NBSIR 75-719

A Compliance Testing System for NILECJ

Robert Mills

Law Enforcement Standards Laboratory
Center for Consumer Product Technology
Institute for Applied Technology
National Bureau of Standards
Washington, D. C. 20234

February 1976

Final

Prepared for

National Institute of Law Enforcement and Criminal Justice
Law Enforcement Assistance Administration
U.S. Department of Justice
Washington, D. C. 20531

NBSIR 75-719

A COMPLIANCE TESTING SYSTEM FOR NILECJ

Robert Mills

Law Enforcement Standards Laboratory
Center for Consumer Product Technology
Institute for Applied Technology
National Bureau of Standards
Washington, D. C. 20234

February 1976

Final

Prepared for
National Institute of Law Enforcement and Criminal Justice
Law Enforcement Assistance Administration
U.S. Department of Justice
Washington, D. C. 20531

U.S. DEPARTMENT OF COMMERCE, Elliot L. Richardson, ***Secretary***
James A. Baker, III, ***Under Secretary***
Dr. Betsy Ancker-Johnson, ***Assistant Secretary for Science and Technology***

NATIONAL BUREAU OF STANDARDS, Ernest Ambler, ***Acting Director***

ACKNOWLEDGMENTS

The author is a program manager in the Law Enforcement Standards Laboratory (LESL) of the National Bureau of Standards. This report was prepared under the direction of Jacob J. Diamond, Chief of LESL. It was sponsored by the Advanced Technology Division of the LEAA National Institute of Law Enforcement and Criminal Justice, Lester D. Shubin, Program Manager for Standards.

CONTENTS

ABSTRACT

In order to assure that NILECJ equipment standards have the impact intended, a Compliance Testing and Laboratory Accreditation program is needed to establish which items available on the market do, in fact, meet the requirements of the standards. This report contains recommendations for such a NILECJ program. In brief, the proposed program would (a) result in a body of qualification and acceptance test data, (b) establish a list of testing laboratories competent to perform these tests, and (c) set up a "compliance information system" for the dissemination of this information to officials in the criminal justice system.

Key words: Acceptance testing; compliance testing; laboratory evaluation; performance testing; qualified products lists; testing.

A Compliance Testing System for NILECJ

INTRODUCTION

The National Institute of Law Enforcement and Criminal Justice (NILECJ) of the Department of Justice is assisting law enforcement agencies in the procurement and effective use of the best equipment that present technology can offer. One means to that end is the development of performance standards for law enforcement equipment, a task assigned to the Law Enforcement Standards Laboratory (LESL) of the National Bureau of Standards. These performance standards can be referenced in purchase documents; they serve as objective descriptions of what the user wants and what the supplier agrees to give him. They can also help guide manufacturers in the design of equipment of high utility.

The development and dissemination of standards, however, are only steps in the procurement process. The ultimate benefits to the law enforcement community, to the public, and to the manufacturers cannot be realized until a means is established to ascertain which hardware available on the market does, in fact, meet the requirements of the standards.

Lester C. Thurow, professor of economics and management at the Massachusetts Institute of Technology, has written of this need in a private communication.

"Without testing and inspection, there is the classic economic problem of bad money driving out good. To obtain an order, a company must submit the lowest bid. One of the easiest ways to submit a lower bid is to lower the quality of the equipment being sold. The initial quality cuts are small, but competitive pressures force an escalation of this process until the equipment no longer provides the services desired.

"With simple goods this problem can be avoided, since the customer can quickly determine that he is being sold a good without the desired performance characteristic. With complicated equipment, there is no simple or easy way to determine whether the good is up to standards. To know whether the equipment is good or bad requires technical testing, both initially to insure that equipment can meet performance standards and subsequently to insure that it does.

"This testing is in the long-run interest of manufacturers (although it may not be in the interest of any particular manufacturer) since it allows high quality equipment manufacturers to stay in business. Without testing, they will be forced to lower quality standards by the competitive pressures of the market place or go out of business."

This report makes recommendations to NILECJ for the establishment of a compliance testing system for equipment used by the criminal justice system. This "Compliance Testing System" would (a) make available to law enforcement officials impartial information concerning compliance with NILECJ standards, and (b) enable manufacturers to avoid the time and expense of convincing individually hundreds of police departments that their products are capable of satisfying minimum performance requirements.

Compliance* Testing Mechanisms

There are several alternatives, not necessarily exclusive of one another, for ascertaining the compliance of law enforcement equipment with the NILECJ standards. First, some larger police departments have test and evaluation divisions responsible for determining the utility of new products. However, most departments do not have in-house capabilities for performing compliance tests in accordance with the NILECJ standards.

Secondly, inspectors can monitor the manufacturing process at the plant. This "on-site inspection" can be used to monitor quality control. It is being used for some food inspection and military procurement programs, but it is expensive and is not considered to be a viable alternative for NILECJ.

Thirdly, manufacturers can be asked to certify that their equipment meets the requirements of the appropriate standard, and be held legally accountable for their certification. However, reliance solely on manufacturer certification generally is not satisfactory. Since transgressions must be redressed after the fact, usually by time-consuming court action, there is little protection against companies that have no reputation to uphold and are able to go out of business after a short period of operation. Even for more reputable companies, the pressure of realizing a profit too frequently tempts manufacturers into compromises of product quality if

---

*These and other terms relating to product standards, product testing and laboratory accreditation are defined in the glossary on pages 13 to 18.

routine independent checks are not made. See, for example, "The Aircraft Brake Scandal," in the April 1972 issue of Harper Magazine, which relates a tale of falsified laboratory test results and fraudulent claims by a manufacturer having trouble fulfilling a government contract. Manufacturers may of course do their own product testing. This certainly should be encouraged, as long as the results are intended primarily for the manufacturer's own use.

Another approach is to have the product manufacturer certify and an independent testing laboratory verify. In this way, the manufacturer retains the legal responsibility for the quality of his product. Once the product is found by the testing laboratory to be in compliance with the appropriate standard, the name of both the product and its manufacturer can be placed on a qualified products list (QPL). As long as his product remains on the published QPL, the manufacturer is obligated to make that product in compliance with the product standard.

Two types of product compliance testing are of interest. Product qualification tests are performed in advance of and independent of any specific procurement action, for the purpose of establishing a QPL. The fact that a product has been tested and placed on a QPL means that the particular model meets the requirements of the standard. The inclusion of a product on a QPL does not, however, guarantee the acceptability of every individual lot or shipment. This assurance can be obtained from product acceptance tests, which are performed to determine the acceptability of delivered items which have been purchased under a contract requiring compliance with the appropriate standard.

The Compliance Testing System must be based on technical competence and integrity if it is to enjoy any significant degree of acceptance. For example, the testing laboratories must be independent laboratories. Independent laboratories can be commercial testing laboratories (there are several thousand in the United States), non-profit institution laboratories, government laboratories, or university laboratories. By definition, an independent laboratory cannot be connected with the manufacturer of the product, cannot be involved in the promotion of the product, and cannot have an inordinate (for purposes considered here, greater than 10 percent) amount of its income derived from a company which manufactures a product

of the type under test. A corporate or captive laboratory which is controlled by a manufacturer or distributor is obviously not an unbiased, independent laboratory, even though it may be a very competent one; however, the laboratory accreditation program described later can benefit captive as well as independent laboratories.

Other safeguards could readily be incorporated into the program. Renewal qualification tests will be required, to assure that changes in product design have not been made, either intentionally or unintentionally. When possible, manufacturers should be required to select different testing laboratories for the original and the renewal qualification testing of a product. In addition, the results of any acceptance tests of a given product could be compared for consistency with the qualification test results. Products for which comparatively large amounts of acceptance test results were available should require less frequent renewal testing to stay on the QPL than those products for which few acceptance test data were available.

The samples tested in qualification tests must be representative of those produced in production runs. If sales volume is large enough, this is best accomplished by having the samples purchased anonymously through a regular retail supplier. However, purchasing the test samples may, in some cases, add significantly to the cost of the compliance testing. There may also be some legal obligation to purchase and test all available brands. This could lead to difficulties; conceivably, a manufacturer could insist that NILECJ purchase a product which obviously would not meet the requirements of the standard, and he could demand an exorbitant price.

An alternative is to invite all manufacturers of law enforcement equipment for which NILECJ standards have been promulgated to submit their products for qualification testing. Manufacturers would be required to certify that the submitted products were representative of their production in all significant respects. Significant differences between qualification and acceptance test results would then indicate a violation of that product's certification or trouble with one of the testing laboratories, either of which would require remedial action.

The methods used for qualification and acceptance testing must be identical. However, economic considerations may dictate that acceptance testing be less thorough than qualification testing. In that case, the methods for acceptance testing might consist of a subset of the test methods for qualification testing. LESL could recommend the appropriate subset. More than one subset may have to be available to accommodate different local economic circumstances. LESL should make certain that the purchaser is properly advised by the qualified testing laboratory of the reduced quality assurance to be expected for a given subset of test methods. Advice should also be available concerning appropriate sampling plans.

Copies of all test reports from participating laboratories should be submitted to the compliance program administrators, whether the items under test pass or fail. This procedure will preclude reporting only successful test results, and will prevent a manufacturer from repeatedly having an unacceptable product tested until, by the laws of probability, it is eventually passed. To guard against incomplete information being sent, the complete laboratory job file should be open to inspection by the program administrators.

The possibility of authorizing product manufacturers to affix a NILECJ label or logo to products listed on a QPL has been considered. Use of such a logo would have value in bringing the NILECJ Equipment Program to the attention of law enforcement officials. However, the use of a logo does have the following disadvantages:

(a) A product may be tested and found acceptable for one application, but not another. For example, a particular police helmet may give satisfactory protection as a motorcycle crash helmet, but not as a ballistic helmet. Specific product certification cannot be communicated with a logo as it can be with a QPL. A user who sees the logo but does not check the QPL can develop an unjustified confidence in the utility of his equipment. Careful labeling could minimize this problem.

(b) Logos are usually intended for equipment that has passed qualification tests. A logo may, however, lead a user to assume that an item has passed both qualification and

acceptance tests. That is, he may improperly assume that the logo guarantees the quality of the shipment he receives.

(c) Comparatively speaking, potential enforcement problems for QPL's should be smaller than for logos. That is, entries on a QPL would clearly be under the control of NILECJ, but there may be difficulties in forcing a manufacturer to stop affixing the logo to products which no longer comply with the standard, or in neutralizing the logo on those already in distribution. There is, of course, the similar problem involved in assuring that a procurement decision is based on a current, not an obsolete, QPL.

Laboratory Evaluation and Accreditation

Testing laboratories other than NBS will have to be involved with compliance testing. Accreditation of these testing laboratories will be an important part of the Compliance Testing System. Only accredited laboratories should be eligible for selection to perform qualification testing, and only accredited laboratories should be recommended to police officials who are selecting a laboratory for acceptance testing.

Laboratory accreditation should be distinguished from laboratory certification. Certification implies a warranty or guarantee of a laboratory's performance. There is no valid approach to examining a laboratory so that guarantees of future performance can be issued. Accreditation resulting from laboratory evaluation does not ensure the quality of future output. Rather, it indicates that there is no apparent reason why the laboratory cannot perform a function adequately. The only realistic goal of laboratory evaluation is accreditation, not certification. However, laboratory performance can be monitored after the initial accreditation (a) by comparing data sent to the Compliance Information System from different laboratories testing the same product, (b) via occasional unannounced examinations of accredited laboratories and (c) by requiring that accreditation be renewed every few years. Laboratory accreditation can be revoked in cases of misrepresentation of information or unsatisfactory performance.

Accreditation would be granted for those testing functions of laboratories that meet pre-stated criteria. These criteria will, for the most part, relate to the methods of test in

specific NILECJ standards, although some criteria such as managerial independence from manufacturers and vendors and records keeping will have general applicability. The Law Enforcement Standards Laboratory at the National Bureau of Standards is currently developing laboratory evaluation criteria for the first few performance standards promulgated by NILECJ.

Laboratory accreditation criteria and evaluations can be classified as either performance-based or non-performance-based. Non-performance-based criteria can relate, for example, to the cleanliness of laboratory equipment or facilities, or to the academic backgrounds of personnel. Performance-based criteria, on the other hand, relate to the actual results of tests on controlled samples by the laboratory under examination.

The objective of non-performance-based evaluation is to predict performance. Since performance-based evaluations are inherently more direct, they will be used to the greatest extent practical.

Laboratory accreditation criteria can also be classified as either technical or nontechnical. Technical evaluations of testing laboratories are made to determine if they have the capacity to carry out properly the tests specified in the product performance standards. Nontechnical evaluations which are also appropriate and have been mentioned earlier are managerial independence from manufacturers and vendors, and records keeping. Another nontechnical criterion which may be relevant concerns equal employment opportunity (EEO) at the testing laboratories. The relevance of this criterion is a policy question best answered by NILECJ.

The checking of laboratories to determine whether the pre-stated criteria are satisfied can be considered to be a three-step process--examination and evaluation by LESL followed, if merited, by NILECJ accreditation. Laboratory examinations provide the information upon which laboratory evaluations are made, which in turn serve as the basis for LESL's recommendation to NILECJ for laboratory accreditation. On-site examinations at the laboratories are expensive in terms of required travel and manpower. To the extent practical, examinations will involve the laboratories in question sending information to LESL for evaluation. However, a few on-site

examinations will have to be made, some on an unannounced basis, to check the information furnished by the laboratories.

Laboratories will be evaluated and accredited on a standard-by-standard basis. Isolation of the specific causes of problems being experienced by laboratories failing to meet certain performance criteria will be outside the scope of this program unless a problem is widespread among testing laboratories involved with the Compliance Testing System, or the basis for the problem can be established with very minor effort.

Compliance Information System

A "Compliance Information System" is needed as part of the Compliance Testing System for the purpose of eliciting information concerning the performance of devices listed on the NILLCJ qualified products lists. Reports will be tabulated from laboratories performing qualification and/or acceptance testing. Cooperation in supplying this information will be a condition for being an accredited laboratory. In addition, field performance data will be solicited from law enforcement agencies using the equipment covered by NILECJ standards.

The Compliance Information System will help to assure that (a) equipment listed on a NILLCJ qualified products list continues to perform in accordance with the requirements of the NILECJ standard, (b) experience in field use does not indicate an excessive breakdown rate or the existence of maintenance problems, (c) any need for revision of the standard is recognized, and (d) problems in the performance of any of the testing laboratories are recognized. When tabulated information indicates the need, a special investigation will be made. If, for example, it is determined that a manufacturer has a quality control problem, continued listing of his product on the QPL will be reviewed. If an excessive field breakdown or maintenance problem is found, either the product will be removed from the QPL or the applicable standard will be revised, as appropriate. If a problem in testing laboratory performance is found, the continued accreditation of that laboratory will be reviewed.

The National Highway Traffic Safety Administration (NHTSA), Department of Transportation, announced in the November 5, 1973, issue of the Federal Register, page 30159, the

establishment of a program having a Standards Compliance Information System and many other features similar to those recommended for the NILECJ Compliance Testing System. The NHTSA Compliance Testing System was planned with NBS/LESL consultation; the breath alcohol testing equipment performance standards for which it was established are being developed for NHTSA by LESL. It should be noted that only equipment on the NHTSA qualified products list may be purchased with NHTSA funds -- a policy which NILECJ may also wish to adopt.

Role and Qualifications of NBS

The large amount of both product qualification and acceptance testing necessitates the involvement of testing laboratories other than NBS. NBS/LESL's role is in the development of the standards, in the arbitration--if needed--of any disputes which may arise concerning compliance test results, and in the management of the compliance testing system, but not in compliance testing per se. All of these activities will of course be under the direction of NILECJ.

Each QPL will be a NILECJ document. Its content will be based largely on the information obtained from the Compliance Testing System. Likewise, the official list of accredited laboratories will be a NILECJ document, although the accreditations will be based on evaluations performed by NBS/LESL.

NBS has had and continues to have considerable involvement with laboratory evaluations. Current NBS projects involving laboratory evaluation relate to the testing of cement and concrete, paper and paper boxes, rubber, color and appearance, mobile homes, mass standards, state metrology laboratories, clinical chemistry and toxicology. A special Laboratory Performance Technology Section has been established at NBS. NBS management, together with other officials in the U.S. Department of Commerce, are planning with industry and professional associations the establishment of a national system for laboratory evaluation; several public hearings have been held on the subject at NBS.

Although NBS has almost no regulatory authority, it has established a reputation of being a fair and careful arbitrator in disputes involving measurement. Members of the NBS staff have been among the vanguard in the development of improved techniques for laboratory evaluation. An Association of Official Analytical Chemists publication, "Statistical Techniques for Collaborative Tests," was written by an NBS statistician, Dr. W. J. Youden. Chapter three of NBS Special Publication 300 titled "Interlaboratory Tests" is a collection of papers on the subject by NBS authors. The editor of the "ASTM Bulletin" included the following quotation in his introductory remarks to a paper about interlaboratory testing by two NBS scientists: "This paper gives a very complete treatment of the problem which almost every ASTM committee is constantly trying to solve . . . (it is) a more comprehensive approach to the problem of designing and interpreting interlaboratory studies than has appeared in the literature up to now." (ASTM Bulletin, July 1959, page 53).

During the development of performance standards, LESL must do a certain amount of product testing to determine current performance levels. This work is rarely sufficient to negate the need for qualification tests after promulgation of the standard, but pertinent test results obtained during the development of the standard should certainly be utilized by the Compliance Testing System. Conversely, the compliance test results will serve as early indicators that particular NILECJ standards should be considered for revision. Thus, close liaison between the standards development program and the Compliance Testing Program will be essential. This two-way flow of information will be enhanced by both programs being within LESL.

Who Pays?

Who should pay the costs of a national compliance testing system for law enforcement equipment? Let us consider separately each of the component parts of a complete, comprehensive system.

Laboratory Evaluation and Accreditation

In and of itself, a laboratory evaluation and accreditation program is of no value. Such a program is, however, central to any compliance testing system, no matter how simple or complex,

large or small. None of the other possible components of such a system can function without the availability of testing laboratories whose test results are accepted by both the buyer and seller. These considerations underly the question of who should pay for laboratory evaluation and accreditation.

In a mature, functioning compliance testing system, we recommend that most, if not all, of the full pro-rata cost of evaluating and accrediting a testing laboratory be borne by that laboratory itself. In a competitive environment, this would assure that accreditation would be sought by only those testing laboratories to whom it was financially attractive. Clearly, this would be the most cost-effective and equitable arrangement.

In starting up such a program, however, when it is not clear how much testing business will be generated, and who the customers will be, it would be unreasonable and unrealistic to expect the testing laboratories to bear the costs of their evaluation and accreditation, plus the program start-up costs. It is recommended that the sponsor of the program, NILECJ, pay the major portion or all of these costs, in order to get the program under way and to attract as many testing laboratories as possible into the program. It is further recommended that the proportion of the costs borne by the testing laboratories themselves be increased gradually, but as rapidly as the circumstances warrant, until the program is fully self-supporting, or nearly so. It must be realized that, for each equipment item in the program, at least one testing laboratory must obtain enough business to justify its cost of obtaining and maintaining accreditation. To assure this, some continuing NILECJ subsidy may be required, in particular cases.

Manufacturer Certification Based on Accredited Laboratory Testing

Under this system option, once one or more testing laboratories are accredited to test an equipment item in accordance with the appropriate NILECJ standard, any and all manufacturers of that item would be free to contract individually with the accredited testing laboratory of their choice, at a fee agreed to by them, to have their products tested for compliance. The manufacturers could use these test results in their advertising and/or marketing, could use them as a basis for certifying that their products complied with the

appropriate standard, and could therefore bid on procurement contracts that required compliance with the NILECJ standard.

While some rationale exists for NILECJ financial support of this program option, no simple means is envisioned for doing so. It is therefore recommended that payment for services under this program be fully borne by the individual manufacturer or distributor. The operation of this system would involve little or no Government participation; it would probably be little used if Qualified Products Lists were established (see below).

Routine Acceptance Testing

One of the options available to a purchaser, after he has received a shipment of material claimed to comply with the requirements of a NILECJ standard, is to verify its compliance by having the shipment tested by a qualified testing laboratory. Where such acceptance testing is desired, it should be performed on a fee-for-service basis, entirely paid for by the purchaser and/or by the supplier, in accordance with the requirement of their purchase agreement.

It is recommended that the States and local jurisdictions be authorized and encouraged, but not required, to pay for such acceptance tests with LEAA block-grant or other LEAA funds allocated to them. This authorization should govern whether or not the equipment itself is paid for with LEAA funds.

Qualified Products Lists

The existence of an official NILECJ Qualified Products List for a particular equipment item would make it very easy for a purchaser to acquire NILECJ-Standard equipment. In some cases, such as when the cost of testing was large compared to the cost of the shipment, reference to a QPL would be perhaps the only way in which an objective, cost-effective purchase could be made.

The establishment and maintenance of a QPL for each appropriate equipment item is thus a major tool whereby NILECJ could assure the quality of equipment procured by State and local agencies. Similarly, the listing of its product on a NILECJ QPL could be of substantial economic benefit to an equipment manufacturer. Joint funding of a QPL by NILECJ and the interested manufacturers is therefore warranted, and is recommended.

A QPL program should be run by LEAA/NILECJ itself, or on its behalf by another public agency.

GLOSSARY

This Glossary is intended to assist the reader understand the terminology by comparing and contrasting related terms. The entries are grouped into three sections relating to the subject areas of product standards, product evaluation and laboratory accreditation. Related entries within each section are also grouped rather than listed alphabetically. However, an alphabetical listing of entries is more convenient for locating the definition of a specific term. Hence, a separate Index of Terms is included at the back of the Glossary.

Many of the definitions in this Glossary are based on definitions in an unpublished document drafted earlier at NBS. Some terms in that document are included in this glossary even though they are not used in this report concerning compliance testing. Terms such as, "mandatory standard", "quasi-mandatory standard", and "consensus standard" are of general interest to people working with standards and thus were included in this Glossary.

1. PRODUCT STANDARDS

1.1 STANDARD

A prescribed set of conditions or requirements--the physical, functional, performance, or conformance characteristic thereof--to be satisfied by a product. Standards included under this definition are called product standards or engineering standards.

1.1.1 VOLUNTARY STANDARD

A standard with which there is no obligation to comply. A voluntary standard may become a quasi-mandatory standard, mandatory standard, code, regulation, or rule as a result of utilization or adoption by a regulatory authority.

1.1.2 QUASI-MANDATORY STANDARD

A standard with which there is no legal obligation to comply, but which is required in practice or under certain conditions, such as a requirement of a marketplace or compatibility with other products.

1.1.3 MANDATORY STANDARD

A standard with which there is an obligation to comply by virtue of an action by government or by an authority endowed with the necessary legal power; called a code, regulation, or rule.

1.1.4 CONSENSUS STANDARD

A standard for which there is general agreement among those affected by the standard that the prescribed set of conditions and requirements are technically sound and meet the needs prevailing at that time.

1.1.5 PERFORMANCE STANDARD

A standard which prescribes the acceptable functional or operational characteristics of a material, product or system in accordance with the use to which the performance would apply; includes or references the test methods by which these characteristics are measured.

1.1.6 DESIGN STANDARD

A standard which describes the required physical or dimensional characteristics of a product or system and, in some cases, its manufacture, construction or fabrication.

1.1.7 NILECJ STANDARD

A voluntary standard developed by the Law Enforcement Standards Laboratory at the National Bureau of Standards and promulgated by the National Institute of Law Enforcement and Criminal Justice (NILECJ), U.S. Department of Justice, for equipment used in law enforcement, crime deterrence, or criminal justice activities. NILECJ Standards are technical documents consisting of performance and other requirements together with a description of test methods.

1.2 TEST METHOD

A description of the test procedures, equipment and methodology for testing a material or product in determining its conformance to a standard or other set of conditions and requirements.

1.3 REFERENCE MATERIAL

A material, substance, or device whose intrinsic properties are used for physical comparison (e.g., an NBS Standard Reference Material (SRM) which is a well characterized and certified material produced in quantity and used to develop reference methods of analysis and tests and to calibrate measurement systems), sometimes referred to as a standard.

2. PRODUCT EVALUATION

2.1 PRODUCT COMPLIANCE TEST

A test to determinate the design or performance characteristics of products for the purpose of establishing their conformance with the requirements of applicable standards, codes or other requirements.

2.1.1 PRODUCT ACCEPTANCE TEST

A compliance test to determine the acceptability of delivered items which have been purchased under a contract requiring compliance with the appropriate standard, code, or other requirement.

2.1.2 PRODUCT QUALIFICATION TEST

A compliance test performed in advance of and independent of any specific procurement action, for the purpose of establishing a qualified products list or authorizing the use of a logo.

2.2 QUALIFIED PRODUCTS LIST (QPL)

A list of products, and their manufacturer, which have been tested and found to comply with the requirements of applicable standards, codes or other requirements.

2.3 LOGO

A symbol, label, hallmark or statement authorized by a certification agency for affixing to a product indicating that the product is in conformance with specified provisions of the applicable standard, code or other requirement.

3. LABORATORY ACCREDITATION

3.1 ACCREDITATION

The act of giving official recognition of specific qualifications. Accreditation of a laboratory indicates that there is no apparent reason why the laboratory cannot perform a function adequately. It does not guarantee the quality of future performance.

3.2 CERTIFICATION

The act of giving an official warranty or guarantee of performance. There is no valid approach to examining a laboratory for laboratory certification because guarantees of future performance cannot be made.

3.3 TESTING LABORATORY

A place equipped and staffed to conduct product tests including product compliance tests.

3.3.1 INDEPENDENT TESTING LABORATORY

A testing laboratory which has no organizational tie or financial interest in a manufacturer, vendor, or the promotion of a specific product on which tests are performed. It has sufficient breath of activity so that the loss or award of a specific contract for test services would not be a substantive factor in the financial well-being of the laboratory. It may offer test services under contract or on a fee basis, and may be a profit or non-profit organization.

3.3.2 CORPORATE OR CAPTIVE TESTING LABORATORY

A testing laboratory organizationally affiliated with a product manufacturer or vendor.

3.4 LABORATORY EXAMINATION

The process of obtaining information in order to judge the laboratory's capability for performing specified product tests, e.g., product compliance tests. Laboratory examinations provide information upon which laboratory evaluations are made. Laboratory examinations can involve on-site and remote activities; the remote activities involve the laboratories sending information to the evaluation agency.

3.5 LABORATORY EVALUATION

The decision making process, using information from laboratory examinations, upon which laboratory accreditation--or a recommendation for laboratory accreditation--is based.

3.5.1 LABORATORY EVALUATION CRITERIA

Statements prescribing the organizational and technical resources, the equipment and facilities, the operational procedures, and the minimum technical performance levels required of a testing laboratory for accreditation.

3.6 COLLABORATIVE REFERENCE TESTING

A program or system in which a uniform material or product, properly randomized or of controlled characteristics, is distributed to participating laboratories. The laboratories test the material or product and submit the test results to the agency administering the collaborative test for evaluation. Collaborative reference testing may be used voluntarily by testing laboratories for self-evaluating or improving test criteria and methodology. In conjunction with other procedures, collaborative reference testing may be used in laboratory examination for accreditation or continued accreditation.

INDEX OF TERMS

NBS-114A (REV. 7-73)

U.S. DEPT. OF COMM. BIBLIOGRAPHIC DATA SHEET	1. PUBLICATION OR REPORT NO. NBSIR 75-719	2. Gov't Accession No.	3. Recipient's Accession No.

4. TITLE AND SUBTITLE

A Compliance Testing System for NILECJ

5. Publication Date: February 1976

6. Performing Organization Code

7. AUTHOR(S)
Robert Mills

8. Performing Organ. Report No.

9. PERFORMING ORGANIZATION NAME AND ADDRESS

NATIONAL BUREAU OF STANDARDS
DEPARTMENT OF COMMERCE
WASHINGTON, D.C. 20234

10. Project/Task/Work Unit No.

11. Contract/Grant No.

12. Sponsoring Organization Name and Complete Address *(Street, City, State, ZIP)*

National Institute of Law Enforcement and Criminal Justice, LEAA
Department of Justice
Washington, D.C. 20531

13. Type of Report & Period Covered: Final

14. Sponsoring Agency Code

15. SUPPLEMENTARY NOTES

16. ABSTRACT *(A 200-word or less factual summary of most significant information. If document includes a significant bibliography or literature survey, mention it here.)*

In order to assure that NILECJ equipment standards have the impact intended, a Compliance Testing and Laboratory Accreditation program is needed to establish which items available on the market do, in fact, meet the requirements of the standards. This report contains recommendations for such a NILECJ program. In brief, the proposed program would (a) result in a body of qualification and acceptance test data, (b) establish a list of testing laboratories competent to perform these tests, and (c) set up a "compliance information system" for the dissemination of this information to officials in the criminal justice system.

17. KEY WORDS *(six to twelve entries; alphabetical order; capitalize only the first letter of the first key word unless a proper name; separated by semicolons)* Acceptance testing; compliance testing; laboratory evaluation; performance testing; qualified products lists; testing.

18. AVAILABILITY

[X] Unlimited

[ ] For Official Distribution. Do Not Release to NTIS

[ ] Order From Sup. of Doc., U.S. Government Printing Office Washington, D.C. 20402, SD Cat. No. C13

[X] Order From National Technical Information Service (NTIS) Springfield, Virginia 22151

19. SECURITY CLASS (THIS REPORT): UNCLASSIFIED

21. NO. OF PAGES: 24

20. SECURITY CLASS (THIS PAGE): UNCLASSIFIED

22. Price: $3.50

USCOMM-DC 29042-P74