be able to apply these techniques in their work.

In order to increase the capability of Thai employees directly involved in the production process, the Technological Promotion Association (Thai–Japan) has invited Dr. Noriaki Kano, an expert on quality control concepts and techniques from Japan to participate in the forthcoming quality control seminar and training course.

Our association wishes to thank the Quality Control Association of Thailand and Thai seminar leaders for their kind assistance and cooperation which has helped to make this programme possible. I hope that the proposed seminar and training course on quality control will be beneficial to all participants and will help to further develop Thai industries.

Thank you.

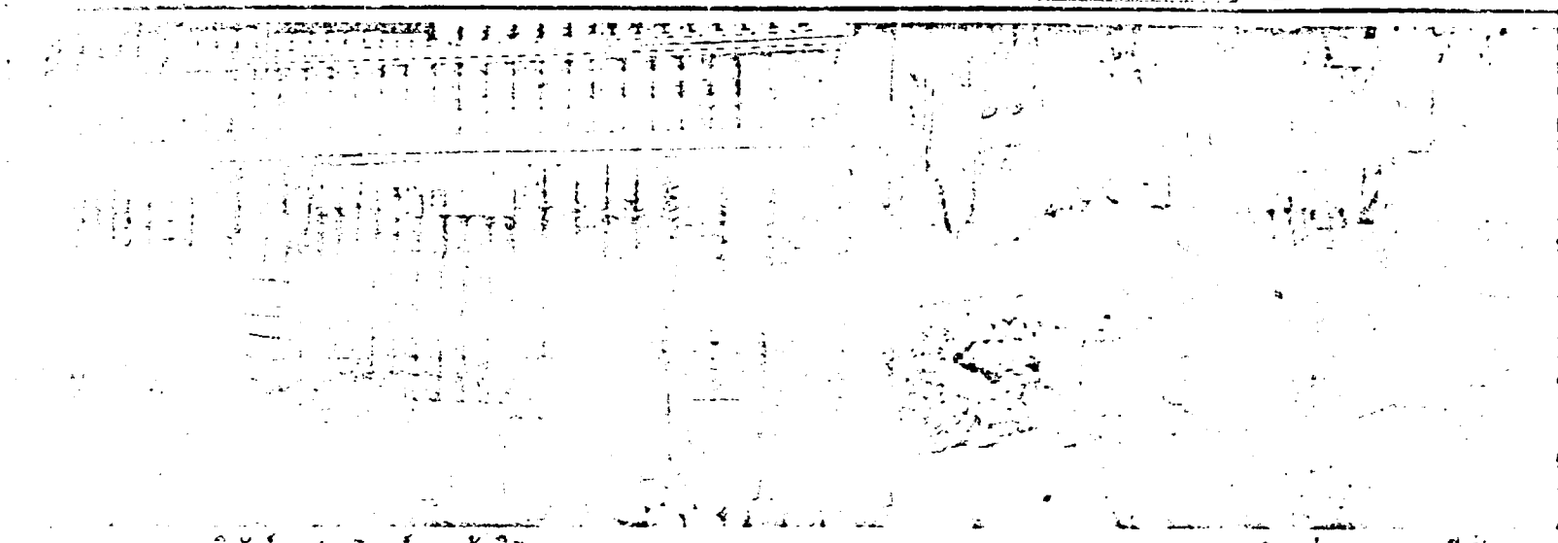
Waree Bhongsvej

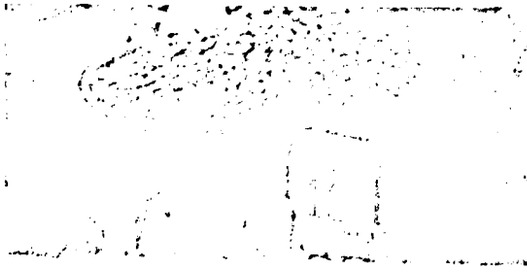
Aroon SORATHESN
Chairman
Quality Control Association

As Chairman of Quality Control Association in Thailand, it is my pleasure to have this Quality Control joint-program in association with the Technological Promotion Association (Thai-Japan). Since our ultimate aim in developing our local industries to such a standard as that of some of our neighbouring countries, and Japan can be recognized as one of the industrial leaders by making this progress through quality control. Our participants should take the most of the advantages to learn some new techniques and to discuss with the invited QC expert, Dr. Kano, an internationally renowned consultant who has experiences not only with QC business in Japan, but also in other countries.

You may all agree with me that quality control means "product effectiveness" but "system effectiveness" could not at all be ignored, and your application of these techniques will lead to success of the society that you now belong.

Aroon Sorathesn



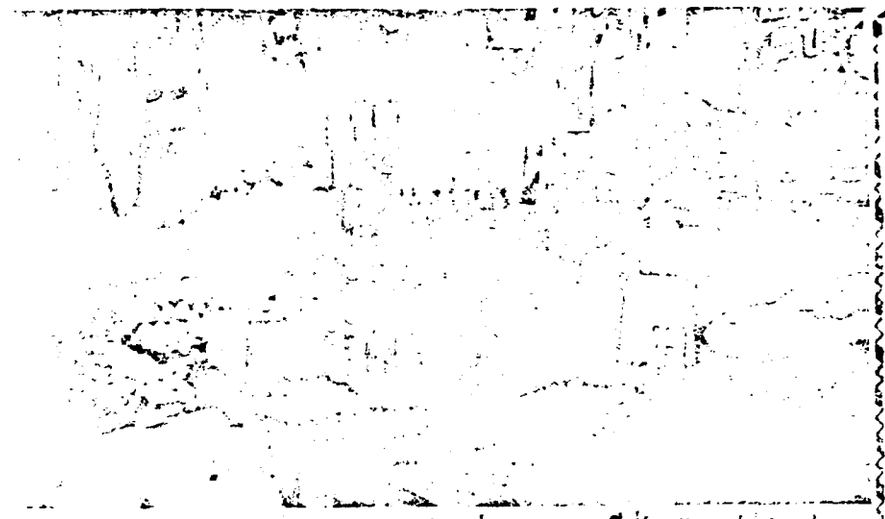


ความคิดเห็นของผู้บริโภค-

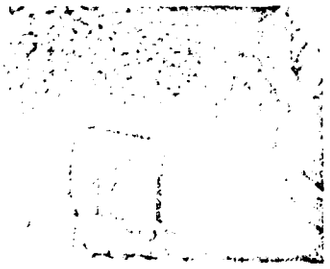
ในกลุ่มประเทศเศรษฐกิจ

SECTION 1

The Power of Consumer in Foreign Countries



ในกลุ่มประเทศเสรีทั่ว ๆ ไป (ไม่นับกลุ่มประเทศคอมมิวนิสต์) ต่างก็มีองค์การพิทักษ์ ป้องกันผลประโยชน์ผู้บริโภคทั้งสิ้น ในกลุ่มประเทศสังคมนิยมก็มีหน่วยงานของรัฐบาลซึ่งควบคุมรับผิดชอบในด้านนี้ เพื่อไม่ให้อาหารที่มีส่วนผสมที่เป็นพิษเป็นอันตรายต่อร่างกายมนุษย์เข้าไปสู่ตลาดได้ หลายปีมาแล้วข้าพเจ้าได้ซื้อ วิทยุทรานซิสเตอร์ ผลิตในรัสเซีย ข้าพเจ้าประทับใจที่ตัววิทยุทนทานแข็งแรงมาก แม้ว่าปุ่มสวิทช์หน้าปัดจะไม่ค่อยสวยงามนัก แต่ก็ทนทานดีทีเดียว นับเป็นประสบการณ์อันน่าอนิจจาต่อสินค้ารัสเซียของข้าพเจ้า เท่าที่ทราบมา ประเทศเขาได้มีการสอดส่องควบคุมอย่างใกล้ชิดในด้านกรรมวิธีการผลิตในด้านอาหารการกินและสุขภาพของประชาชนมาก



การเคลื่อนไหวของกลุ่มผู้บริโภคหลายประเทศได้ทำให้เกิดมีการ ก่อตั้งองค์การพิทักษ์ผลประโยชน์ผู้บริโภคขึ้นมากมาย ในด้านที่ [illegible] สมาคมนี้เป็นตัว

พลัง

[illegible] ในสหรัฐอเมริกา [illegible] ได้ทำการเปิดโปงการผลิต ซึ่งรัฐบาลไม่สามารถจะจัดการอะไรได้เลย เพราะประชาชน จำนวนมากไม่ยินดีที่จะให้มีการควบคุมการผลิตของบริษัทต่าง ๆ เหล่านี้ เช่นที่จังหวัดโอเรกอน บริษัท เอเมอรัล แอคเซอรี่ ซึ่งเป็นผู้ผลิตรถยนต์รายใหญ่ เกี่ยวกับความปลอดภัยของรถยนต์ที่ผลิต ก็ยังสามารถเปิดโปงได้ว่าเป็นความประมาทเลินเล่อของบริษัทรถยนต์นั้น นับจนถึงปัจจุบันสมาชิกสมาคมผู้บริโภคในสหรัฐอเมริกามีจำนวนถึงสิบล้านคน ได้เรียกร้องให้ [illegible] ล้านคน ตลอดจนรายงานให้ประชาชนได้รู้ถึงการกระทำของบริษัทรัฐบาล ตั้งกรรมการขึ้นมาเพื่อพิจารณาถึงสินค้าหรือการโฆษณาและทำการแก้ไข จนกระทั่งรัฐบาลได้มีการจัดหน่วยงานขึ้นมา [illegible] และ อี.พี.เอ. เป็นต้น ซึ่งนอกจากจะให้ความช่วยเหลือแล้วยังไม่ห้ามจำหน่ายในประเทศไทย

[illegible] ผู้บริโภค [illegible] ผู้ผลิตของเราที่ไม่ต้องคอยระวังว่าอาหารที่เขากินเข้าไปจะเป็นพิษหรือไม่ ตัวอย่างที่เห็นง่าย ๆ ในผู้ผลิตของเราก็คือ [illegible] บริษัทไข่เป็นต้น [illegible] ทราบว่าสินค้าของเรานั้น ไม่มีประสิทธิภาพที่จะใช้ป้องกันการเจ็บคอหรือหวัดได้ ถึงแม้ว่าจะไม่เป็นอันตรายต่อผู้บริโภคก็ตาม แต่ก็ถือว่าไม่มีคุณค่าในทางการแพทย์เลยอย่างใด นี่คือการป้องผลประโยชน์ของผู้บริโภคอย่างแท้จริง และจะเกิดขึ้นได้ต่อเมื่อเราได้พร้อมใจกัน

ตัวอย่างเหล่านี้คงจะชี้ให้เห็นว่า ผู้บริโภคของเราถ้าสามารถที่จะรวมกันเป็นกลุ่มได้ ก็จะทำให้รัฐบาลให้ความช่วยเหลือสนับสนุนได้ อย่างไรก็ตามสิ่งที่เราสามารถทำได้ [illegible]

SECTION 2

Business Post 26/7/78

AILY BANGKOK JULY 27, 1978

Let the Consumer Beware

The Consumer Protection Committee yesterday released guidelines to help consumers recognize the most common ways dishonest merchants deceive the public. The committee warned the public to be on the lookout for the following frauds:

Deceptive packaging. Check the net weight or volume whenever possible and watch for containers with two lids or thick bases and perfume bottles with extra thick glass.

Misleading brand names. Foreign brand names are often used to give the impression a product is imported, while some merchants try to capitalize on the reputation of another brand by imitating its label.

Exaggerated advertising. Some products are claimed to be "a million percent" effective, one of the easy deceptions to spot.

Sales gimmicks. Sales are promoted by giving away prizes and unnecessary "extras" usually resulting in extra cost to the buyer.

Sub-standard and hazardous products. Some manufacturers use raw materials without consideration for consumers' safety, such as sulphuric acid in orange juice and lethal coloring in some foods.

TRADE WINDS

Running haywire

WORD HAS IT that small manufacturers of wire rods and steel bars are busy trying to get the Government to postpone the enforcement of production standards their product. The fact that the manufacturers received a one year notice of this move is ignored, for many of the manufacturers have not made this slightest attempt to improve the quality of their products during this time.

While the price of these products is fairly low—infact even below the Government controlled price — the small manufacturers have consistently been able to under cut the prices of the larger manufacturers between 500 and 1,000 baht per ton! Appeals are now being made for sympathy, but considering the fact that low priced, sub-standard wire rods and steel bars have caused numerous accidents in constructions — with loss of life having occurred in some cases—the public has little sympathy for the manufacturers.

But what about sympathy from officials? Reports say that some very devious "broker" has been in touch with manufacturers saying that all can be fixed—so, the poor, misguided manufacturers have now raised a fund of something like eight million baht! What they will do with this fund is anyone's guess, but somehow, I can't help but think it would have been better to use it to improve their products!

Maew Mong

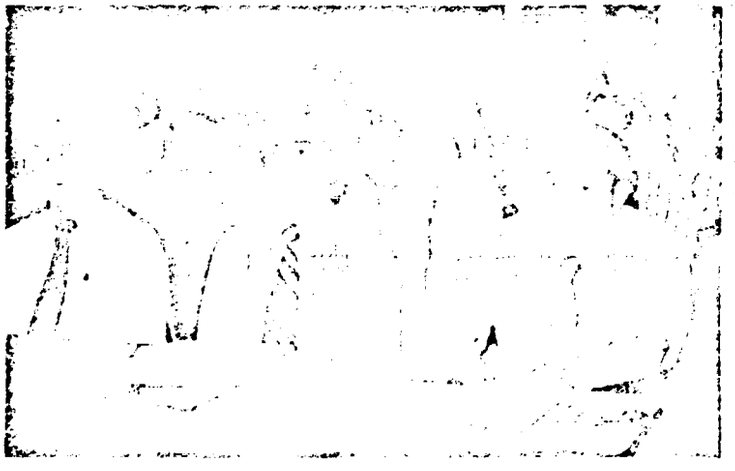
BANGKOK POST WEDNESDAY JULY 20, 1977

TISI meets millers on steel bars issue

SIX steel bar manufacturers yesterday met the Ministry of Industry's Thai Industrial Standards Institute (TISI) officials to request it to postpone its plan to control the production quality of steel bars by two years.

The six manufacturers, Union Metal, Saha Viriya Steel Works, Chonviriya Steel, Bang-na Machinery, Muang Thai Steel Works and Mayer (Thailand) Ltd told TISI at the meeting yesterday that they had brought in large quantities of raw materials for their re-rolling mills which is sufficient.

They said that if the quality of the product was put under control they would be effected.



Some of the steel mills' representatives at yesterday's meeting with TISI.

เดอะเนชั่นรีวิว วันอังคารที่ 21 กุมภาพันธ์ พ.ศ. 2521 7

The Nation Review
Tues. 21 Feb 1978

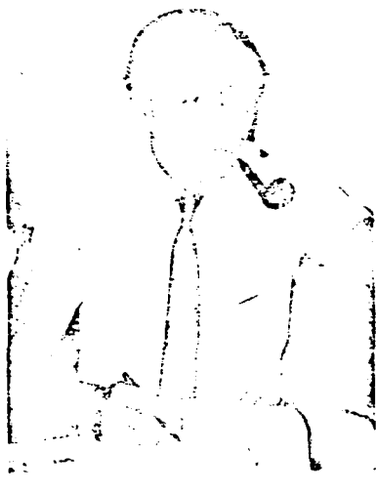
Steel bar producers warned of compulsory standard production

THE Thai Industrial Standards Institute yesterday issued a reminder to steel bar producers in the country that only 5 months was left to get their production processes geared up for standard production.

Under a Royal Decree which has already been signed, manufacturers of sub-standard bar for reinforcement purposes have until 1 August this year to bring their products up the TISI specifications. The effective standards are TIS 20: Round steel bar; TIS 24: Deformed steel bar; and TIS 211: covering Rerolled bar.

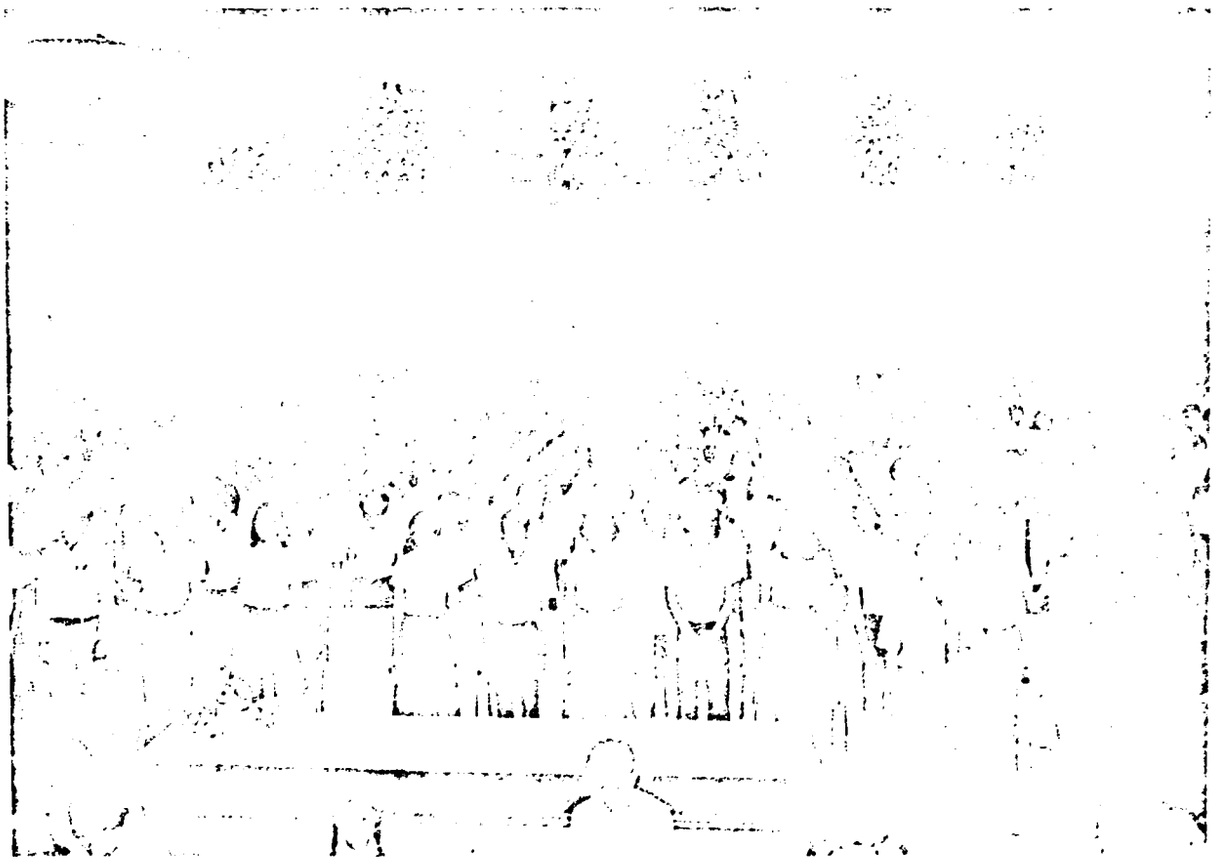
The decision to enforce compliance with the standard came as a result of alarm expressed at the potential economic damage of exporting sub-standard bar and of risks to the public at home and overseas. The two largest steel bar producers have voluntarily had their products certified by TISI for some years and are unlikely to be affected, some smaller companies will have to install test equipment and make sure of their smelting processes. Two public hearings were held, as the result of which TISI produced a more recent additional standard to cover rerolled bar – and this will now be compulsory along with the ingot steel products.

TISI is issuing a reminder that it will also be illegal to stock and sell sub-standard bar and stockists are advised to clear present stocks before August 1 if they contain sub-standard bar. Under the Industrial Standards Act, fines or prison sentences – or both – can be imposed. Sampling and testing will take place continuously by TISI's certification team.

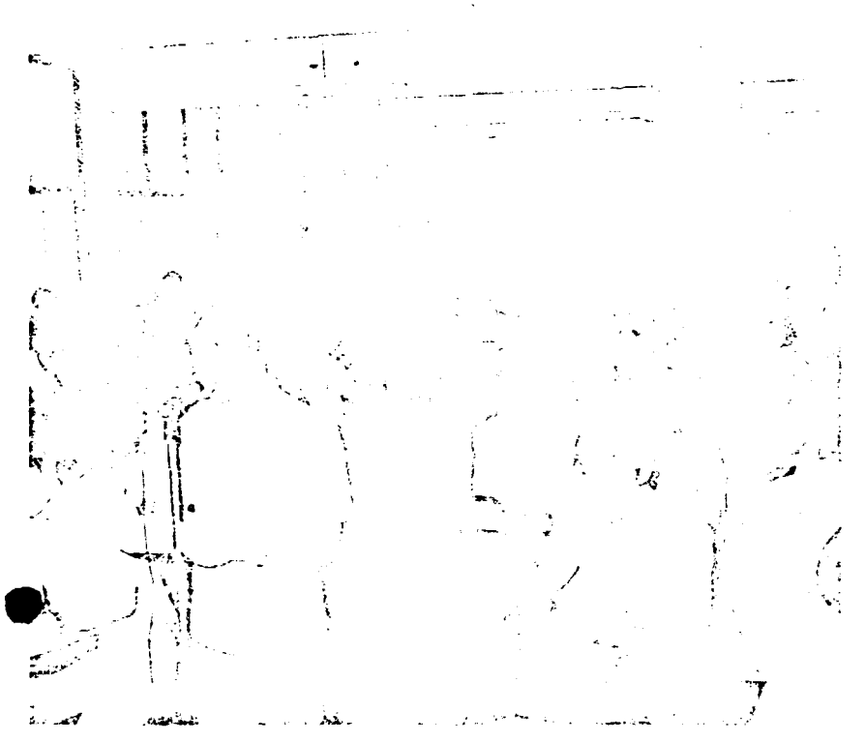


UNIVERSITY TRAINING: Weak in Standards Technology

by Rohn Hopper



IT is well-recognized in Thailand by the more discerning onlookers that the future of the country lies in the quality of its training at grass roots levels. Agriculturalists who will develop more yield per acre and combat crop disease, chemists, physicists and engineers who will find more use for the country's natural resources, civil engineers who will find faster and cheaper methods of building, electrical and mechanical engineers to develop home industries – these emerge from the universities and colleges.



In terms of prosperity, there is no such thing as a purely agricultural economy. A backbone of industry to support the economy in the event of floods, crop failure etc. is an essential requisite, just as the ability to process agricultural products safely and hygienically is a marked contribution to the balance of payments.

But an industry grown willy-nilly, production based upon outmoded techniques, quantity attempts with no quality control, excessive use of imported materials and components, over-dependence upon tariff protections – this is no backbone, it is a further weight on the nation.

The standard of university training grows each year. Faculty staffs are growing in strength as more and more Thai graduates return with foreign doctorates and master's degrees. Obviously the calibre of the students and their knowledge and skills will also increase as a corollary of this. The increasing managerial role of Thai personnel in foreign based companies and the work – sometimes brilliant – coming from research and development departments are additional evidence.

Yet in one area – standardization – universities remain strangely stagnant. It is a state of affairs which is costing the country dearly.

In the experience of the author, university lecturers by and large have used standards – especially fundamental international electrical and pump standards etc. – and are familiar with them as reference works, but do not recognize them as essential course materials in their own right in industrial engineering, industrial design, drawing office methods, production management, industrial economy and numerous other faculty subjects. Talking to one university student of Industrial Design, I asked him if he understood the vital role of standards in designing for industry. "Er – no," he said. "In any case standards have nothing to do with our work. You see our job is to create good new designs for products – standards don't come into it!" He seemed a little bit puzzled and somewhat anxious when I told him that neither I nor any efficient manufacturer would employ him, on the grounds that his beautiful designs might cost the company far too much money in production costs. He was even more baffled when I explained that a very large proportion of the design specification references in the British Design Centre, possibly as advanced as any in Europe, quoted at least one British Standard number. He had apparently not been told, nor had ever learned in his faculty, that the good industrial designer combines progressive design around standard components and materials which are easier and cheaper to get, are certainly easier to make in production, and which give known performances.

The point at which he became disgusted with himself – and possibly with me for telling him – was when I referred to the Concorde. Certainly no slouch when it comes to advanced aeronautical design, the aircraft's construction includes no fewer than 80 British and French standards.

To teach modern science and technology without setting aside part of the curriculum to instill the key function of standards is like trying to fire a gun without the firing pin. In terms of fitting Thai young people for a practical role in industry, commerce or whatever, the omission is a grave disservice.

Whenever the Thai Industrial Standards Institute has lectured at universities, students have been interested and even excited at the work they are doing. The most common complaint is "why won't you publicise your work more so we know about it". Despite the fact the TISI has published millions of words and there is hardly a reputable journal in the country which has not carried features about it, the answer lies only partially in publicity but largely with integral units such as the universities and colleges which should be showing a much more realistic approach to the development of standardization in the country.

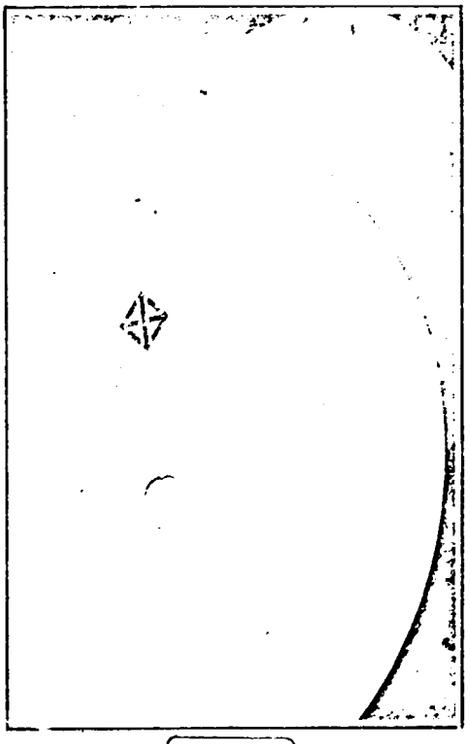
This is a sweeping statement, of course, and does less than justice to individuals who serve on TISI's technical committees or who teach quality control, modular coordination and other subjects invariably involving standards. Nevertheless, as a blanket conviction, it stands. There is little national or coordinated effort in universities to press home the benefits of using standards as working tools and their wide economic influence.

Some serious collaboration could rectify the situation and Thailand could go on better than the rest of the world, in fact. To the best of the author's knowledge, no country in the world has yet given a standards degree. Yet the subject is so widespread in its implications, so fundamental to the spread of technology and economic progress that a BS (Standards) has long been overdue.

Can we look forward to the day when the universities in Thailand will lead the world in this respect?

APPENDIX 2a

SIAM KRAFT FIRST KRAFT PAPER MANUFACTURER TO RECEIVE TISI AWARD



We are proud to announce that Siam Kraft Paper Company Limited is the first kraft paper manufacturer to receive TISI Standard Mark from the Thailand Industrial Standards Institute. This recognition means that Siam Kraft's product specifications have met with the high standards set by TISI for this type of industrial product.

Siam Kraft is a Thai public company. As the largest paper and pulp manufacturer in Thailand, we are aware of our crucial role in the technological development of this basic industry as well as in saving the country's precious foreign exchange.

From cement bags to high quality corrugated box papers, our products play a part in making life easier for everyday living, they also make the packaging of products more economical.

With our production capacity soon to be raised to 90,000 tons per annum, the company's mill in Ban Pong, Ratchaburi will be able to meet the country's demands for kraft paper for many years to come.

We pledge that our high standards will be maintained.

SIAMKRAFT

THE SIAM KRAFT PAPER CO.,LTD.
BANGKOK 9. P.O. Box 9-53

TRAGEDY

BANGKOK POST

FRIDAY JULY 23, 1976

APPENDIX2d

On August 14, 1976 TISI Standards for electric wire become compulsory.

Thai-Yazaki wants you to know.

From TISI Press Information Bulletin, 30 June 1976:

Only forty-four days are left before TISI's compulsory standard for electric wire is enforced. Electrical engineers are urged by the Thai Industrial Standards Institute to refer to the standard mentioned in bidding and designing from now.

According to the Royal Decree published in the Government Gazette of 16 April 1976, TISI compulsory standard for electric wire will come into force after the 14th August. By then it will be both illegal to manufacture and to import the products without the TISI quality mark on them. Wires of different quality and sizes from those specified in the standard may still be offered on the market but in much less quantity than is produced before the date of enforcement.

TIS 11-1975: standard for PVC insulated cables and flexible cords classified cables and flexible cords by rated voltage and PVC insulation and sheath by their maximum operating temperature. The cables and cords are divided into three types—cables for fixed wiring, flexible cables and flexible cords. Each type may be insulated alone or both insulated and sheathed. Number and diameter of cores in each type of conductors and its nominal cross sectional area are also clearly specified. Details of this may be found in the Government Gazette No. 92, section 210 of the 10th October 1975 or from the standard. Anything less than the dimensions and properties quoted in the standard will be dangerous to use.

"Of course, all manufacturers and importers should now urgently apply for licences" said Acting Director of TISI, "but what is of real significance is that general buyers and engineers should also use this standard as a reference in buying and designing, especially when the installed after 14th, considerable inconvenience may occur if this warning is ignored. Contractors too should take extra precautions about present or imminent involving wiring installations."

Acting Director of TISI went on to say that the Standards Council had applied for a Royal Decree because of the widespread use of substandard wire and the possibility of its being the source of a number of fires. "Manufacturers distributors, designers and engineers should now cooperate to get the standard wire on the market and in use as soon as possible," he said.

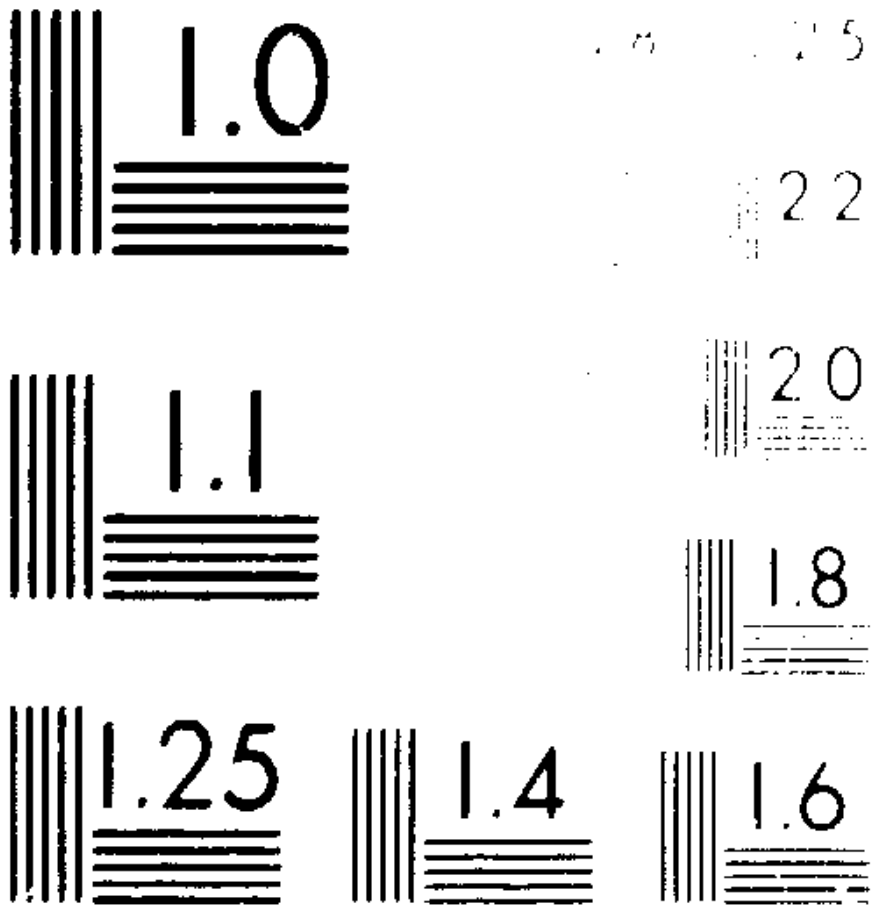
Thai-Yazaki is proud to announce that we will be the first company to secure TISI approval for all our wires under TISI jurisdiction. These wires include IV, TW, THW, VAF, and NYY.

Thai-Yazaki products bearing the TISI seal have been subjected to rigorous government testing to ensure the highest standards of rating accuracy, manufacture, material, and in-use integrity.

The TISI seal and the Thai-Yazaki name—your double assurance of quality.

THAI-YAZAKI

[illegible] Bangkok
P.O. Box [illegible] 25205[illegible], 25135[illegible], 25195[illegible]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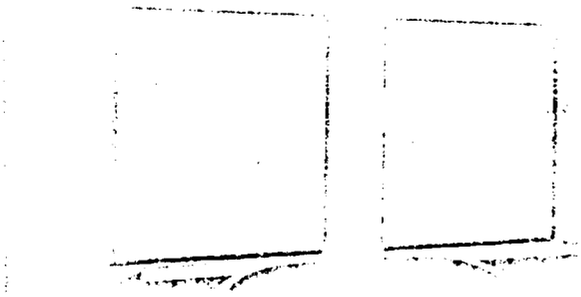
ผลิตภัณฑ์อิฐมอญดินเผา
ในประเทศที่เหมาะสมที่สุด



กระจกฉนวนสำหรับใช้กับอาคารมีคุณสมบัติที่เหนือกว่าวัสดุก่อสร้างอื่น ๆ คือ เรียบใส และ โปร่งแสง ด้วยเหตุนี้จึงเป็นที่นิยมใช้ในสถาปัตยกรรมทั่วไป เพราะนอกจากจะช่วยกันบังลมและฝนแล้ว ยังช่วยเพิ่มความสว่างและความสง่างามแก่บ้านเรือน ทำให้ผู้อาศัยภายในมีธรรมชาติภายนอกและคนภายนอกเห็นความงามของภายในได้ ดังนั้นจึงเป็นที่นิยมใช้ทำหน้าต่าง ห้องโชว์สินค้า เฟอร์นิเจอร์และอื่น ๆ อีกมาก

บริษัท กระจกไทย-อาซาฮี จำกัด
1018 อาคารกาเธ่ยุทธรัตน์ ชั้น 3 ถนนพระราม 4 กรุงเทพฯ
โทร. 523131

SECTION 1

SECTION 2

3 copies

Congratulations to Isuzu motor Co. Thailand Ltd.

from

APPENDIX 2f

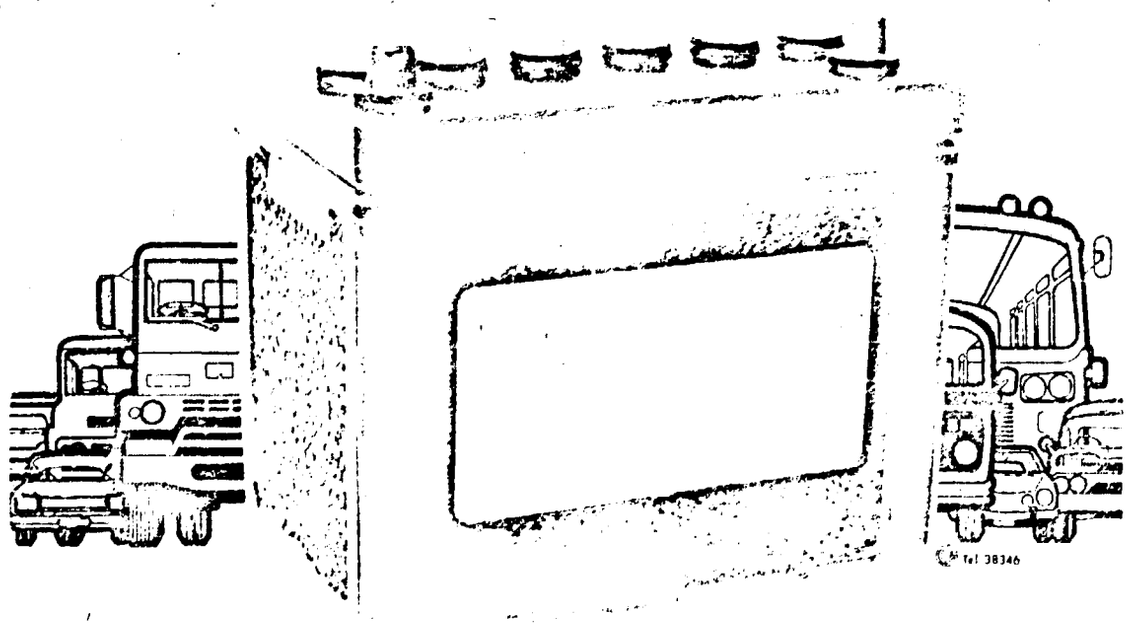
BATTERY YUASA

OUR BATTERIES GUARANTEE

By

THAILAND INDUSTRIAL STANDARD INSTITUTE

มอก.6-2513



YUASA BATTERY (THAILAND) CO., LTD.

237 919 5151 LATE [illegible] RAMKHAMHAENG ROAD BANGKOK THAILAND

TELEPHONES 910123 910433 912843 P.O.BOX NO. 1181 BANGKOK

Round Bars RB25 RB22
RB19 RB15
RB12 RB9
RB6

Quality SR24

[illegible] Steel Co., Ltd.

88 Phoochao Saningprai Road,
Samrong Tai, Prapradaeng Samutprakarn.
Head office: Tel: 940022
Sales Dept. Tel: 940020.
Purchase Dept. Tel: 940023

THE [illegible]
PERMITTED TO
BY THE THAI

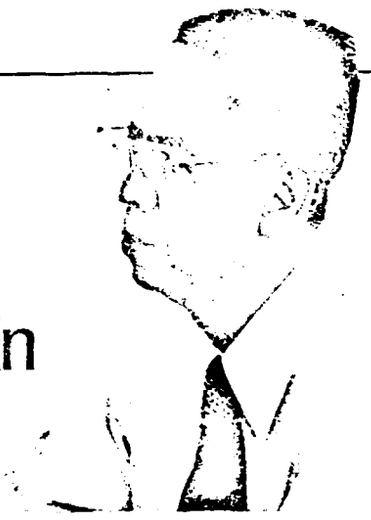
STEEL COMPANY OF CANADA.

USE THE STANDARD MARK OF QUALITY

INDUSTRIAL STANDARDS INSTITUTE.

Interview

APPENDIX 3 a



Standardisation Widens the Profit Margin

In the last five years, industry and, to some extent, the public has gradually become aware that there is a national quality mark backed by the Thai Industrial Standards Institute. So far, standards and all that the word implies have been taken to be the main prop in efforts to raise the quality of products in Thailand. THAILAND BUSINESS interviewed Mr. Chaiwai Sangruji, Acting Director of the Institute, who revealed that there is much more to standardisation and its direct effects on the economy of the country, as well as industry, than most people realise.

THAILAND BUSINESS:

Mr. Chaiwai, the first complaint I have is that TISI is obviously beginning to become known in industrial and business circles, but the general public is, as a whole, unaware of your work.

CHAIWAI SANGRUJI:

That's probably true – except where certain products have shown the mark on television. But this was deliberate policy as far as publicity went. The first priorities were to let industry, other Government officials and technical education establishments know what we were doing...and to get their collaboration of course. After all, there wasn't much sense in going to the public, if standards were not being used.

How far would you say you have succeeded in this objective?

Not nearly enough. I don't think we'd ever be satisfied with the results anyway. We think that many more Government officials know of our work and certainly the major industries know something about us – but there are still a large number of medium- and small-sized companies who are not aware of standardisation.

Among the universities – well, it's hard to tell how far we have penetrated. At King Mongkut Institute of Technology, a survey of 300 students showed that over 60 per cent were aware of TISI and its work and some 40 per cent recognised the mark. This is encouraging – but whether this is characteristic of all technical institutes, I wouldn't like to say.

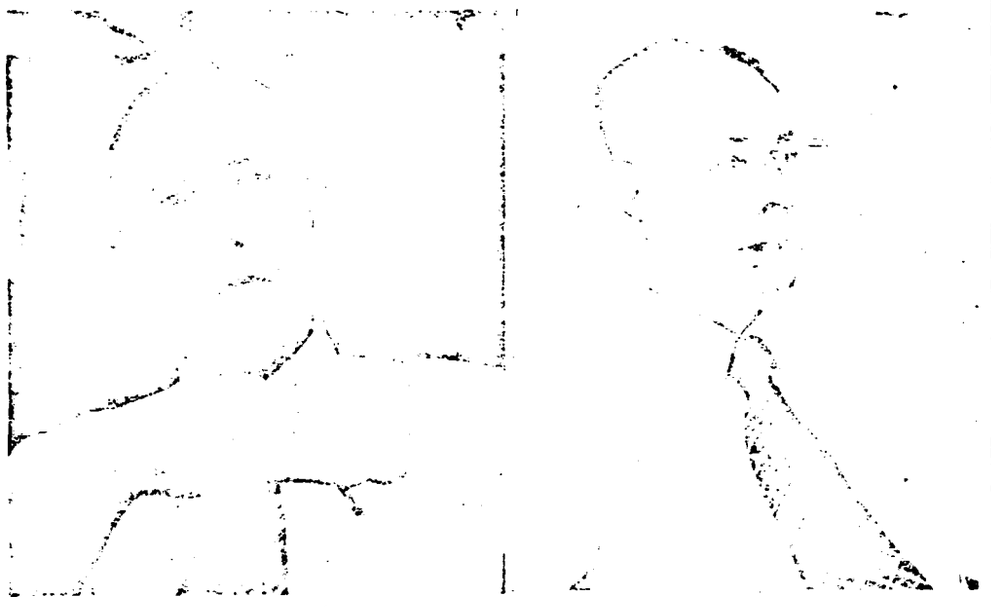
Why haven't you aimed more publicity at the general public until recently. Surely it was in your interests to get them behind you?

Yes, of course, but there is an adage about 'marketing' – if I may use the term – that you never excite interest unless you have the goods on the shelf. In this case, we haven't certified many consumer goods. We had been too busy cleaning up areas of high priority – building materials and products, electrical goods, export commodities, etc. It is only in the last year, that some important consumer goods have been certified, and now we are trying to attract the eye of the public.

Clearly, there is much to be done in the area of raising the quality of Thai goods. Will you now concentrate on general information and public awareness?

No. There are *two* major areas. One is to increase the general publicity; but, perhaps it is more important to wean industry and business away from the idea that standards are only important in quality control. That is a major element of our work, of course, but the eco-

Quality control



Hopper & Chaiwai: 'We must harmonize our standards...

TISI Makes Us Make It Better

By NOPPONG EOH
Business Times Staff Reporter

Back in 1968, 43 people in Glasgow mysteriously died over a two-week period. Starting what was to be a lengthy investigation, Scottish health authorities quickly learned that all had been regular patrons of a sandwich bar in the city.

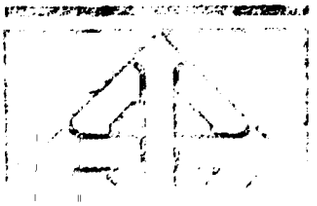
The unfortunate lunchtime customers had fallen victim to ptomaine poisoning, large traces of which were found in the festering remains of a 2 lb. chunk of canned corned beef originally imported from South America.

What the authorities eventually determined was that the beef, after being canned hot by a processer in Argentina, had been dipped into a polluted river to cool off. Because the soldered seal had one small hole in it, the vacuum effect created inside the can as the meat cooled down, drew the filthy water inside and started the poisoning.

Although this tragedy occurred 10 years ago, it remains a pertinent example of the need for reliable industrial standards some hard lobbying by the Industry Ministry. Its launching was given added vigor by UN funding worth some $1.25 million, along with technical advice regarding the framing of necessary regulations.

Today, a total of 258 standards have been published and TISI is putting the finishing touches on 18 more to be announced before the end of the year.

Mostly, it takes 3 years to establish a new standard

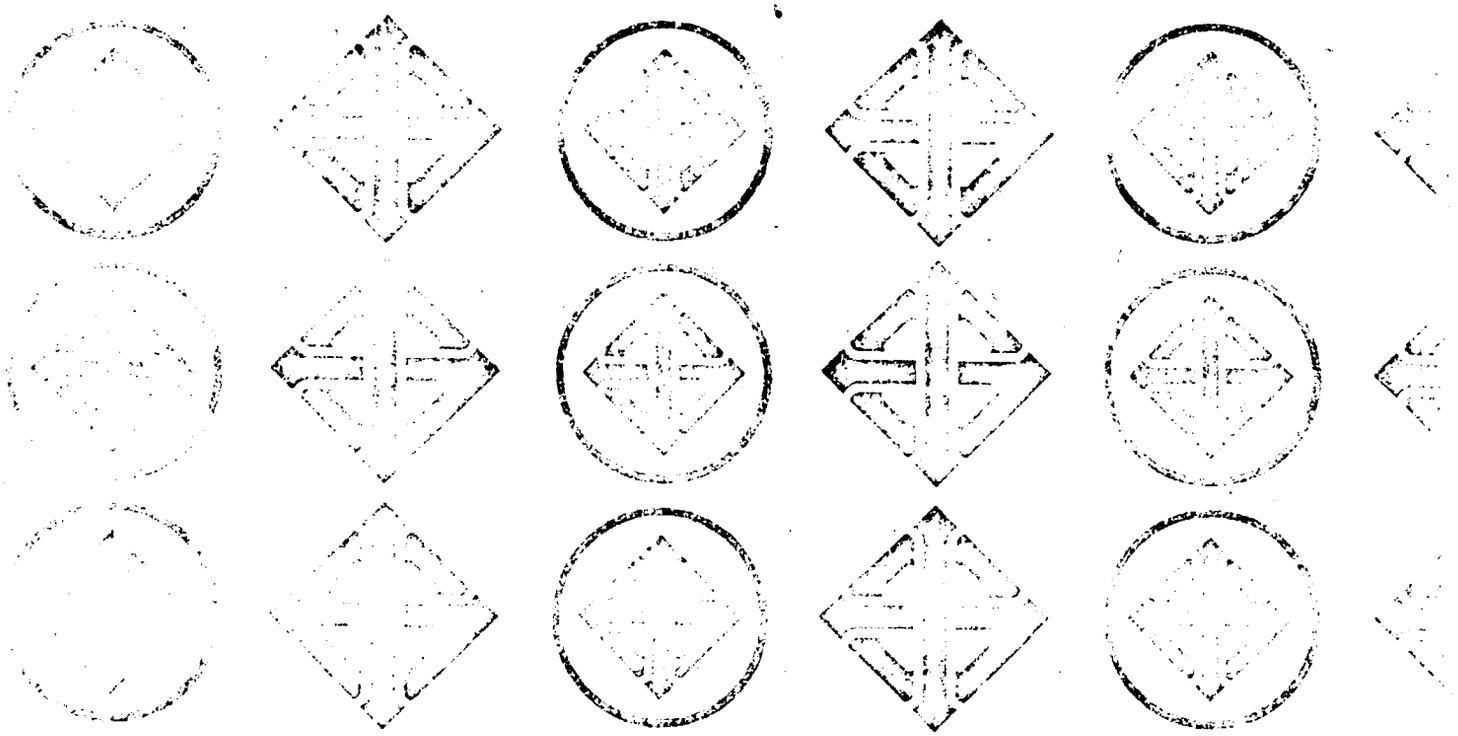


But much preparation went into the smooth workflow of today. TISI's first years were spent in administrative organization and the gathering of information on international standards. Officers had to be trained in the complexities of definition and committees established and put in motion.

The first product standards — for Leclanche type dry cells and batteries—enacted in 1970, and the first certificates were awarded in 1972.

Standards were issued gradually: 10 in 1970, 11 in 1971 and then a falloff to four in 1972. But as the operation became more efficient the figures jumped. Of the 258 now devised, seven are compulsory and the rest voluntary. These do not include drug and pharmaceutical production standards, which come under the control of the Ministry of Health.

Compulsory standards are applied only in cases where inferior products would be potentially injurious to the human



A supplement of the Bangkok

They said it couldn't happen

remember."

People at the Thai Industrial Standards Institute heard it again and again in the formative years of the Institute. They heard it in Thai and listened to it in English.

But the critics were wrong. It did get off the ground – and at a pace remarkable by comparison with many other countries. Today, the Institute has published 25 standards. The following year it published more than the previous three years output – 37. In 1974 it almost repeated the performance of producing more than the preceding four years and published 60 standards.

manufacturers were only interested in making products as cheaply as possible, which regardless of their performance would sell in large numbers. The companies themselves could spell out good reasons for doing this. 'The Thai public,' they said, 'is not educated into looking for value-for-money. They'll buy the cheapest object they can find, even though it might be better value to pay a little more and

In October 1972 the Institute issued its first two licences to companies allowing them to use the quality mark on their products. To date - 2 1/4 years after it started, TISI has

made to its standards. Companies can produce their goods to the standard and need do nothing more – except in the small number of cases where there is a compulsory standard. If they then have to persuade their customers that they are indeed using a standard specification. To avoid any doubts and give themselves a sales advantage, they can provide them - selves with independent of-

SECTION 1

the Standardisation

Supplement of the Bangkok Post

couldn't happen in Thailand

...ere only published 25 standards. The made to its standards.
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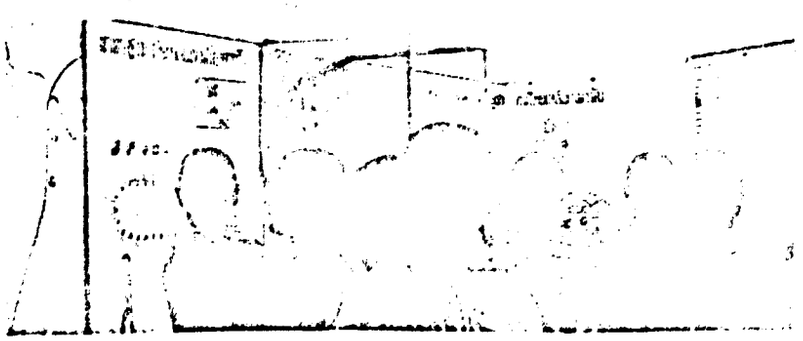


APPENDIX 3 d

Watchdogs of quality

Thai Industrial Standards Institute

ONE OF the major criticisms of the Thai government's recent effort to restrict unnecessary imports has been the charge that, far from encouraging local industries to reach a higher level of product quality, measures which limit foreign competition will only create undesirable complacency. While such fears are understandable, they need not be realised if more support and attention is given to the work of the Thai Industrial Standards Institute (TISI).

TISI is in the business of setting acceptable standards for manufactured goods and commodities in Thailand. At present it covers products ranging from Portland cement and spark plugs to toothpaste and tapioca products. In all, more than 270 standards covering some 70 different products have been established by TISI.

A TISI standard is simply a publication containing technical data and information on a product. It is prepared by a committee made up of manufacturers, users, governmental officials, university lecturers, and other specialists who possess special knowledge in the area covered by the standard. What is produced is a set of specifications based upon international levels of acceptability or, in some cases, if they are sufficiently recognised, upon the standards of a foreign country.

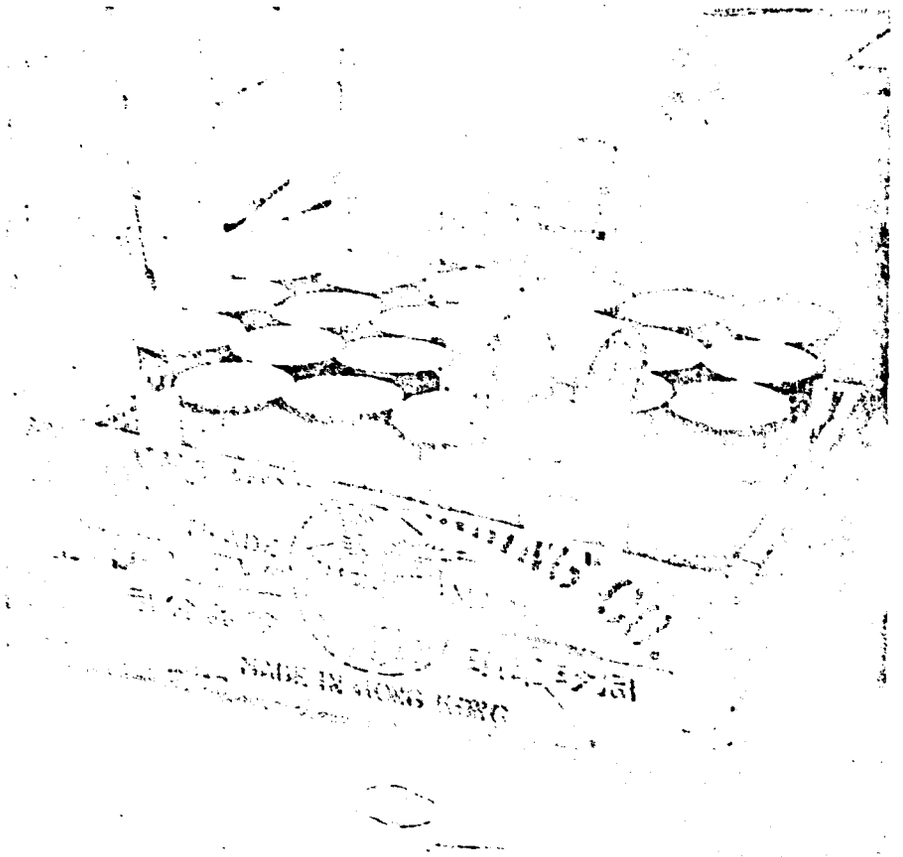
Responsibilities

TISI is within the Ministry of Industry and is governed by a Standards Council that consists of the directors-general of the Departments of Industrial Works, Science, and Industrial Promotion, and is chaired by the under secretary of state for the Ministry. Other representatives on the Council include members of the Ministries of Agriculture, Interior, Commerce, and Public Health, as well as a broad range of other governmental and private organisations. Its responsibilities include the setting of policy, accepting proposals for standards, awarding licenses, and arbitrating in the event of disagreements among members of technical committees.

The procedure for obtaining certification for one's product has been devised to be as straightforward and troublefree as possible. Application is made with TISI along with a nominal fee of five baht. After ensuring that the application papers are complete and have all the preliminary information the agency needs, TISI officials arrange to make a visit to the factory, or factories, involved. The purpose of the on-site inspections is not only to see if production is conforming to the prescribed levels, but also to determine whether the manufacturing plants are capable of consistently maintaining the quality of production. While at the factory, TISI officials will study the overall industrial environment, check the plant's facilities for inspection and testing of the product, and evaluate the programme of quality control. Samples will be taken for testing to see how the product measures up in the areas specified by the standard.

Test performance

The results of the factory visits,



A few large canning factories have been attempting to promote sale of other canned fruits and vegetables besides pineapple.

The Thai Industrial Standards Institute (TISI) stipulates all exporters require TISI licenses before they are given permission to ship goods out of the country. This made the local manufacturers upgraded the standards of their products.

APPENDIX 3 f

...great headway

Continued

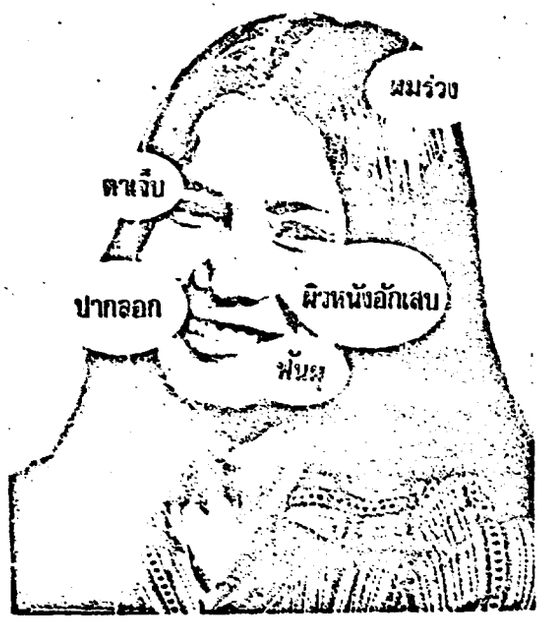
their plans, realising that only by having their own plantation can they be assured

suitable land for planting. This tended to put an effective brake on the plantation

industry source, credit must also be given to the local manufacturers for their vo-

วันที่ 20 มีนาคม พ.ศ. 2519 ปากชน

Siang Suang Chon
20 March 1976
Thailand



สมาคมป้องกันความงามสตรี เตือน ระวังภัย จากเครื่องสำอาง

สำนักงานมาตรฐานผลิตภัณฑ์อุตสาหกรรม เตรียมกำหนดมาตรการป้องกันอันตรายจากเครื่องประทินความงามของสตรี เพื่อป้องกันมิให้เป็นโรคต่าง ๆ

รายงานข่าวจากกระทรวงอุตสาหกรรมแจ้งว่า ในการที่สตรีใช้เครื่องประทินเช่น สเปรย์ แชมพูอาจทำให้ผมร่วง อายเชโด อายลายเนอร์ ลิปสติก ยาสีฟัน บรัชออน แป้ง และครีมบำรุงผิวต่าง ๆ ซึ่งสตรีหลายท่านอาจจะกำลังประสบอันตรายโดยไม่รู้ตัวอยู่ทุกวัน จากเครื่องสำอางคุณภาพต่ำ โดยที่ตระหนักถึงอันตรายดังกล่าวอันอาจจะเกิดแก่สุขภาพสตรีทุกท่าน สำนักงานมาตรฐานผลิตภัณฑ์อุตสาหกรรม จึงดำเนินการให้มีการประกาศกำหนดมาตรฐานเกี่ยวกับเครื่องประทินความงามและสิ่งชำระล้างร่างกาย ไปแล้วหลายเรื่อง เป็นต้นว่า เครื่อง

APPENDIX 38

B upis

Broadcast : New licenses and Standards

APPENDIX 3 h

(ข่าววิทยุกระจายเสียงแห่งประเทศไทย ข่าวในประเทศภาคเช้า วันที่ 14 มกราคม 2516 เวลา 07.00 น.)

นายชายไหว แสงรุจิ ผู้อำนวยการสำนักงานมาตรฐานผลิตภัณฑ์อุตสาหกรรมและนายฮอปเปอร์ ผู้เชี่ยวชาญด้านมาตรฐานของสหประชาชาติ ซึ่งมาช่วยปฏิบัติงานตามโครงการความช่วยเหลือที่สำนักงานมาตรฐานผลิตภัณฑ์อุตสาหกรรมได้ร่วมกันชี้แจงแก่ผู้สื่อข่าว เรื่องการกำหนดมาตรฐานและการอนุญาตให้ใช้เครื่องหมายมาตรฐานผลิตภัณฑ์อุตสาหกรรมแก่ปูนซิเมนต์ปอดแลนด์ และเหล็กเส้นเสริมคอนกรีตชนิดเหล็กเส้นกลม ที่ใช้ในการก่อสร้างว่า การที่คณะกรรมการมาตรฐานผลิตภัณฑ์อุตสาหกรรมได้ให้ความสนใจในการกำหนดมาตรฐานของปูนซิเมนต์ปอดแลนด์ประเภทหนึ่ง ซึ่งเป็นปูนซิเมนต์ที่ใช้ในการก่อสร้างโดยทั่วไป และเหล็กเส้นเสริมคอนกรีตชนิดเหล็กเส้นกลม เนื่องจากได้พิจารณาเห็นว่าปูนซิเมนต์และเหล็กเส้นเสริมคอนกรีตดังกล่าว เป็นองค์ประกอบที่สำคัญในการก่อสร้าง ซึ่งในปีหนึ่ง ๆ ประเทศไทยได้ใช้จ่ายเงินเป็นค่าก่อสร้างในทุกด้าน ทั้งด้านการก่อสร้างอาคารบ้านเรือน ถนนหนทาง เขื่อนกั้นน้ำ สะพานและอื่น ๆ เป็นเงินรวมกันประมาณ ๘ พันล้านบาท นอกจากนั้น ยังปรากฏเสมอว่า สิ่งก่อสร้างบางอย่าง เช่น อาคารได้ยุบหรือพังทะลายลงมา อันเนื่องจากการใช้วัสดุก่อสร้าง ที่ไม่ได้ขนาดหรือไม่ได้มาตรฐาน เหตุนี้ คณะกรรมการมาตรฐานผลิตภัณฑ์อุตสาหกรรม จึงได้มอบหมายให้คณะกรรมการวิชาการ พิจารณากำหนดมาตรฐานของวัสดุก่อสร้างประเภทต่าง ๆเพื่อให้เกิดความปลอดภัย มีความมั่นคงถาวร และอยู่ในระดับมาตรฐานอย่างเดียวกัน ซึ่งนอกจากจะเป็นผลดีต่อการก่อสร้างแล้ว ยังทำให้ได้รับความเชื่อถือจากผู้ใช้ และจากตลาดต่างประเทศด้วย ในกรณีที่ได้ส่งออกไปจำหน่าย ทั้งนี้ คณะกรรมการมาตรฐานผลิตภัณฑ์อุตสาหกรรมได้พิจารณากำหนดมาตรฐานของปูนซิเมนต์ปอดแลนด์ และมาตรฐานของเหล็กเส้นเสริมคอนกรีตชนิดกลม เสร็จเรียบร้อยแล้ว และได้ประกาศใช้มาตรฐานดังกล่าวด้วยแล้ว

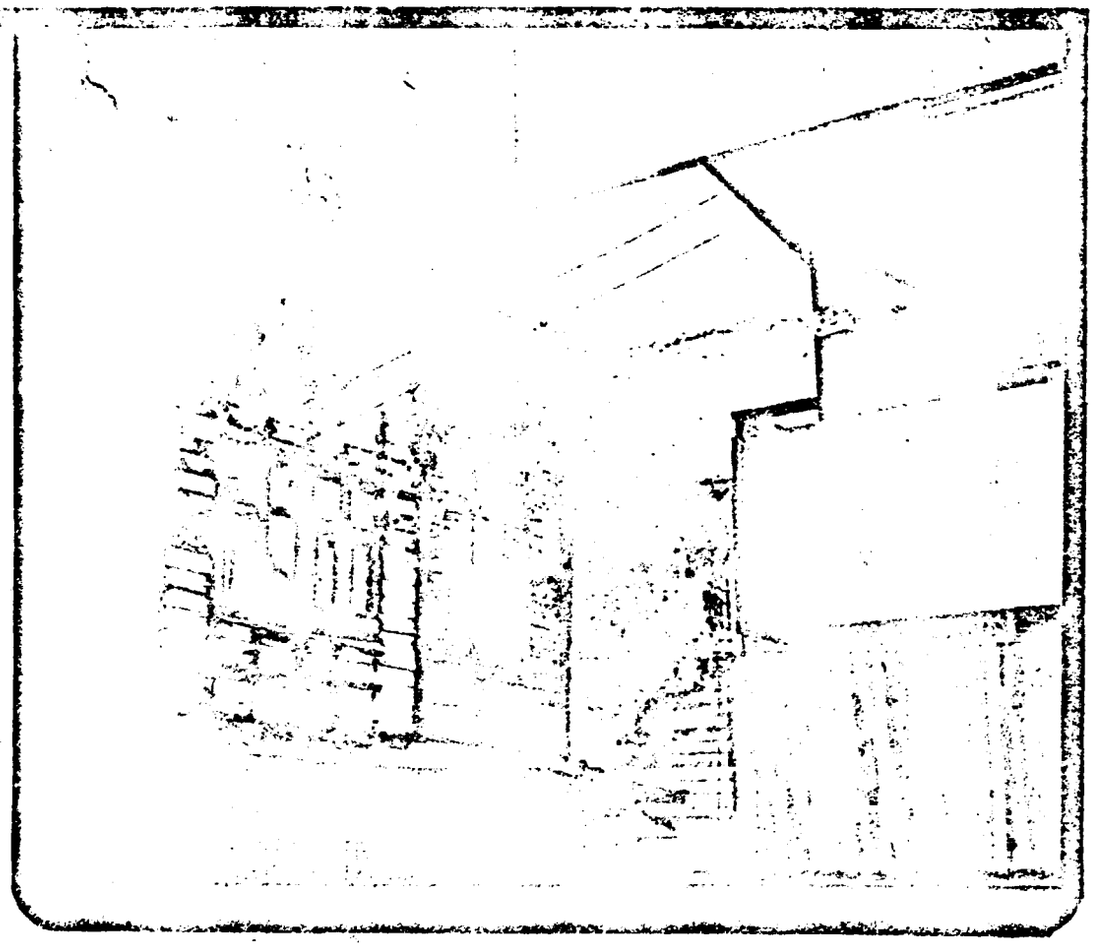
นายชายไหว แสงรุจิ ผู้อำนวยการสำนักงานมาตรฐานผลิตภัณฑ์อุตสาหกรรม ชี้แจงต่อไปว่า สำหรับมาตรฐานของปูนซิเมนต์ปอดแลนด์ประเภทที่หนึ่งนั้น หลังจากได้กำหนดเป็นมาตรฐานขึ้นแล้ว คณะกรรมการมาตรฐานผลิตภัณฑ์อุตสาหกรรมโดยอนุมัติของรัฐมนตรีว่าการกระทรวงอุตสาหกรรม ได้[illegible]

on

s

where to start. What is most important is that they should bear in mind that what they do is not only in their own interest but in everyone's interest.

"As for the people, they too should bear in mind that in the case of electrical goods especially ballasts, and wires, cheap materials do not last long, they consume more power and are always dangerous to use. A cheap ballast for instance costs only 20 baht, but it is unsafe. You could have a fire any moment and it will not last long. So economically you are loser, safety-wise you are always in danger and power-wise you lose as well," he added.



A fire victim's futile efforts to beat the flames

Standards - the key to safety

Many products have come up for standardisation, which in the long run will help eliminate numerous fires

It is illegal to sell, manufacture or import ballasts in this country without a licence from the Thai Standards Institute.

Buyers of ballasts too have been requested, that for their safety and the safety of the others they should not purchase ballasts without the TSI mark.

A Royal Decree on wiring will be out soon and the same procedure will be applicable in the case electric-wires too. It has already been standardised and one company has already begun manufacturing standardised wiring.

This company has taken out a licence for its wiring, copper-wire for generators, aluminium and enamel-wiring.

Many other products have come up for standardisation, which in the long run will help to eliminate the numerous fires which break out in the country every year.

The TSI will also set up standards shortly for electric lamps and holders —bayonet and screw-types.

Very soon the country will have standard-type storage and torch-batteries. Two manufacturers have applied for licences and tests now are being carried out. The live-tests lasts 1,000 hours. Any battery which does not last this test will not get the standards seal.

An Industry Ministry source said that every battery will have to pass this test otherwise it will not get the approval of the standardising authority.

On the domestic side standardisation work has just been finished on table fans. Plans are being drawn up to provide standards for air-conditioners, refrigerators, hotplates and power-transformers.

The large number of plugs and sockets which are on today's market will be reduced drastically soon. Probably there will be only two or three types available.

Presently the market is crowded with plugs and sockets of various makes, which are absolutely unnecessary from the point of view of the users. The electric wiring system for vehicles is also expected to be brought under the TSI seal.

Besides it is also planned to have an overall standard on safety for electrical appliances like flourescent lamp-holders, ceramic installations, capicitors and components of lighting.

The TSI is working on them at the moment. Among the other products programmed for TSI seals are, electric irons, flourescent lamps, fuses, radio receivers, switches, electric motors, loudspeakers and other components like storage batteries, rectifiers and fixed capicitors.

Of these items, only ballast and wiring will be compulsory for standardisation. Though the others are optional goods, the Ministry hopes to bring them too under certified standards as it will improve the products and at the same time better internal trade.

A TSI source deplored the general feeling among people—that foreign produced goods are always superior to locally manufactured goods.

"This is very wrong. In fact I know that in the case of our products, the local goods are better than the best produced by other countries. Unfortunately the desire to purchase something foreign is inherent in people and this could be overcome only by proving to users that our goods have been tested and proved by the authorities," he added.

APPENDIX 32

มารู้จักมาตรฐานผลิตภัณฑ์อุตสาหกรรมกันดีกว่า*

วิวัฒนาการของการมาตรฐาน

ในสมัยโบราณ เราใช้ร่างกายมนุษย์เป็นเครื่องมือ ในการวัดความยาว

แม้มือและแขนของคนจะมีขนาดแตกต่างกันไป จำเป็นจะต้องทำไม้ท่อนมาวัดขึ้นมาใช้และด้วยวิธีเช่นนี้จึงได้วิวัฒนาการมาเป็น มาตรฐานระดับท้องถิ่น มาตรฐานระดับชาติ และมาตรฐานระดับ ระหว่างประเทศ ในลำดับ

ในสมัยปัจจุบัน ระบบเมตริกได้รับการปรับปรุง ให้เหมาะสมกับสมัย เรียกกันใหม่ว่า ระบบเอสไอ (SI) ได้กลายเป็นระบบ ของหน่วยมาตรฐานที่มีความสำคัญยิ่ง

ทีนี้ลองมาดูเรื่องย้อนๆ เพื่อนำมาใช้ในการก่อสร้างมีรูปลักษณ์ ดังเข้าอยู่ในพวกที่ได้กำหนดเป็นมาตรฐานแล้ว

ปัจจุบันนี้ อิฐแดงถนนกรีตหลอกในหลายประเทศ ก็ได้ทำเป็นมาตรฐานด้วยเช่นกัน

วิธีปฏิบัติ และการจำแนกคุณภาพของผลิตภัณฑ์ประเภทผ้า เช่น ผ้าไหมไทย ซึ่งเป็นกระบวนการที่ได้กำหนดไว้เป็นอย่างดี หลายร้อยปีมาแล้ว ก็อาจจัดว่าเป็นการกำหนดมาตรฐานได้

ในการกีฬา อุปกรณ์รวมทั้งกติกาในการเล่น ก็ได้กำหนดเป็นมาตรฐาน ทั้งนี้เพื่อจะใช้ในการเล่นครั้งต่อไปได้ และเพื่อความเป็นธรรมในการตัดสิน

จุดประสงค์เดียวกันนี้ได้นำมาใช้กับกิจกรรมต่างๆ ที่มีความสำคัญยิ่งขึ้นไป เช่น การทำอุตสาหกรรมเป็นต้น

การมาตรฐาน ซึ่งหมายถึง การคัดเลือก และให้ความหมายของคำ หรือการจำกัดความนี้มิใช่เป็นเทคนิคใหม่ แต่ได้วิวัฒนาการต่อๆ มาเป็นเวลาหลายแล้ว เพื่อสนองความต้องการของสภาพปัจจุบัน

อุตสาหกรรม และมาตรฐาน

สำหรับอุตสาหกรรมสมัยใหม่นั้น การทำผลิตภัณฑ์อุตสาหกรรม จะต้องมีการวางแผนไว้อย่างดี วัตถุดิบและสภาวะ จะต้องเข้าแบบเดียวกัน เพื่อที่จะให้ได้ผลสุดท้ายที่มั่นใจว่าดีได้ ทั้งนี้หมายความว่าแต่ละบริษัท ควรจะได้ตั้งมาตรฐานของตนเอาไว้

ในการแก้ไขปัญหาหลายประการ ควรจะได้ใช้ข้อแก้ไขเพียงข้อเดียวให้ได้ผลดีได้ ฉะนั้น หลอดไฟฟ้าที่ผู้ใช้ได้ซื้อไปไม่ว่าจากบริษัทใดก็ตาม ควรจะใช้ได้อย่างเหมาะเจาะ เครื่องหมายการจราจรทั่วประเทศ ไม่ว่าทางภาคเหนือหรือใต้ ควรจะเป็นอย่างเดียวกัน ฯลฯ

มาตรฐานเป็นสิ่งจำเป็น สำหรับการพัฒนาประเทศ และจำเป็นสำหรับ ทั้งผลิตภัณฑ์จำพวกอาหาร ผลิตภัณฑ์อุตสาหกรรม ผลิตภัณฑ์ประเภทยา และผลิตภัณฑ์ที่ได้จากการเกษตร

ทั่วโลกเห็นพ้องกันว่า มาตรฐานเป็นสิ่งจำเป็น ประเทศต่างๆ

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*เรียบเรียงจากเอกสารเผยแพร่ของสำนักงานมาตรฐานผลิตภัณฑ์อุตสาหกรรม – กระทรวงอุตสาหกรรม

APPENDIX 3 k

HIGHER PROFIT FROM A RATIONAL APPROACH IN INDUSTRY
THE NEED FOR INDUSTRIAL STATESMEN

by

ROHN HOPPER *

In the January issue of this journal, Miss Krissana Esarangkul Na Ayuthya emphasized the importance of industrial standardization and highlighted its influence in trade and commerce.

In Thailand, a number of the larger companies are extremely aware of standards affecting their own production and have already adopted well-recognized international standards. There is an indication among some of them that, as soon as standards from the Thai Industrial Standards Institute are available they will adopt them. In most cases, this is likely to mean very little alteration in production processes because the policy at TISI is to reflect ISO and internationally accepted specifications as a basis for the Institute's own work.

But what of the small and medium-sized companies ?

Over the last two or three years, recognition of the concept of standards and standardization as a key to rational industrial economy has made some progress. There is an acknowledgement here and there in industry that there are virtues which have repercussions in every department of a manufacturing industry. But it would be fair to say that the principles of standardization are too often seen as ideals associated with quality control. The attitude seems to be that there is no argument against the case for standardization, but the practical difficulties are such that the changes in this direction must come slowly, if at all. There seems an intelligent acceptance of the desirability of raising quality levels through standards and an idea of how this will affect commercial conditions in Thailand and the country's industrial economy, but there is a widespread igonorance of what standards mean in terms of higher profit margins and direct gain to a company.

This is understandable to some extent because it has been found extremely difficult to quantify the full results of the effects of the application of standards within a company. The elimination of excessive stocks of steel are, for example, fairly easy to show statistically and relate to costs, but what of economies affected in packaging as a result of reduced varieties and the often considerable time saved in design specification and sales departments ?

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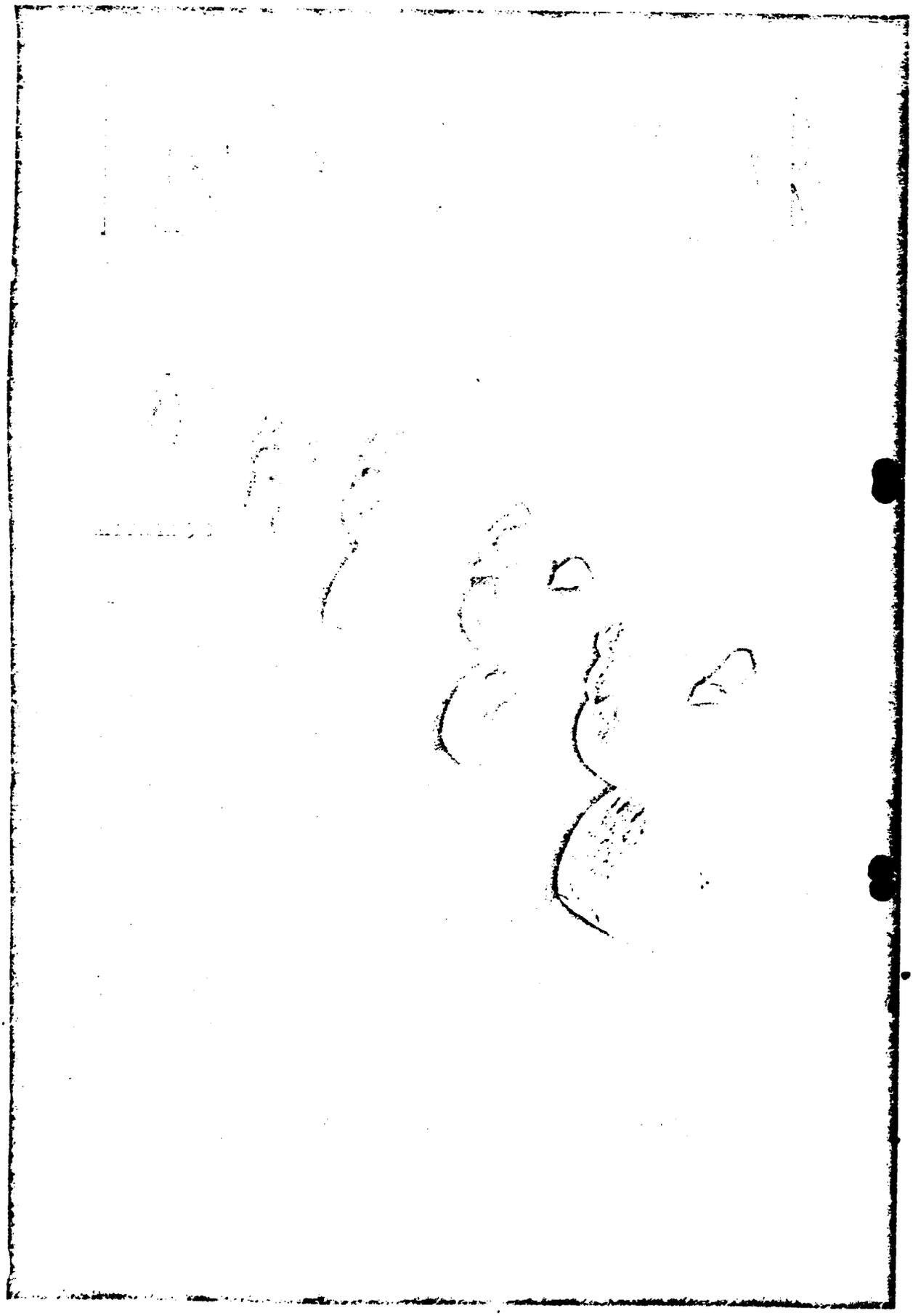
* Mr. Rohn Hopper is the UN Project Team Leader and an advisor to the Thai Industrial Standards Institute. He has had considerable experience of international standardization, particularly that concerning European countries.



Business Review

May 1978
18 Baht

Inside: Chemical Industry

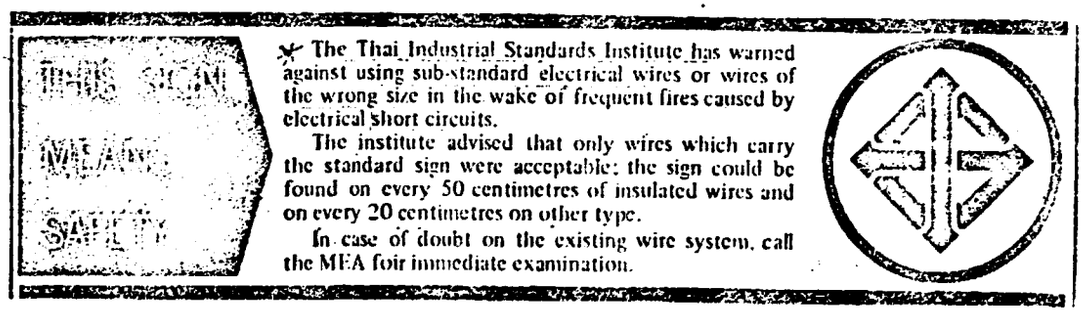
APPENDIX 5 m

Industrial Standards

APPENDIX 3 n

เดอะเนชั่นรีวิว วันจันทร์ที่ 15 พฤศจิกายน 2519

The Nation Review • 15 Nov. 1976



* The Thai Industrial Standards Institute has warned against using sub-standard electrical wires or wires of the wrong size in the wake of frequent fires caused by electrical short circuits.

The institute advised that only wires which carry the standard sign were acceptable; the sign could be found on every 50 centimetres of insulated wires and on every 20 centimetres on other type.

In case of doubt on the existing wire system, call the MEA foir immediate examination.

Canned

APPENDIX 4a

MEMORANDUM (เอกสารหมายเลข 124-15)

To: Mr. Chaiwai Sangruji
Acting Director, TISI

19 July 1976

From: Rohn Hopper
UN Project Manager

Subject: Tapioca Surveillance: The threatened loss of 4-500 million baht in foreign currency

As you know, I had indicated that I was to recommend at the Tripartite Review held on 15 July 1976 the withdrawal from the project of the component covering mobile inspection units and their allied vehicles. This was in spite of strong personal support for these vehicles over the last two years.

You asked me to delay this recommendation because the Standards Council was to review the situation on the 20th July. Accordingly, I did ask the UNDP Regional Representative and representatives of DTEC and other Government Departments to delete the 'possibly abandoned' phrase used in my semi-annual report in connection with the tapioca inspection equipment.

The reasons for this recommendation were the opinion that control over quality was ineffectual and that private conversations held with the representative of the main importing body, the Royal Dutch Grainhandlers' Committee of the Netherlands indicated that, under present conditions, Thailand's trade in this commodity was going to suffer a serious blow - certainly sufficient to undermine the whole principle of UN expenditure of something in the order of $ 360 000 on equipment.

In view of the Standards Council meeting, I will clarify the issues as far as the UNDP/UNIDO viewpoint is concerned and would ask if you would kindly bring them to the attention of the Council.

In March 15 1976, the UNIDO Project Manager of the Thai Industrial Standards Institute had a private conversation with Mr. Van der Vlist, a Director of a large food processing company in Holland who is also the official spokesman of the Royal Dutch Grainhandlers' Committee, a federation representing most of the companies accountable for some 80 per cent of the imports of Thai tapioca.

From this conversation emerged a clear warning that, unless steps were taken at the higher level, the acceptability of Thai tapioca in its major markets would be cancelled.

The reasons for this assumption are:

(a) EEC Directive

The extent of the adulteration of the Thai product is largely unknown to the EEC authorities. The committee is trying to find a fine balance between very strong protests both personally and diplomatically through the Thai Embassy, and at the same time, keeping these protests concealed from the European Economic Commission (European Common Market). It is generally recognized in the trade in Holland that if the issue is ever brought before the Commission and the quite scandalous adulteration known, the imports of Thai tapioca may be banned within weeks.

The dangers of this are all the more acute when a Common Market country has a surplus of grain, as in the case of France in 1975, which had four million tons which it wanted to sell for cattle food mix.

It is the opinion of the Royal Dutch Grainhandlers' Committee that it is a race against time. If the Thai Government cannot enforce standard quality it will not be long before the EEC discovers the extent of the adulteration and takes steps to prevent its entry into any EEC port.

(b) Competition

In 1975, an official from the Indonesian standards unit visited Thailand to gain experience in controlling cassava because that country is to increase its output for export purposes.

In April 1976, an executive official of the Australian Department of Rural Industries wrote to the Project Manager for information concerning the processing of tapioca because the Government of Queensland is to lay down large areas for the production of tapioca and to produce it competitively by large yields and machine harvesting.

The sources are confidential but it is known that approaches are shortly to be made to the Governments of Vietnam and Laos to foster tapioca production under a quality scheme.

The Grainhandlers' Committee have stated officially that as soon as they can find alternative suppliers they will have no hesitation in stopping trade with Thailand. It needs no imagination to see an imminent threat to a major Thai export commodity from these parallels, especially when each of these sources will have no difficulty in providing standard pellets.

It is the opinion of Mr. Van der Vlist that, given the present conditions of ineffectual control, the Thai tapioca industry has little more than two years of existence, with the ever-present risk that EEC authorities will step in at an earlier time and ban it totally.

The following course of action is suggested:

(c) Remedies

1. That the certificates of the Office of Commodity Standards be given some validity in Europe which they do not have at present.
2. That the Standards Council make urgent representations, via the Minister, to the Cabinet that an earlier decision to restrict TISI activities be reversed and full powers, including go-down checks, by means which will not interfere with the duties of OCS, be reinstated.
3. Concurrent with Cabinet affirmation of this that approval given for an extra-budgetary grant to TISI to employ the required number of field inspectors. And that UNDP be asked to give high priority to the first of the mobile inspection units already scheduled in the TISI Project Document.

In the opinion of the author of this document the issues are clear: if the Government decides that the present structure of control of tapioca quality and TISI's role in this is adequate, this leaves little choice but to recommend withdrawal of the major equipment component from the project document and urge the Standards Council to seek rescindment of the Royal Decree on the grounds that it would be most unwise for TISI to be associated with a possible collapse of the industry. Understandably, UNDP/UNIDO would also not wish to be part of a decline on the part of a major export which would seriously affect the country's foreign currency earnings worth 4-5000 million baht, not to speak of the effects on rural employment and dockside economies. The United Nations would wish to be assured that effective steps are being taken to withstand the strong threats outlined on these pages before sanction of the expenditure of in the order of 7 270 000 baht.

APPENDIX 41

PRELIMINARY REMARKS ON THE IMPROVEMENT OF THE QUALITY OF TAPIOCA PELLETS

bangkok 28 May 1978

by J. de Jong
R. Heijer
J. Vahl
W. Vercauteren
K. Wielenga (chairman)

I. Introduction

The expert of tapioca of Thailand will reach this year 4.5 million tons. Nearly this whole export is used in the EEC as raw material for compound feed.

The main port of entry of the EEC is Rotterdam, mainly because of very good facilities to unload large vessels (OBO's). This port handles 2.5 million tons of tapioca per year, other ports cannot take over this quantity.

During the last months the pellet quality has decreased to such an extent that dust problems arose in the harbour. A complete city suffers of the dust and the population complains to the authorities.

As a result the authorities have threatened to stop unloading of tapioca by the force of pollution law. The impact of this on the tapioca trade can easily be estimated.

As a result of an urgent call to TTTA and the Minister of Commerce, it was suggested that a group of experts should study the problem.

This group has to give such advice, that it is possible to realize quick results in improving the pellet quality, which is the direct cause of the dust problem.

The group, consisting of experts of the compound feed industry, and the bulk handling stevedore of Rotterdam has to solve this problem in close cooperation with all parties concerned.

We visited most producing areas in Thailand as well as loading and handling facilities.

Prior to the final report we will give in this report the most important short term recommendations for improvement the pellet quality.

/of

However these recommendations are applicable to the larger amount of pelletizers there are possibilities that local circumstances are so different that the recommendations are not appropriate.

/II Findings.

LIAISON OFFICERS

Motivation

The function of a liaison Officer is to persuade companies and organizations to implement standards standardization techniques and apply for certification licenses.

Method

Direct face-to-face contact with company executives, senior Government officials, Society and Association officials.

The emphasis is not upon broad propaganda approach of the remainder of the PR Department, but upon practical persuasive discussions leading directly to implementation.

Qualifications

Technically based, either a scientific or engineer officer, intelligent and with the right personality to inspire confidence and follow up action.

Must have an intimate knowledge of the economic effects of standardization and the commercial and QC benefits to be gained by certification. For this reason it would be better to train existing certification and standards personnel into these tasks. Otherwise, graduates joining as newcomers will have to have practical training with both standards and certification sections.

General description of duties

Following publication of a standard, it will be the duty of Liaison Officers to visit companies making the relevant product in order to persuade them to apply for the mark.

Once definite interest is gained, the Liason Officer will notify Certification who will follow the normal course.

Thereafter, the Liaison Officer will have no further contact with the company unless the head of certification wishes to use him to persuade licensees in the event of threatened withdrawal from the scheme or other purposes. All questions concerning complaints, dispute over test results, etc, are dealt with, as at present, by the certification officer(s) involved.

Liaison Officers will actively propose where the opportunity presents itself - particularly with smaller companies - the implementation of standardization.

Liaison officers will encourage visits of schools, consumer groups and others to TISI and Dept. of Science test labs. They will work with Visual Aid section in preparing short talk material.

To these ends, Liaison Officers will keep in almost daily contact with the heads of the standards and certification divisions.

Administrative location

These posts are technically-based persuasive positions and would logically come within PR operations, but no objection is raised if it is officially placed under Certification. In this event, Liaison Officers will have to keep in constant touch with PR Department from the point of view of obtaining persuasive material and broad economic concepts of standardization and certification.

Kannigah: Needs cleaning up in Thai version.
RH.

APPENDIX 4 d

MEMO

Date: 2 September 1973

To: Mr. Chaiwat

From: R. Hopper

Subject: Suggestions for Sector Standardization in the Building Construction Industry

Following our recent discussions, here is a suggested outline for an approach to sector standardisation in this industry which could form the basis for further discussion:

Objectives:

To bring together for discussion and decision-making representatives of the various associations in Thailand in the construction industry in order to rationalize the production and use of building materials, improve safety and quality, and effect economies throughout the whole industry.

The Means:

1. Adequately to inform both materials and product manufacturers and construction companies of the benefits of such sector standardization.

2. To encourage the organization, of joint mechanisms with active collaboration of TISI, by which the objectives can be reached.

3. To implement decisions to a projected time-scale in concert with TISI standards-making schedules or in advance of such standards.

The Methods:

1. Preliminary discussions as a sort of 'sounding board' should be raised at a meeting of the chairmen of relative TISI committees.

2. This could lead to a meeting of senior representatives of all interested parties - Government, Local Authority and Commercial associations and federations.

   The aim of this meeting would be to:

   (a) Set up a Joint Standards Advisory Board (Construction Industry), the secretariat of which is held by a senior executive of TISI (obviously to guide on the one hand and keep aligned to standards policy on the other).

(b) The JSAB would consist of technical representatives from each of the participating bodies.

(c) Each of the participant bodies should, in turn, set up a small standards panel from which a delegate is sent to the main JSAB.

(d) It is intended that the JSAB should meet every three months and the Standards Panels every month within their own organizations.

3. The objective of both the JSAB and the Standards Panels should be to examine areas in which the greatest economies can be achieved by variety reduction, e.g. screws and fasteners, steel bar, chipboard, plywood and other dimensions, bricks, electrical conduit, pre-fabricated parts, block building materials, without affecting competitiveness.

4. The policy should be to relate wherever possible to the work of TISI; but, where the maximum benefits can be seen to be accrued in any area which is not programmed by TISI, to effect non-statutory performance and dimensional standardization to international standards under the guidance of TISI.

Benefits:

The benefits arising from such sector standardization are many and extend to all activities of the industry - including the drawing board - but the main advantages are:

(a) Reduction of increasingly complex variety of materials and products and resultant cost benefits.

(b) Quality and safety will inevitably rise.

(c) It will enable manufacturers to introduce an industrialised production instead of small batch production of individual designs e.g. windows, doors, frames, partitions.

(d) It will involve the whole industry in standardization and speed-up widespread acceptance of standards and certification by many sectors of the industry.

(e) Work done outside TISI committees, but in collaboration with the Institute will be rough drafts on which technical committees can eventually work and should thus speed up production of standards since a concensus of agreement has already been reached.

(f) It will serve as a pilot scheme for similar Joint Standards Advisory Boards in other sectors of industry.

(g) In view of the expenditures in this field, it should affect the nation's economy as a whole.

cc: Mrs. Phani
Dr. Stephens
Mr. Ramm-Ericson

APPENDIX 4 •

THE NATIONAL COUNCIL OF WOMEN OF THAILAND

Under The Royal Patronage of Her Majesty The Queen

FOUNDED 1956

AFFILIATED TO THE INTERNATIONAL COUNCIL OF WOMEN IN 1960

Secretariat: Mansaengsaila Mansion, Lanluang Road, Bangkok. Thailand

Tel. 2810081, 2810206

NCWT. 117 /1978.

22 March 1978.

Mr. Rehn Hopper,
UN Project Manager,
UNDP - UNIDO Project,
Thai Industrial Standard Institute.

Dear Mr. Hopper,

Thank you very much for your letter of 20 March 1978. Your valuable advice and suggestions will be taken up by our educational Subcommittee and what are beyond my responsibility I will submit to the National Consumer Protection.

Our immediate task is to assemble appropriate information for dissimination. We have wonderful assistance for releasing the information from various sources such as the Adult Education Division of the Ministry of Education, the National Mass Media Organisation, the Public Relation Department, the Press, etc. But so far we have no one to take care of preparing the releases.

I am wondering would it be appropriate to appoint someone to take care of this matter as well as preparing the teaching packs. Or would it be better to organise a seminar or workshops to help prepare the material. I already have the offer the reproduce the material in any form as soon as we have it.

Would it be possible to see you sometime so that I can consult you on several items? Next week I will be away most of the time on two seminars but will be free on Thursday 30 between 10 - 12 am. and

/2

APPENDIX - F

Family Liaison Office
American Embassy
95 Wireless Road
Bangkok
March 3, 1978

Thai Industrial Standardization Institute
Rama VI
Bangkok 4

Dear Mr. Hopper:

To say we enjoyed your talk would be an understatement. The entire Mission has been "Hoppering" since Friday with facts and statistics. We all will be using our supplies with more awareness and much helpful advice from you. Thank you so much for your time.

We would like to congratulate you and your group on the fantastic progress you have made in such an important area. It will be our pleasure to herald TISI wherever and whenever we are able.

We are most interested in receiving the TISI Standards. Enclosed is fifteen baht for a copy of the BUYER'S GUIDE when they return from the printer. Please send it to the above address. We will forward a batch if we see the need arise.

Again, sincere thanks for taking the time from your busy projects to assuage the fears of the U. S. Mission Women's Group.

Sincerely,

Angela A. Cahn
Family Liaison Office Liaison

Have added an additional five baht to cover mailing.

APPENDIX 4 a

24 July 1978

The Examining Committee
The Budget Bureau
Look Luang Road
Bangkok

SEPARATION OF THE THAI INDUSTRIAL STANDARDS INSTITUTE AS A DEPARTMENT

Since the inception of the UNDP/UNIDO project, one of the objectives laid down in the Plan of Operation was the elevation of the Institute from a section in the Department of Science, Ministry of Industry, to that of a Department in its own right. There were various reasons for this administratively but the salient one agreed by all UNIDO expertise was the matter of authority, not only nationally, but within the regional and international commitments which a successful TISI would undoubtedly have to undertake.

This foreview has certainly been justified by the excellent growth of the Institute.

Dr. Praprit, the Director-General of the Department of Science has shown the utmost cooperation and encouragement for TISI and generosity of staff allocation: nevertheless, it is the pace of development now and in the near future which make it desirable that administrative functions be separated and also in terms of promotions and other matters affecting many members of the staff who have worked very hard.

These factors have, however, been put forward by the Acting Director and are not necessary to repeat here: what is the larger issue is the matter of persuasive authority in industry and a firm and decisive voice in ISO, the International Organisation for Standardisation, which will become increasingly important in terms of standards which may dictate foreign trade.

Thailand must be part of the harmonisation of standards now given major priority by the international and leading national standards bodies. There isn't any doubt that the voice of developing countries and especially of SE Asia receives scant attention for all the apparent goodwill. As indigenous Thai industry grows it is quite possible that it will find its new exportable products unable to enter the richer markets overseas because standards have already been set which had little regard for the opinions of the less-developed countries. Mr. Chaiwai Sangruji has recently been appointed an honorary Regional Representative of ISO and his job will to be to convey to the World Council and ISO Secretariat the wishes of this region. But human nature being what it is, with what attention are the World Council members going to listen to an 'Acting-Director' (the very term suggests that he is about to leave)? And with what attention knowing that the standards body he represents is either a section of a Department within a Ministry of a Division of another office?

ESCAP is to assist the growth of the Science and Technology Section of ASEAN and a former-UNIDO Senior Industrial Development Field Adviser has already been appointed. It is within his terms of reference to work substantially towards regional standardisation within ASEAN - a move urged by the present Project

2/...

Manager in order to give greater and stronger voice where standards are made which could, without this, inhibit trade(EEC standards are well under way and are virtually enforceable once a country has agreed, and the German Federal Standards of the late 60's are stringent documents which will already inhibit the import of many Thai electrical and mechanical engineering products of the future). As one of the most advanced standards bodies in ASEAN, TISI will have a leading role to play and will certainly have to have the status of a department.

The standing and reputation of TISI internationally has been established with the highly industrialized member countries of ISO, very frankly, upon constant and personal propaganda and preconditioning of ISO officials by the UN experts. With the possibility of a closure of UN assistance within the near future, their voice will have to be replaced by a recognisable authority placed by the Royal Thai Government - in other words, a separate Department responsible to Ministerial supervision - if TISI is to maintain its position.

Of the 81 member national standards bodies of ISO, over 75% are either Government Institutions and Departments or organizations incorporated by public law and thus of considerable national authority. The breakdown is as follows:

Government Institutions and Departments	31
Organizations incorporated by public law	16
Organizations incorporated by private law but granted official recognition by government authority	12
Private Organizations	3
Remainder - industrial associations, etc.	19

The emphasis is thus upon quite clearly definesable, separately operating national standards bodies; in the USSR, there is a Minister of Standards, reportable to the Upper Presidium. The pattern is predominant among developing countries of Departments or Institutes responsible directly to Ministerial authority and, even in Ethiopia, where the standards organization is autonomous within the Government structure.

Internally the same conviction applies. With TISI playing an increasing role in national developments and in getting the cooperation of industry the standing of the Institute will count heavily.

For these reasons, UNDP/UNIDO strongly recommends the elevation of the Thai Industrial Standards Institute to the position of Department within the Ministry of Industry.

Rohn Hopper
UN Project Manager

APPENDIX 4h

MEMO

Date: 13 December 1972

To: Mr. Chaiwai

From: R. Hopper

Subject: SI Units

It is clear that the tide of practical application of SI Units is building strongly against Thai comparative inactivity in this subject. With many of the world's underdeveloped countries already committed to SI (India, Uganda, Tanzania, Singapore, Kenya, Ceylon, etc.) and most of the industrialised countries changing to comply with specific target dates in the 70's, the period of 1975 - 80 could be quite critical for Thailand. The news that USA is virtually certain to achieve metrication by the early 80's, would appear to underline the need to start the process of change in Thailand as a national effort. Without this, the difficulties in trade and exchange of technologies between Thailand and the rest of the world could be considerable in the near future.

No-one has yet refuted a learned estimate that the world - including the USA - will be metric soon after the turn of 1980. But is it to be the world less Thailand?

I know you are aware of this and, under the Standards Council policy, are exerting an influence through TISI standards. I believe you said, too, that one or more universities were to examine in SI from next year.

But I suggest that the initiative should come from you to Professor Yos or Dr. Praprit asking for a national programme, with the change starting in sectors of national life likely to have the greatest effect in bringing about the adoption of SI units. I refer to universities, technical colleges and school, and government departments and national institutions. Something of a broad outline on the following lines could be suggested:

1974 Period of training of staffs in all universities and technical colleges, especially in the units of force, energy, etc.

1975 Teaching exclusively in SI.

1976 All technical examinations (including architecture and civil engineering) made compulsory in SI.

1977 All purchasing, specifications, documentation in Government and government-sponsored departments to be given in SI. SI only taught in schools.

The initial approach to the universities would have to propose a conference of rectors, possibly together with appropriate deans of faculties, one supposes, and this would lead to a great deal of training to prepare teachers themselves. Seminars for industrialists and technologists would be a logical follow-up, probably arranged not only through universities but by Productivity, ISI, and other relevant bodies. Whatever facilities are provided to teach industrial

people, we can, I think, assume that they will not voluntarily excite themselves over SI. Only pressure from universities and technical colleges who will be sending out to them graduates who can only think in SI, the adoption of SI by Government departments and the active cooperation of trade + business associations will bring about a serious application to the changeover.

The controversy which will arise - over the 'bar', for example - should not deter some positive national action to achieve SI metrication in industry, technology, exports and other areas vulnerable to the changing world.

All of which returns to the central proposal: that any pressure from a single Ministry department or some universities will not provoke action quickly enough to meet a majority change in the rest of the world between 1975 and 1980. And that without some positive national programme, Thailand is likely to find itself 'cut off' in many activities. Quotations and billing in export trade; meeting export market specifications; technology for setting up further Thai assembly plants; UN and other Fellowships where the selected people will have to learn a new technical language before they could even begin to study; exchange of information leading to greater technological advance - these are some of the areas in which non-alignment with the rest of the world could be embarrassing.

It is a problem which is going to need the combined resources of various Ministries - with perhaps the focal point resting on TISI (CTNSS?)

If this memo interests you and you would, later, like any help on detailed structure for such national action, I shall of course be only too happy to cooperate.

cc: Mr. Power
Mr. Nils Ramm Ericson
Dr. Stephens

APPENDIX 4.1

DISCUSSION PROPOSALS FOR A STANDARDS WEEK, CHIANG MAI UNIVERSITY

The Week would consist of three streams of activity as follows:

1. GENERAL (directed jointly towards as many members of all faculties as possible).

   * (a) The effects of standardisation on the nation's economy - industrial and commercial efficiency - the Thai Industrial Standards Institute; it organisation and activities.

   * (b) The International Standards movement - its effects on Thai trade and technology.

   (c) SI Units - the importance of national coordination - explanation of the coherent system.

   * (d) Quality Control - basic concepts and implications

2. SPECIFIC (related specifically to various teaching classes)

	Type of talk	Faculty
(a)	SI units related to specific courses	Most faculties
(b)	Standards dealing with ISO metric range of fasteners; steel pipe; hollow steel sections, etc.	Mech. Eng.
(c)	Standards dealing with ballasts, wire, copper conductors for transmission and distribution systems, etc.	Mechanical Eng. (Electrical)
(d)	Standards on structural steel, concrete	Mechanical Eng. (Civil)
(e)	Standards on pvc piping, fertilisers, MSG, edible oils and fats, glass for autos.	Chemistry
(f)	The role of standards and certification in consumer protection	Sociology

3. DISPLAYS AND LITERATURE

   * Mobile Display to be erected at central point with informative leaflets.

APPENDIX 4j

NOTE: THIS TRANSLATION IS INTERPRETIVE RATHER THAN LITERAL. IN THE EVENT OF MISUNDERSTANDING OR DISPUTE, THE THAI VERSION WILL PREVAIL.

In accordance with the Minister of Industry's letter IND 0510/3674 dated 29 August 1973, the Minister has considered it advisable, following submission by the Standards Council, to ask for Cabinet approval for a Regulation concerning purchasing and selection of suppliers by Government units, Government enterprises and Government-sponsored bodies as follows:

1. In case where an industrial standard for products has been published, Government units, Government enterprises and other Government-sponsored bodies shall specify products as in the Thai Industrial Standard specification, or may, for convenience, specify only the number of the standard (for example: "to TIS 20-2515 RB 15". This means Round Steel Bar for Reinforced concrete of 15 mm diameter with tolerances, sizes and other properties contained in this standard, and takes the place of stating all the detail, as done previously). If the Government units, Government enterprises and other Government-sponsored bodies have the need to use different qualities from those specified, they must submit each case to the Minister of Industry for consideration.

2. In cases where industrial producers hold licenses of assurances to the standard specifications referred to in 1., reference must be made in purchasing to the standard number and not to manufacturers holding the license.

3. The Thai Industrial Standards Institute, Ministry of Industry, is required to list those standards approved by the Government and also list those products which are allowed to use the certification mark and issued to Government units, Government enterprises and other Government-sponsored bodies at regular intervals.

The Cabinet discussed this matter on 2 October 1973, approved and declared it a Regulation. It comes into force by the letter to the Minister of Industry Ref. 0203/W. 96 of 4 October 1973.

APPENDIX 4k

MINUTES OF THE PUBLIC RELATIONS MEETING HELD ON 3 DECEMBER 1976

Present: Mr. Chaiwai
Mr. Suebsthiera
Miss Hannigah
Mr. Hopper

1. The meeting discussed the five-year programme for Public Relations work and sought clarification of a decision to concentrate staff and facilities in major drives each year.

It was agreed that this plan would not alter arrangements made so far but simply adapt those annual items listed to the main objectives. It was also agreed that concentration on main channels of effort would not abruptly end all other activities - that there would be special demands from internal and external activities which would call for PR action.

Although the five year plan requires successive planning in the following sequence:

1977 Industry and Commerce
1978 Universities
1979 Government units
1980 Architects
1981 Consumer

it is recognised that the more successful the major effort, the more the results would overlap into succeeding years. In other words, if pressure brought to bear on industry in 1977 brings results activities in this direction will have to go on into the following years to maintain momentum.

2. The proposals for making more impact on industry consisted of

- Discussions with all industrial associations, institutes and societies to achieve more collaboration
- Exhibitions and displays aimed at industrial audiences either at seminars or factory premises
- Publications highlighting the economic effects
- Showing of film expected to be completed in April
- Television 30-second spots
- Special efforts to back up standardization and certification, e.g. ballast distribution in the provinces, adoption of conduit standardisation
- Training of new member of the staff as a Liaison Officer, whose job will be to approach industry directly about standards and certification

- The formation of a Standards Association, a socio-professional organisation under the auspices and secretariat of TISI but independently under the control of the Associates
- Wide distribution of the Buyers' Guide, possibly through commercial sales distributors.

3. It was agreed that the draw for the winners of the balloon competition during World Standards Week should take place at the meeting of the Standards Council and a Press Release issued.

   The winners should then be invited to attend the Ministry to be presented with their cash awards, be given some information about the work of TISI and taken to the Department of Science to see tests carried out under the certification scheme. Pictures and Press releases would be issued.

4. The meeting closed with a decision to hold a meeting between PR staff and Mr. Hopper to work out details of the plans formulated.

APPENDIX 4.1

GERBHAUT

HANDELSGESELLSCHAFT M.B.H. + CO. KG.

GERBHAUT · Postfach 01 08 48 · 4330 Mülheim a. d. Ruhr

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UNDP-UNIDO Project
Thai Industriel Standerds Institute
Attn. Mr. Rohn Hopper
UNDP PO Box 618

Bangkok

Thailand

4th April, 1978 Bu/Le

Dear Mr. Hopper,

Again returned from a business trip I now want to reply to your letter of 28th February.
Enclosed please find the European standard for upholstery leather in German, English and in Thai translated by our Thai employee. I hope that there are no mistakes and that the translation are good and clear enough to be understood by your Thai staff.

Furthermore, I asked the International Union for chemistry and tannery technicians to send us the items IUF/401, 402 and 450 as well as 470 and I hope that I can pass them on to you in the next days.

The same concerns the DIN items 53329 and 53340. But this are German items which we must translate into English and Thai. I will keep you informed.

Yours faithfully,

GERBHAUT
Handelsgesellschaft

Stadtsparkasse, 4330 Mülheim a. d. Ruhr
Konto 300 002 617, BLZ 362 500 99

Commerzbank AG, 4330 Mülheim a. d. Ruhr
Konto 77 91 676, BLZ 362 400 46

S.W.I.F.T.-Code Cobade DD 362

Trinkaus & Burkhardt, 4000 Düsseldorf
Konto 2921/006, BLZ 300 308 90

Postscheckamt, 4300 Essen
Konto 555 42-433, BLZ 360 100 43

UNDP-UNIDO PROJECT
THAI INDUSTRIAL STANDARDS INSTITUTE
โครงการ ยูเอ็นดีพี – ยูนิโด
สำนักงานมาตรฐานผลิตภัณฑ์อุตสาหกรรม

APPENDIX 4 m.

DATE 29 March 1976 REFERENCE RH/ch

YOUR DATE YOUR REFERENCE

Chief
Division of Industry Housing
and Technology
ESCAP

Dear Mr. Hussain,

I read the Newsletter on Bio-Gas with considerable interest....and some dismay.

The content is fascinating but, as a document it simply perpetuates the technical Babylon suffered by the Asian countries in particular. Page 1 talks about cubic ft. and British thermal units, page 2 gives a mixture of metric and inch systems, page 3 old metric, page 6 back to Imperial, page 8 a mixture of old metric and Imperial again.

And this at a time when most countries are adopting - or have adopted - the universally agreed SI system. In Thailand all standards are, as far as possible, produced in SI units, many faculties are teaching and examining in SI and there are moves to make this national policy in teaching establishments. India has refused to accept overseas tenders in other than SI for some years; British industry has moved 75 per cent to SI, the USSR made it illegal to use other units; and most modern text-books from Europe are appearing in SI measurements.

ESCAP technology division has a central rôle in technology planning and implementation yet seems apparently not to be abreast of modern technological units of measurement. The old metric is fading, the inch system now only belongs to the USA - and that will change.

Has no policy been established for all ESCAP documents to quote SI units? And, where material is published without editing, isn't it possible to insist that information must be submitted in SI (Systeme International d'Unités)?

I do hope something can be done about this. 'Cubic ft.' and 'British thermal units', among many others, are anachronisms in modern technology.

If you think a teach-in for ESCAP technical staffs might be useful, I am sure we can arrange it from here; or any one of a number of the younger ESCAP specialists can be appointed as a reference point.

Yours sincerely,

RH.

Rohn Hopper
Project Manager

cc. Mr. Power
Mr. Aselmann
Mr. Wallden ✓

And file

APPENDIX 4 n.

MEMORANDUM

To: Mr. Chaiwai 2 February 1977

From: R. Hopper

Subject: University Degree in Standards

There is no urgency about this, but I hope you will look at the whole idea and give me advice as to how best this could be pursued when you have time.

You probably know that many standards people across the world have been mooting the idea for years that there should be a degree in standardization. As far as I know, even the USSR, with its separate Ministry, has not embarked upon this. The best advance reached so far in recognition of standardization as a distinct discipline is in the acceptance and description of the term 'standards engineer' in various learned journals and professional references.

The only reason why a degree course (as opposed to standardization and quality control within other studies e.g. industrial engineering) has not been attempted is that no-one has yet devised a suitable academic-practical course.

It would be a feather in the cap of Thailand if one university could be persuaded to offer B.S(Standards). It would also provide us with a ready-made source of well-trained recruits.

I'd welcome your opinion of the attached outline curriculum, which would have to be broken down in detail in collaboration with university principals, of course. I envisage three years of mechanical, electrical or civil engineering followed by the year proposed. Extension into chemistry would have to be worked out in later years, as would a possible Master's and Ph.D.

cc. Mrs. Phani

APPENDIX 4.0.

ศูนย์บริการส่งออก

EXPORT SERVICE CENTER TEL. 2826171

อาคารราชดำเนิน ถนนราชดำเนินกลาง กรุงเทพ ฯ 2 Mansion C., Rajadamnern Ave., Bangkok 2, Thailand
Tel. 281535, 282566, 281794, 282795, 282799 Cable : THAICENTER BANGKOK Telex : THC TH 2354

No. 0604/1581 May 25 , 1978

Mr. R. Hopper
Thai Industrial Standards Institute
Ministry of Industry
Rama VI Rd.
Bangkok, Thailand

Dear Mr. R. Hopper,

Enclosed please find a copy of letter from project coordinator of the ASEAN training programme in export promotion asking for a list of instructors in export marketing and promotion in Thailand.

Since you are one of the instructors in the previous training p e, please fill up the attached form and send it to us not later than 16 June 1978.

Thank you for your kind cooperation.

Sincerely yours,

S. Sai

(Mr.Songchai Saisavetvaree)
Chief, Training and Seminar Section

Training and Seminar Section

MEMORANDUM

To: Mr. Chaiwai Sangruji 10 August 1977

From: R. Hopper

Subject: Encouraging Faster Production of Standards

Your remarks the other evening set me thinking about difficulties in preparing standards in relationship to comment and discussion over some period that I had heard and accumulated and would like to offer the following points for consideration.

From various comments from TISI staff it seems as though some redirection of administration might be desirable to offset

1. Inadequate calibre of some committee members.
2. Cumbersome procedures in committee.
3. The inexperience of some technical secretaries.
4. Overlapping divisions of responsibility.

Suggestions

1. Inadequate Calibre of some Committee Members

Whilst they are probably rare, the existence of totally inadequate committee members appointed by their companies or representative bodies without regard to qualifications suggests some alteration in the methods of setting-up committees.

Instead of the Minister inviting representation from the organizations involved and accepting that representation without comment, the invitation could be sent with a request to submit details of the representative on a standard form, something along the following lines:

In response to the invitation of HE The Minister of Industry to be represented on TCXXX I have the honour to submit the details of the person chosen to represent .....

.....

Name .....

Business Address .....

.....

..... Tel: .....

Position in company/organization .....

Broad duties .....

Academic Qualifications .....

Name of Proposer .....

Signature .....

Position in Company/Organization .....

From this form it will be apparent whether the person chosen has any understanding or knowledge of the subject.

It it is unsatisfactory, the company/organization should be requested to submit another, more suitably-qualified person. In the case of manufacturers, refusal to do this would be sufficient reason to request another company to provide a representative. Energetic and qualified personnel are not always exclusively employed by the larger companies.

The danger of accepting junior and otherwise inadequate members is probably already recognized by TISI - that the opinions of TISI's administration by the other members must be lowered when they have to work with people who know nothing of the issues and it also lowers the authority of TISI as the national standards body in the eyes of those organizations who send poor representatives.

2. Cumbersome Procedures in Committee

It may be valid at this time to examine whether the committee structure and operation is suitable for Thailand. It is true that the present arrangement is the one adopted by most national standards bodies, but there exists a distinction between the technical committees of highly-developed foreign organizations and those of ours in that, by and large, most of the representatives are truly specialised in the subject in one way or another; indeed industry makes sure that they are. As indicated by various technical secretaries, it is not always certain that this is the case in TISI. Which means in practice that those unfamiliar with the standard specification may sometimes slow down the process by wanting to be clear on a number of points they don't understand but which are obvious to the specialists. And, in any case, a large committee comprised of technical specialists, commercial interests with rudimentary knowledge of technicalities and those who know little of either is bound to be cumbersome and slow.

For these reasons, I propose that TISI should revise its structure along the lines of the international organizations - IEC, ISO, CEN, CENEL, etc. This means the appointment of a main generic technical committee which will meet to appoint from its among its members a balanced Sub-Committee which is highly knowledgeable on the subject. The task of the sub-committee would be to produce the standard draft. The role of the main committee would be to discuss and approve this draft. The sub-committee should feel free to ask TISI to call a full meeting of the main committee if it is in doubt about any issue or is not in agreement on specification detail.

This would effectively leave the technical detail of the standard in the hands of those most capable of handling it and place commercial or 'political' issues in the hands of the main committee. This method is likely to produce faster working with a small number and reduce paperwork commitments of the technical secretaries. The objective of democratic representation of opinion would not be affected since the main committee would be the checking body.

I realise that the Act would have to be changed so that a Sub-Committee could draw its honorarium, but, in the meantime, appointing a quorum which is slightly larger than that required would solve the problem until the Act is changed.

There has been some comment about the illogicality of having separate test method committees, sometimes comprised of members who are not even represented on the technical committee producing the standard. On the face of it, this seems to be irrational and time-consuming especially when the test method committee may disagree entirely with the standard committee. The obvious assumption is that, if the technical committee is sufficiently qualified and well-balanced, the preparation of harmonized test methods should remain in its hands - and even more so if this is an active and knowledgeable Sub-Committee.

3. <u>The Inexperience of Some Technical Committees Secretaries</u>

This is inevitable in an expanding organization and in the light of the Government's financial incapability of attracting experienced industrial personnel. The only answer here is a sharp emphasis on short-term training within the UN schedule and any bi-lateral scheme offered by DTEC. This should include very short visits for inexperienced staff as we envisaged in an earlier budget and we should consider reinstating this for 1979.

In this respect, we ought to take up the New Zealand offer for an early start in 1978, but, again, this should be for inexperienced staff and not those who have already taken courses.

It may be worth examining whether it is possible for the senior graduates to have more influence on the less experienced and thus widen the funnel.

4. <u>Overlapping Divisions of Responsibility</u>

Some unnecessary delays have occurred I believe through committees spending time over disagreement on editing, terminologies and precise translation of technical terms. It is possible that definite guidance could be given committee chairmen that editing is the responsibility of appropriate departments of TISI and the finally presented draft should be examined by the technical secretary purely for factual errors. The approved typed draft should be the final matter for discussion by the committee, the rest of the procedures being taken up by TISI machinery.

There have also been occasions when a committee has spent virtually a whole meeting on trying to establish a precise translation of a foreign word or phrase contained in the international or foreign standard used as a basis for TISI work. It is probably wiser and less wasteful in time to hand this to the technical secretary to provide a solution to the TC at the next meeting. There are enough resources within the Institute to be able to provide an answer, either within the technical staff or from Documentation. In other words, such matters should be regarded as a function of the technical secretary and TISI without occupying the time of the committee which could, until this was resolved, be working on other sections of the standard (there would be exceptions to this, of course, but it is sound as a general rule).

I hope these comments have helped. In view of the concern of Mrs. Phani and yourself about the slowness of some committees, I do not think we should hesitate to revise the committee system if it means an improvement.