

**METRIC TRANSITION PLAN
(IMPLEMENTATION PROCEDURES)**

1. REASON FOR ISSUE

a. This handbook sets forth procedures for ongoing implementation of the policies contained in VA Directive 0010, Metric Transition Plan (Implementation and Guidance) within the Department of Veterans Affairs. The handbook must be used with the directive.

b. To change the functional number of VA Handbook 0010, Metric Transition Plan to VA Handbook 0100.

2. SUMMARY OF CONTENTS: This handbook outlines the procedures to be used to complete transition to the metric system of measurement.

3. RESPONSIBLE OFFICE: Office of the Deputy Assistant Secretary for Acquisition and Materiel Management (90).

4. RELATED DIRECTIVE: VA Directive 0100, Metric Transition Plan (Implementation and Guidance).

5. RESCISSION. VA Handbook 0010, Metric Transition Plan (Implementation Procedures) dated March 8, 1996.

CERTIFIED BY:

**BY DIRECTION OF THE SECRETARY
OF VETERANS AFFAIRS:**

/s/
Acting Principal Deputy Assistant
Secretary for Information and Technology

/s/
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PROCEDURES FOR TRANSITIONING TO THE METRIC SYSTEM OF MEASUREMENT

1. GENERAL

a. Section 5164 of the Omnibus Trade and Competitiveness Act of 1988 (Public Law 100-418) designates the metric system of measurement as the preferred system of weights and measures for United States trade and commerce. It requires that each Federal agency use the metric system of measurement in its procurements, grants, and other business-related activities. The law also requires each agency to issue implementing guidelines and to report annually to Congress on actions taken or planned to implement the metric system.

b. VA Directive and Handbook 0100 provide the implementing guidelines required by the law and outline the procedures to be used by VA facilities to complete its transitioning to the metric system of measurement by the year 2005.

2. DEFINITIONS

a. **Metrication.** Any act that increases the use of the metric system, including metric training and initiation or conversion of measurement-sensitive processes and systems to the metric system.

b. **Metric System.** The International System of Units (Le Systeme International d'Unites (SI)) of the International Bureau of Weights and Measures. Most units that VA will use are listed in Federal Standard 376B, Preferred Metric Units for General Use by the Federal Government.

c. **Hard Metric.** The use of metric SI measurements only in specifications, standards, supplies, and services.

d. **Soft Metric.** The mathematical conversion of inch/pound measurements to metric equivalents in specifications, standards, supplies, and services. The physical dimensions are not changed.

e. **Dual Dimension.** The use of both inch/pound and metric measurements. For example, an item is designed, produced, and described in inch/pound values with soft metric values also shown for information or comparison purposes.

f. **Hybrid Systems.** The use of both inch/pound and hard metric values in specifications, standards, supplies, and services, e.g., an engine with internal parts in metric dimensions and external fittings or attachments in inch/pound dimensions.

3. PROCEDURES

a. VA will use the metric system of measurement in all its grants.

b. VA will use the metric system of measurement in all its business-related activities (unless metric usage is impractical or would have an adverse impact on the market share of U.S. firms). Business-related activities include but are not limited to measurement-sensitive data in reports, correspondence, paper size, computer data files, medical, nutrition, travel, forms, weights, measures, temperatures, and signage.

c. VA will seek ways to increase understanding of the metric system of measurement through educational information and guidance in VA publications for its employees, customers, patient population, contractors, vendors, and others that have relations with the Department.

d. VA will support Federal transition and national conversion to the metric system through participation on the Interagency Council on Metric Policy and on Government/industry subcommittees, working panels, and groups.

e. VA will establish an active process for policy level review of any decision made to not use metric measurement units.

f. VA will encourage industry in the change to the metric system by acquiring commercially available metric products and services that meet the functional requirements of VA and its customers, so long as competition is maintained. As a minimum, the following statement is to be included in all procurements that identify non-metric measurements in the requirements:

“Metric Products. Products manufactured to metric dimensions will be considered on an equal basis with those manufactured using inch/pound units, providing they fall within the tolerances specified using conversion tables contained in the latest revision of Federal Standard No. 376B, and all other requirements of this document are met. If a product is manufactured to metric dimensions and those dimensions exceed the tolerances specified in the inch/pound units, a request should be made to the contracting officer to determine if the product is acceptable. The contracting officer, in concert with the Contracting Officer’s Technical Representative, will accept or reject the product.”

g. All VA product descriptions including VA specifications, standards, and prepared commercial item descriptions will be developed using metric measurements. Commercially developed metric specifications and internationally or domestically developed voluntary standards using metric will be adopted whenever possible. Soft, dual, or hybrid English-metric measurements are to be replaced with hard metric measurements whenever and as soon as practical.

h. Existing specifications or standards in inch/pound units will be converted as soon as possible, but no later than the end of its next review cycle or when they are updated under normal conditions.

i. The measurement units in which a system is originally designed may be retained for the life of that system, unless conversion is necessary or advantageous.

j. Bulk (loose, unpacked) materials normally will be specified and accepted in metric units. Measuring devices, shop and laboratory equipment should be procured in metric or dual units.

k. The metric system of weights and measures will be used for proposals in grants, cooperative agreements, interagency agreements, and contracts. Likewise, metrics will be used for reports, publications, and communications regarding proposals.

l. VA will state all measurement sensitive requirements in metric terms whenever possible. Alternatives to hard metric are soft, dual, and hybrid metric terms. The tolerances specified in the conversion tables contained in the latest revision of Federal Standard No. 376B will be used by the requesting VA activity.

m. Contracting officers will return all statements of work/specifications that are not expressed in some form of metric terms to the requirements office that prepared the documents, if:

(1) The contract is expected to be \$500,000 or more, unless the requirements office has forwarded to the contracting activity for approval, in a waiver format, a justification for the use of non-metric specifications/statements of work. Optional year pricing shall be considered when computing the \$500,000 threshold. If the request for waiver is not approved, the requirement package will not be processed. It will be returned to the requirement office.

(2) The contract is expected to exceed the simplified acquisition threshold but is less than \$500,000 and a justification for the use of non-metric specifications/statements of work is not included with the requirement package.

(3) The item is considered a simplified acquisition and attempts have not been made to obtain such items in metric measurements when available, economically feasible, and practical to meet program/project needs. The unavailability of items in metric units such as mandatory Federal Supply Schedules and Government stock is sufficient justification for a non-metric purchase, and a statement to that effect will be placed in the project file.

(4) Waivers are not required when ordering from the General Services Administration and Department of Defense (DoD) depot stock, mandatory Federal Supply Schedule contracts; mandatory sources of supply, such as Federal Prison Industries and Committee for Purchase

From People Who Are Blind or Severely Disabled or if a contract is not expected to exceed \$500,000. When a contract is not expected to exceed \$500,000, all attempts to apply metric measurements must be taken. If conversion of the measurements to metrics is determined to be inappropriate, a statement justifying the circumstances will be maintained on file as indicated in paragraphs (l) (1) and (2) above.

(5) Metric conversion costs will be handled in VA as normal operating expenses. However, any major costs are to be identified to the extent practicable and included in the metric annual report. This includes the cost of metric aids, tools, equipment, and training. Significant cost savings resulting from metric conversion also should be identified to the extent practical.

(6) New VA Federal Supply Schedule contracts shall encourage industry to provide products made to metric dimensions.

(7) VA will begin to phase in the use of metric size paper, envelopes, and other related products.

(8) References to measurements in VA publications, forms, correspondence, and other published material shall be in metric as the primary measurement. Only when necessary will the inch/pound measurement be used in parentheses after the metric measurement.

(9) VA will use metric weights and measurements in its transportation requirements and bills of lading. Until the transportation industry becomes more adapted to the use of the metric system, VA may use dual measurements.

(10) VA will inform and assist industry, especially small businesses, as they voluntarily convert to the metric system. VA must work with other Federal agencies and states to encourage essential small businesses to transition to the metric system. Local notifications should be provided to the industry/private sector informing them of VA's intentions for converting procurements, grants, and other business-related measurements to metrics.

(11) VA will review all activities, projects, and programs to determine if they contain measurement-sensitive areas. All measurement-sensitive areas shall be further reviewed for conversion to the metric system. Any concerns or barriers that would prevent VA from converting to metrics will be identified and reported if elimination of these adversities cannot be accomplished.

4. RESPONSIBILITIES. The Deputy Assistant Secretary for Acquisition and Materiel Management (90) will ensure that a metric program is established within the Office of Acquisition and Materiel Management. This office will continue to review, develop, and issue Departmentwide guidance and support for completing the transition to the metric system of measurement within VA.

a. The Deputy Assistant Secretary for Acquisition and Materiel Management (90) is designated the Metric Executive and will:

- (1) Ensure VA's implementation of the Act.
- (2) Provide VA representation to the Interagency Council on Metric Policy.
- (3) Establish VA policy for use of the metric system of measurement and approve or disapprove deviations from that policy.
- (4) Ensure appropriate VA office representation on the Metric Operating Committee (MOC).
- (5) Appoint a VA Metric Coordinator and designate the Coordinator to serve on the MOC.
- (6) Appoint a person to chair the VA Metric Task Group/Committee.
- (7) Review, monitor, and approve waivers or delays in implementing metric usage within VA.
- (8) Ensure that data on VA's metrication process and problems encountered is collected annually to meet reporting requirements in the Act as imposed by the Secretary of Veterans Affairs.

b. The VA Metric Task Group/Committee will formulate metric policy for the approval of the Deputy Assistant Secretary for Acquisition and Materiel Management (90).

c. The requesting official is responsible for documenting any decision not to use metric measurements. Heads of the requesting VA activity are authorized to sign the request for waiver/delay to implement metric measurements only to the extent that:

- (1) Such use is impracticable or is likely to cause significant inefficiencies or loss of markets to U.S. firms, or
- (2) Exception to the VA metric program, other than that stated above requires the approval of the Deputy Assistant Secretary for Acquisition and Materiel Management (90).

d. The Assistant Secretary for Human Resources and Administration (006) will:

- (1) Devise and implement economical, effective means for informing VA employees of new uses of the metric system within the Department and for increasing employee understanding of the metric system of measurement.
- (2) Work with the services to identify specific metric education requirements for skill training programs.

e. The Assistant Secretary for Public and Intergovernmental Affairs (002) will provide advice and guidance for the preparation and production of all publications and audiovisuals proposed by VA services, Administration Heads, Assistant Secretaries, and Other Key Officials to inform other Federal agencies or the public of new uses of the metric system in VA programs. The Office of Public and Intergovernmental Affairs (002) should be included as a concurring element for the final text of any externally directed communication materials.

f. The Assistant Secretary for Financial Management (004) will deliver VA's progress report on metric system implementation along with annual budget submissions to the Congress.

g. The Under Secretary for Health (10) will:

(1) Designate an organizational element to monitor metric conversion activities for which the Veterans Health Administration (VHA) is responsible.

(2) Appoint an individual as VHA's metric coordinator.

(3) Develop guidelines applicable to VHA's specific mission and responsibility. Guidelines will be consistent with this directive, the Act, and the Executive Order.

(4) Identify and coordinate appropriate metrication training programs for VA employees (this will be accomplished by the VA Learning University.)

h. The Under Secretary for Benefits (20) will:

(1) Designate an organizational element to monitor metric conversion activities for which the Veterans Benefits Administration (VBA) is responsible.

(2) Appoint an individual as VBA's metric coordinator.

(3) Develop guidelines applicable to VBA's specific mission and responsibility. Guidelines will be consistent with this directive, the Act, and the Executive Order.

i. The Under Secretary for Memorial Affairs (40) will:

(1) Designate an organizational element to monitor metric conversion activities for which the National Cemetery Administration (NCA) is responsible.

(2) Appoint an individual as NCA's metric coordinator.

(3) Develop guidelines applicable to their specific mission and responsibility. Guidelines will be consistent with this directive, the Act, and the Executive Order.

j. Administration Heads, Assistant Secretaries, Other Key Officials, and Field Facility Directors will:

(1) Designate an organizational element to monitor metric conversion activities for which they are responsible.

(2) Appoint an individual as their metric coordinator.

(3) Develop metric guidelines applicable to their specific mission and responsibility. Guidelines will be consistent with this directive, the Act, and the Executive Order.

(4) Use the metric system in procurements, grants, and other business-related activities consistent with security, operational, economic, technical, logistical, training, and safety requirements.

(5) Provide training to educate personnel who are required to use the metric system.

(6) In coordination with appropriate officials, initiate all actions necessary to implement this directive and the metric system of measurement.

(7) Submit their annual metric report as identified in VA Handbook 0100, paragraph 9. A consolidated annual VA Metric Report will be submitted to Congress as part of VA's annual budget, with a copy to the Department of Commerce. Reporting will cease the year after full implementation of the metric system by VA.

5. STANDARDS FOR USING METRIC SYMBOLS AND NUMBERS

a. Symbols for units are in lower case except when the name of a unit is a proper name (e.g., m for meter; but N for Newton). There is an exception, which is L for liter. There are also exceptions for special names (e.g., A for ampere; H for henry). It should be noted that only Celsius uses a capital first letter when written out in full.

b. There are no spaces between the prefix and the unit symbol (e.g., kg for kilogram, not k/g).

c. Use a half or full space in place of a comma to separate groups of three numbers (e.g., 27 659.232 24 not 27, 659.232,24). There is an exception; a space is optional with a four-digit number (e.g., 1 237 or 1237).

d. Always use symbols with numerals instead of full words (e.g., 5 m not 5 meters).

e. Always use a full space between the quantity and the symbol (e.g., 45 g not 45g). There is an exception when the first character of a symbol is not a letter—no space is left (e.g., 32°C, not 32° C or 32 °C).

f. Use decimals, not fractions (e.g., 0.25 g, not $\frac{1}{4}$ g).

g. A zero is always used before a decimal point if the number is less than one (e.g., 0.45 g, not .45 g).

h. Typeface and punctuation for element symbols are always printed in Roman Type, regardless of the type used in the surrounding text.

i. Symbols are never pluralized (e.g., 1 g, 45 g, not 45 gs).

j. Never use a period after a symbol except at the end of a sentence.

k. A slash is always used with symbols rather than the word “per” (e.g., km/h, not km per

h). When writing the phrase out, it is written as kilometer per hour, not kilometer/hour.

l. No more than one unit should be used to indicate a quantity (e.g., 8.66 m, not 8 m 66 cm).

m. Alphabetical list of metric term to metric symbol:

ampere.....A	meter.....m
candela.....cd	metric ton.....t
centimeter.....cm	milligram.....mg
coulomb.....C	milliliter.....mL
cubic centimeter...cm ³	millimeter.....mm
cubic decimeter....dm ³	minute (plane angle)....'
cubic meter..... m ³	mole.....mol
degree Celsius.....°C	Newton.....N
farad.....F	ohm.....Ω
gram.....g	pascal.....Pa
hectare.....ha	radian.....rad
henry.....H	second (plane angle)....”
hertz.....Hz	second.....s
joule.....J	siemens.....S
Kelvin.....K	square centimeter....cm ²
kilogram.....kg	square Kilometerkm ²
kilometer.....km	square meter.....m ²
kilometer per hour....km/h	steradian.....sr
kilopascal.....kPa	tesla.....T
kilowatt.....kW	volt.....V
liter.....L	watt.....W
lumen.....lm	webbed.....Wb
lux.....lx	year.....a

n. All measurements will be in metric. If it is necessary to show the inch/pound measurement, it will be indicated after the metric measurement and placed in parentheses, e.g., 215 mm x 279 mm (8 ½ x 11).

6. PROGRAM OPERATIONS

a. The VA metric program can be put to use through the VA Metric Operating Committee, chaired by the Metric Executive or his designee. Among the members will be: the VA, VHA, VBA, and NCA Metric Coordinators; VA representative to the Interagency Council on Metric Policy; and representatives from offices of affected Administration Heads, Assistant Secretaries, and Other Key Officials. General guidance for the VA Metric Operating Committee will be provided by the Office of the Deputy Assistant Secretary for Acquisition and Materiel Management (90), as necessary.

b. The VA Metric Operating Committee will assist in achieving a uniform and coordinated approach to implementing the requirements of the Act. The Committee can recommend guidelines and interpretations.

c. VA metric steering committees and VA metric work groups may be formed for specific purposes (e.g., paper conversion). The work groups will be responsible to the steering committees. Steering committees will be responsible to the VA Metric Operating Committee and the Metric Executive, or his designee.

7. CONVERSION TO METRIC PRODUCTS AND SERVICES

a. VA uses the metric system of measurements in its procurements, grants, and other business-related matters. VA follows the Omnibus Trade and Competitiveness Act of August 23, 1988, (Public Law 100-418) and Executive Order 12770, Metric Usage in Federal Government Programs, dated July 25, 1991.

b. Compliance is based on the fact that the metric system of measurement is the preferred system of weights and measures for United States trade and commerce. Each Federal agency, to the extent economically feasible by the end of Fiscal Year 2005, is to use the metric system of measurement in its procurements, grants, and other business-related activities unless metric usage is impractical or would have an adverse impact on the market share of U.S. firms.

c. Agencies are to seek ways to increase understanding of the metric system of measurement. VA encourages industry, especially small businesses, to voluntarily change to the metric system by acquiring commercially available metric products and services that meet our functional requirements. VA works with other Federal agencies and states to encourage essential small businesses to transition to the metric system.

d. VA continues to accelerate the conversion to the metric system of measurement in order that all measurement-sensitive areas are converted.

8. WAIVERS/DELAYS NOT TO USE METRIC MEASUREMENTS. All waivers will include:

- a. A justification as to why the metric system of measurement was not used in developing the specification/work statement for the subject solicitation.
- b. An indication as to what initiatives are being taken to ensure the use of the metric system of measurement in future specifications/work statements of this nature.
- c. A tentative date as to when it is anticipated that hard metric measurements can be used in specifications/work statements for future requirements of this nature.
- d. Any comments on particular problems that you have encountered or anticipated in implementing the metric system and/or any concerns expressed by contractors that you feel warrant the attention of the Metric Executive or VA Metric Coordinator.
- e. The head of the requesting VA activity shall approve the waiver.
- f. A copy of the waiver to issue a non-metric solicitation will be forwarded to the VA Metric Coordinator, VA Central Office.

9. INTERAGENCY COORDINATION. Interagency coordination of metrication activity within the United States is the function of the following organizations:

- a. **Interagency Council on Metric Policy (ICMP).** The ICMP provides for high-level coordination of metric policy between Federal agencies. The Office of the Deputy Assistant Secretary for Acquisition and Materiel Management (90) represents VA on this committee and may designate a high level executive to be the alternate.
- b. **ICMP Metrication Operating Committee (MOC).** The MOC coordinates appropriate interagency metrication activities and is composed of Federal agency metric coordinators. The MOC undertakes tasks assigned by the ICMP. The Office of the Deputy Assistant Secretary for Acquisition and Materiel Management (92A) represents VA on this committee. The VA Metric Coordinator shall be the member.
- c. **The MOC Steering Group.** The Steering Group reviews special metric interest for presentation to and undertakes tasks assigned by the ICMP and MOC. The Office of the Deputy Assistant Secretary for Acquisition and Materiel Management (92A) represents VA on this committee. Normally the MOC representative is selected by the Department of Commerce to be a member of the group.
- d. **MOC Functional Area Subcommittees.** Subcommittees are formed by the MOC to coordinate specific functional areas. It is the responsibility of the subcommittees to keep department officials informed of the metric progress being made by industry in each functional area and the impact to Federal activities. MOC subcommittees exist in such functional areas

as health care, construction, procurement and supply, transportation, and consumer affairs. VA participates on the subcommittees with representatives from the administrations and staff offices having direct interest in their activities. VA chairs the MOC Health Care Subcommittee.

10. COORDINATION WITH THE PRIVATE SECTOR. Because the private sector has an essential role in the transition to the use of metric measurements, its needs and capabilities must be considered along with those of the Federal Government. The American National Metric Council (ANMC) and the U.S. Metric Association (USMA) traditionally have been regarded as the principal representatives of private sector metric interests, plans, and conversion actions. Federal agencies, including VA, work closely with the USMA and ANMC to aid in exchanging ideas, plans, and methods needed to fulfill the intent of the Act. Coordination with other private sector organizations involved in metrication activities may be beneficial.

11. REPORTING

a. Field facility directors will submit their reports to the appropriate Administration Head.

b. Administration Heads, Assistant Secretaries, and Other Key Officials shall submit to the Office of Acquisition and Materiel Management (90), by November 22 of each year, a report for the past fiscal year including:

(1) Significant metric information, kilometer stones (milestones), or accomplishments.

(2) Significant problems encountered in metric conversion.

(3) Any recommendations regarding VA metric program policy or activities, including actions planned for the current fiscal year, to further implement the metric system.

(4) Other relevant information (e.g., significant savings, costs, experiences, or events).

c. VHA, VBA, and NCA Field Facility Directors and Veterans Integrated Service Network Directors shall submit their annual metric reports as determined by VHA, VBA, and NCA policy.

d. The VA Metric Coordinator (92A) will consolidate the above reports into an annual VA Metric Report. This report will be submitted to the Office of the Deputy Assistant Secretary for Acquisition and Materiel Management (90) for approval. The report will then be submitted to the Department of Commerce for consolidation with other department and agency reports for submission to Congress. Reporting will cease in the year after VA's full implementation of the metric system.