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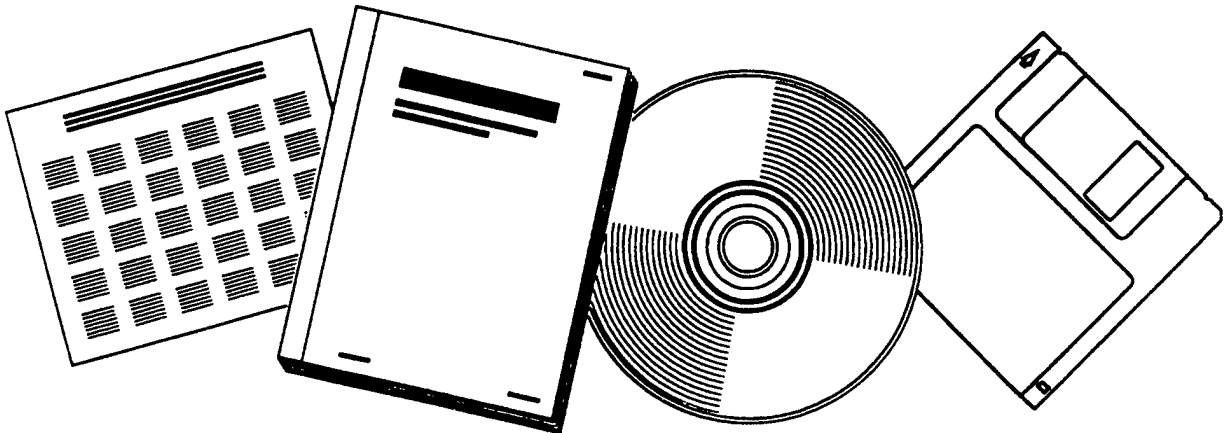
PRESENT WORTH FACTORS FOR LIFE-CYCLE COST STUDIES IN THE DEPARTMENT OF DEFENSE (1994)

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Present Worth Factors for Life-Cycle Cost Studies in the Department of Defense (1994)

Data for DoD compliance with the Federal Methodology for Life-Cycle Cost
Analysis, Title 10, CFR, Part 436, Subpart A, and OMB Circular A-94

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Gaithersburg, MD 20899-1000

Prepared for:
Office of the Assistant Secretary of Defense--
Production and Logistics
Energy Policy Directorate
Washington, DC 20301

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U.S. DEPARTMENT OF COMMERCE
Ronald H. Brown, Secretary

TECHNOLOGY ADMINISTRATION
Mary L. Good, Under Secretary for Technology

**NATIONAL INSTITUTE OF STANDARDS
AND TECHNOLOGY**
Arati Prabhakar, Director

PREFACE

On March 18, 1991, the Army, Navy, and Air Force signed a Memorandum of Agreement (MOA) on Criteria/Standards for Economic Analysis/Life-Cycle Costing for MILCON Design. The stated purpose of the MOA is to establish criteria and standards for performing economic analyses (EAs) and life-cycle cost (LCC) studies in support of design decisions for projects in the Military Construction (MILCON) Program; i.e., to support the selection from various alternatives of components/systems being considered as elements in facilities design. Since 1991 the criteria/standards package represented by the provisions of the MOA has been adopted and specified for use in conjunction with several other Department of Defense (DoD) applications. For example, the Office of the Secretary of Defense has specified that EAs conducted in support of project-justification decisions for ECIP (Energy Conservation Investment Program) projects be based on this same criteria/standards package.

The criteria and standards in the MOA are responsive to, and consistent with, the requirements of 10 CFR 436 governing the economic analysis of investments in energy conservation and renewable energy resources for Federal facilities. However, the governing order for non-energy-related investments, OMB Circular A-94, was significantly revised in October 1992. Circular A-94 no longer specifies a single discount rate for economic analysis of Federal investments. Instead, Circular A-94 specifies two basic types of discount rates: (1) a discount rate for cost-effectiveness, lease-purchase, and related analyses; and (2) a discount rate for public investment and regulatory analyses. Only discount rates for the first type of analyses are included in this NIST report, since its primary purpose is to support cost-effectiveness studies related to the design and operation of DoD facilities.

OMB discount rates for cost-effectiveness and lease-purchase studies are based on interest rates on Treasury Notes and Bonds with maturities ranging from 3 to 30 years. Currently (as of February 1993) five maturities have been specifically identified by OMB, and are shown here with the corresponding real interest rate to be used as the discount rate for studies subject to Circular A-94:

| | | | | | |
|-----------|---------------|---------------|---------------|----------------|----------------|
| Maturity: | <u>3-year</u> | <u>5-year</u> | <u>7-year</u> | <u>10-year</u> | <u>30-year</u> |
| Rate: | 3.1% | 3.6% | 4.0% | 4.3% | 4.5% |

For total study periods corresponding to these five maturities, Circular A-94 requires that the discount rates correspond to the rates shown. The total study period is the time between the Beneficial Occupancy Date and the end of study (the service period), *plus* the time between the Date of Study and the Beneficial Occupancy Date (the planning and construction period). For total study periods different from the five maturities shown, Circular A-94 does not specify the discount rate to be used. Although Circular A-94 allows for interpolation between the rates shown, such an approach is not practical for the simplified tabular approach used in this document. Accordingly, the enclosed tables have been developed for use primarily for long-term studies, defined here as those with total study periods exceeding 10 years. These data are based on a discount rate of 4.5%, corresponding to OMB's 30-year rate.

The tables have also been designed for use in support of short-term studies, defined here as those with total study periods of 10 years or less. For these types of studies, the present worth factors are based on a discount rate of 4.0%, corresponding to OMB's 7-year rate. Accordingly, for short-term studies with total study periods not close to seven years, the discount factors provided in the tables should be considered approximations only. When more precise results are required, the present worth factors should be determined using a computer program specifically approved for DoD-construction design applications. The Life Cycle Cost in Design (LCCID) program, developed by the U.S. Army Corps of Engineers' Construction Engineering Research Laboratory (CERL) specifically for DoD-construction design applications, is recommended. The NIST Building Life Cycle Cost (BLCC) or DISCOUNT programs, developed for more general applications, are also acceptable. While the NIST programs produce accurate results, the formats of the reports provided do not correspond to the standard DoD report formats. Whichever computer program is used, it must be the most recent version of that program, which incorporates the latest DOE-projected energy price escalation rates and the discount rates for energy and non-energy studies.

The tables presented in this document are designed to be used in support of EAs/LCC studies conducted in accordance with the provisions of the MOA. These tables are considered to be valid and appropriate for all analyses/studies initiated during FY 94, and are authorized for use throughout that period. The present worth factors presented in the annually recurring cost tables are based on an assumed Date of Study (DOS) of April 1994. However, these factors should be sufficiently accurate for use at any time during that fiscal year.

The present worth factors in this report are consistent with those in NISTIR 85-3273-8, Energy Prices and Discount Factors for Life-Cycle Cost Analysis 1994, the Annual Supplement to NIST Handbook 135, Life-Cycle Costing Manual for the Federal Energy Management Program. However, the present worth factors for DoD studies are more specific as to the Date of Study and the Beneficial Occupancy Date than those in NISTIR 85-3273-8. The DoD factors for annually recurring costs assume that the Date of Study is April 1994 and that the Beneficial Occupancy Date occurs in October of the current year or in October of a future year (up to 2003). The DoD tables for annually recurring costs are based on a mid-year discounting convention for all annually-recurring costs, while the corresponding tables in NISTIR 85-3273-8 are based on an end-of-year discounting convention.

The same forecast of regional energy prices provided by the U.S. Department of Energy's Energy Information Administration (EIA) for NISTIR 85-3273-8 were used in computing the energy-type-specific tables in this report. However, with one exception, these tables are based on forecasts of energy prices for the industrial sector only, while the tables in NISTIR 85-3273-8 are based on residential, commercial, and industrial forecasts. Price forecasts for liquefied petroleum gas (LPG) in the residential sector were used for the DoD tables because industrial LPG price forecasts were not available from EIA.

For LCC analysis of Federal projects outside of the Department of Defense, especially those projects related to energy conservation and renewable energy resources, the present worth factors from NISTIR 85-3273-8 should be used.

Both the CERL LCCID Program and the NIST Building Life-Cycle Program (BLCC), version 4.0 or later, can be used for the economic evaluation of MILCON design projects, consistent with the MOA of March 18, 1991. Both use the DOE projections of energy price increases (which are on the LCCID and BLCC disks) to calculate the present value of future energy costs. In addition, the NIST ERATES program can be used to incorporate complex electricity rate schedules into an economic analysis of building energy use.

NISTIR 85-3273-8, as well as NIST Handbook 135, BLCC, and ERATES can be obtained from:

Advanced Sciences, Inc.
2000 North 15th Street
Suite 407
Arlington, VA 22201
(703) 243-4900

ABSTRACT

This document provides 47 tables of present worth factors to be used in computing the present worth of future costs (or cost reductions) in economic analyses of design decisions for projects in the DoD Military Construction Program. These factors are especially useful for the life-cycle cost analysis of investments in buildings or building systems which are intended to reduce future operating, maintenance, repair, replacement, and energy costs over the life of the facility. The tables include present worth factors for both one-time costs and annually recurring costs, based on the FEMP discount rate of 3.1% (FY 1994) for energy-related studies and on the OMB discount rate of 4.0% and 4.5% for short-term and long-term non-energy studies, respectively. Forecasts of future energy prices used in the calculation of present worth factors for energy costs were provided by the Energy Information Administration.

ACKNOWLEDGMENTS

The author wishes to thank Larry Schindler of the U.S. Army Corps of Engineers Headquarters Office for his sponsorship of this project, for providing the requirements of the tables, and for his careful review of this manuscript. The author also wishes to thank Linda Lawrie of the U.S. Army Corps of Engineers' Construction Engineering Research Laboratory for providing the basic format of the tables as used in prior years, and upon which these tables are based. Appreciation is also extended to Mr. Mark Rodekoeh, Director, and Ms. Mary Joyce, Economist, of Energy Demand and Integration Division of the DOE Energy Information Administration, for providing the energy price projections upon which much of this report is based. Also deserving thanks are Miss Jennifer E. Day of NIST for her assistance in preparing this report for publication and Ms. Barbara Lippiatt of NIST for her timely review of this manuscript.

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Part I. Tables of Present Worth Factors for Energy Studies

Part I contains tables of present worth factors for use in computing the life-cycle costs of the competing alternatives in an energy-related study, in accordance with the provisions of governing DoD criteria (see Appendix A). These tables are all numbered in a sequence beginning with the letter "E" for energy. The discount rate used to compute these present worth factors is 3.1%. This is the discount rate specified for use in energy-related projects by the Federal Energy Management Program for FY 1994.

Table E-1, "Present Worth Factors--One-Time Costs, Zero Differential Escalation," provides present worth factors for costs which occur one time or at irregular intervals throughout the study period. These costs include construction/acquisition costs, non-annually recurring maintenance costs, major repair and replacement costs, and retention/salvage value or disposal cost. These factors are called "single present worth" (SPW) factors. The present worth of each cost occurrence is found by multiplying that cost, in Date-of-Study (DOS) prices, by the SPW factor corresponding to the time of occurrence (years after DOS). Interpolation is encouraged for non-integer time periods.

Table E-2, "Present Worth Factors--Annually Recurring Non-Energy Costs, Zero Differential Escalation," provides present worth factors for all costs other than energy costs which are incurred annually throughout the study period in substantially the same amount each year (in constant dollar terms), such as routine maintenance and repair costs. These factors are called "uniform present worth" (UPW) factors. The factors in this table are based on the assumption that the DOS is in April 1994, the Beneficial Occupancy Date is in October of the same year or a future year, and that the annual cost occurs approximately at mid-year during each year of occupancy, or represents the sum of several costs distributed relatively uniformly throughout the year. The present worth of a cost recurring annually over the study period is found by multiplying the annual amount, in DOS prices, by the appropriate UPW factor. The number of payments generally corresponds to the number of years in the study period after the Beneficial Occupancy Date. Interpolation is encouraged for study periods and for beneficial occupancy dates other than those shown on the table.

Tables E-3-ET-R, where ET is the energy type code and R is the region number (R = 5 is for U.S. average), provide present worth factors for annually recurring energy costs. These factors are based on the assumption that annual energy usage/savings is constant from year to year, but that energy prices are changing over time, in accordance with the provisions of governing DoD criteria (see Appendix A). These factors are sometimes called "modified uniform present worth" (UPW*) factors. The UPW* factors in this table are based on the assumption that the DOS is in April 1994, the Beneficial Occupancy Date is in October of the same year or a future year, and that the annual energy cost occurs approximately at mid-year during each year of occupancy, or represents the sum of several costs distributed relatively uniformly throughout the year. The present worth of an annual energy cost over the study period is found by multiplying the annual amount, in DOS prices, by the appropriate UPW* factor. The number of payments generally corresponds to the number of years in the study period after the Beneficial Occupancy Date. Interpolation is encouraged for study periods and for Beneficial Occupancy Dates other than those shown on the tables.

ENERGY STUDIES: ALL REGIONS

ENERGY STUDIES: ALL REGIONS

Table E-1. Present Worth Factors - One-Time Costs
Zero Differential Escalation (e = 0%)

| Time Cost Incurred (Years after DOS) | SPW Factor | Time Cost Incurred (Years after DOS) | SPW Factor |
|---|------------|---|------------|
| 0.00 | 1.0000 | 16 | 0.6136 |
| 0.25 | 0.9924 | 17 | 0.5951 |
| 0.50 | 0.9849 | 18 | 0.5772 |
| 0.75 | 0.9774 | 19 | 0.5599 |
| | | 20 | 0.5430 |
| 1 | 0.9699 | 21 | 0.5267 |
| 2 | 0.9408 | 22 | 0.5109 |
| 3 | 0.9125 | 23 | 0.4955 |
| 4 | 0.8850 | 24 | 0.4806 |
| 5 | 0.8584 | 25 | 0.4662 |
| 6 | 0.8326 | 26 | 0.4521 |
| 7 | 0.8076 | 27 | 0.4385 |
| 8 | 0.7833 | 28 | 0.4254 |
| 9 | 0.7598 | 29 | 0.4126 |
| 10 | 0.7369 | 30 | 0.4002 |
| 11 | 0.7148 | 35 | 0.3435 |
| 12 | 0.6933 | 40 | 0.2949 |
| 13 | 0.6724 | 45 | 0.2531 |
| 14 | 0.6522 | 50 | 0.2173 |
| 15 | 0.6326 | | |

Notes:

- <1> Authorized Period of Use of Table is Oct 1993 through Sep 1994.
 <2> Tabulated Data Based on Criteria Contained in 18 Mar 91 Tri-Service Memorandum
 of Agreement on Criteria/Standards for EA/LCC for MILCON Design.
 Data Based on Discount Rate of 3.1% (NIST Annual Supplement to Handbook 135, Oct 1993).
 <3> Covers Costs such as Construction, Procurement, Replacement, Disposal.

Table E-2. Present Worth Factors--Annually Recurring Non-Energy Costs
Zero Differential Escalation (e = 0%)

| Number of Payments | Beneficial Occupancy Date | | | | | | | | | | | | | | | | | | | |
|--------------------------|---------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|--|--|--|--|--|--|--|--|--|--|
| | Oct 1994 | Oct 1995 | Oct 1996 | Oct 1997 | Oct 1998 | Oct 1999 | Oct 2000 | Oct 2001 | Oct 2002 | Oct 2003 | | | | | | | | | | |
| 1 | 0.9699 | 0.9408 | 0.9125 | 0.8850 | 0.8584 | 0.8326 | 0.8076 | 0.7833 | 0.7598 | 0.7369 | | | | | | | | | | |
| 2 | 1.9107 | 1.8532 | 1.7975 | 1.7435 | 1.6911 | 1.6402 | 1.5909 | 1.5431 | 1.4967 | 1.4517 | | | | | | | | | | |
| 3 | 2.8232 | 2.7383 | 2.6560 | 2.5761 | 2.4986 | 2.4235 | 2.3506 | 2.2800 | 2.2114 | 2.1449 | | | | | | | | | | |
| 4 | 3.7082 | 3.5967 | 3.4886 | 3.3837 | 3.2819 | 3.1833 | 3.0876 | 2.9947 | 2.9047 | 2.8173 | | | | | | | | | | |
| 5 | 4.5667 | 4.4294 | 4.2962 | 4.1670 | 4.0417 | 3.9202 | 3.8023 | 3.6880 | 3.5771 | 3.4695 | | | | | | | | | | |
| 6 | 5.3993 | 5.2369 | 5.0795 | 4.9267 | 4.7786 | 4.6349 | 4.4956 | 4.3604 | 4.2293 | 4.1021 | | | | | | | | | | |
| 7 | 6.2069 | 6.0202 | 5.8392 | 5.6637 | 5.4934 | 5.3282 | 5.1680 | 5.0126 | 4.8619 | 4.7157 | | | | | | | | | | |
| 8 | 6.9902 | 6.7800 | 6.5761 | 6.3784 | 6.1866 | 6.0006 | 5.8202 | 5.6452 | 5.4754 | 5.3108 | | | | | | | | | | |
| 9 | 7.7499 | 7.5169 | 7.2909 | 7.0717 | 6.8590 | 6.6528 | 6.4528 | 6.2587 | 6.0706 | 5.8880 | | | | | | | | | | |
| 10 | 8.4868 | 8.2317 | 7.9841 | 7.7441 | 7.5112 | 7.2854 | 7.0663 | 6.8539 | 6.6478 | 6.4479 | | | | | | | | | | |
| 11 | 9.2016 | 8.9249 | 8.6566 | 8.3963 | 8.1438 | 7.8990 | 7.6614 | 7.4311 | 7.2076 | 6.9909 | | | | | | | | | | |
| 12 | 9.8948 | 9.5973 | 9.3088 | 9.0289 | 8.7574 | 8.4941 | 8.2387 | 7.9910 | 7.7507 | 7.5176 | | | | | | | | | | |
| 13 | 10.5673 | 10.2495 | 9.9413 | 9.6424 | 9.3525 | 9.0713 | 8.7985 | 8.5340 | 8.2774 | 8.0285 | | | | | | | | | | |
| 14 | 11.2195 | 10.8821 | 10.5549 | 10.2375 | 9.9297 | 9.6312 | 9.3416 | 9.0607 | 8.7883 | 8.5240 | | | | | | | | | | |
| 15 | 11.8520 | 11.4957 | 11.1500 | 10.8148 | 10.4896 | 10.1742 | 9.8683 | 9.5716 | 9.2838 | 9.0046 | | | | | | | | | | |
| 16 | 12.4656 | 12.0908 | 11.7273 | 11.3746 | 11.0326 | 10.7009 | 10.3791 | 10.0671 | 9.7644 | 9.4708 | | | | | | | | | | |
| 17 | 13.0607 | 12.6680 | 12.2871 | 11.9177 | 11.5593 | 11.2118 | 10.8747 | 10.5477 | 10.2305 | 9.9229 | | | | | | | | | | |
| 18 | 13.6380 | 13.2279 | 12.8302 | 12.4444 | 12.0702 | 11.7073 | 11.3553 | 11.0138 | 10.6827 | 10.3615 | | | | | | | | | | |
| 19 | 14.1978 | 13.7709 | 13.3569 | 12.9552 | 12.5657 | 12.1879 | 11.8214 | 11.4660 | 11.1212 | 10.7868 | | | | | | | | | | |
| 20 | 14.7409 | 14.2976 | 13.8677 | 13.4508 | 13.0463 | 12.6540 | 12.2736 | 11.9045 | 11.5466 | 11.1994 | | | | | | | | | | |
| 21 | 15.2676 | 14.8085 | 14.3632 | 13.9314 | 13.5125 | 13.1062 | 12.7121 | 12.3299 | 11.9592 | 11.5996 | | | | | | | | | | |
| 22 | 15.7784 | 15.3040 | 14.8438 | 14.3975 | 13.9646 | 13.5447 | 13.1375 | 12.7425 | 12.3593 | 11.9877 | | | | | | | | | | |
| 23 | 16.2739 | 15.7846 | 15.3100 | 14.8497 | 14.4032 | 13.9701 | 13.5500 | 13.1426 | 12.7475 | 12.3642 | | | | | | | | | | |
| 24 | 16.7545 | 16.2508 | 15.7621 | 15.2882 | 14.8285 | 14.3827 | 13.9502 | 13.5308 | 13.1239 | 12.7293 | | | | | | | | | | |
| 25 | 17.2207 | 16.7029 | 16.2007 | 15.7136 | 15.2411 | 14.7828 | 14.3383 | 13.9072 | 13.4891 | 13.0835 | | | | | | | | | | |
| 30 | 19.3495 | 18.7677 | 18.2034 | 17.6561 | 17.1252 | 16.6103 | 16.1108 | 15.6264 | 15.1565 | 14.7008 | | | | | | | | | | |
| 35 | 21.1769 | 20.5402 | 19.9226 | 19.3235 | 18.7425 | 18.1790 | 17.6324 | 17.1022 | 16.5880 | 16.0892 | | | | | | | | | | |
| 40 | 22.7456 | 22.0617 | 21.3984 | 20.7550 | 20.1309 | 19.5256 | 18.9385 | 18.3691 | 17.8168 | 17.2810 | | | | | | | | | | |
| 45 | 24.0923 | 23.3679 | 22.6652 | 21.9838 | 21.3227 | 20.6816 | 20.0598 | 19.4566 | 18.8716 | 18.3042 | | | | | | | | | | |
| 50 | 25.2483 | 24.4891 | 23.7528 | 23.0386 | 22.3459 | 21.6740 | 21.0223 | 20.3902 | 19.7771 | 19.1824 | | | | | | | | | | |

Notes: <1> Data Based on Assumed DOS of Apr 1994.

<2> Authorized Period of Use of Table is Oct 1993 through Sep 1994.

<3> Tabulated Data Based on Criteria Contained in 18 Mar 91 Tri-Service Memorandum of Agreement on Criteria/Standards for EA/LCC for MILCON Design.

<4> Data Based on Discount Rate of 3.1% (NIST Annual Supplement to Handbook 135, Oct 1993).
<5> Covers Costs such as Routine Maintenance & Repair and Custodial.

Table E-3-EL-1. Present Worth Factors--Electricity

| Number of Payments | Beneficial Occupancy Date | | | | | | | | | | | | | | |
|--------------------|---------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|--|--|--|--|--|
| | Oct 1994 | Oct 1995 | Oct 1996 | Oct 1997 | Oct 1998 | Oct 1999 | Oct 2000 | Oct 2001 | Oct 2002 | Oct 2003 | | | | | |
| 1 | 0.9739 | 0.9449 | 0.9176 | 0.8949 | 0.8747 | 0.8587 | 0.8400 | 0.8159 | 0.7940 | 0.7724 | | | | | |
| 2 | 1.9187 | 1.8624 | 1.8125 | 1.7696 | 1.7334 | 1.6987 | 1.6559 | 1.6099 | 1.5664 | 1.5236 | | | | | |
| 3 | 2.8363 | 2.7574 | 2.6872 | 2.6284 | 2.5734 | 2.5146 | 2.4499 | 2.3823 | 2.3176 | 2.2552 | | | | | |
| 4 | 3.7312 | 3.6321 | 3.5460 | 3.4683 | 3.3893 | 3.3086 | 3.2223 | 3.1335 | 3.0492 | 2.9675 | | | | | |
| 5 | 4.6059 | 4.4908 | 4.3859 | 4.2843 | 4.1833 | 4.0810 | 3.9735 | 3.8651 | 3.7615 | 3.6613 | | | | | |
| 6 | 5.4647 | 5.3308 | 5.2018 | 5.0782 | 4.9557 | 4.8322 | 4.7051 | 4.5774 | 4.4552 | 4.3371 | | | | | |
| 7 | 6.3046 | 6.1467 | 5.9958 | 5.8507 | 5.7069 | 5.5638 | 5.4174 | 5.2712 | 5.1311 | 4.9996 | | | | | |
| 8 | 7.1206 | 6.9407 | 6.7682 | 6.6018 | 6.4385 | 6.2761 | 6.1111 | 5.9470 | 5.7936 | 5.6488 | | | | | |
| 9 | 7.9146 | 7.7131 | 7.5194 | 7.3334 | 7.1508 | 6.9699 | 6.7870 | 6.6095 | 6.4427 | 6.2805 | | | | | |
| 10 | 8.6870 | 8.4643 | 8.2510 | 8.0458 | 7.8446 | 7.6457 | 7.4495 | 7.2587 | 7.0745 | 6.8954 | | | | | |
| 11 | 9.4381 | 9.1959 | 8.9634 | 8.7395 | 8.5204 | 8.3082 | 8.0986 | 7.8904 | 7.6893 | 7.4939 | | | | | |
| 12 | 10.1697 | 9.9082 | 9.6571 | 9.4153 | 9.1829 | 8.9574 | 8.7304 | 8.5053 | 8.2879 | 8.0766 | | | | | |
| 13 | 10.8821 | 10.6020 | 10.3329 | 10.0779 | 9.8321 | 9.5891 | 9.3452 | 9.1038 | 8.8706 | 8.6437 | | | | | |
| 14 | 11.5758 | 11.2778 | 10.9955 | 10.7270 | 10.4638 | 10.2040 | 9.9438 | 9.6865 | 9.4376 | 9.1955 | | | | | |
| 15 | 12.2516 | 11.9403 | 11.6446 | 11.3588 | 11.0787 | 10.8025 | 10.5265 | 10.2536 | 9.9895 | 9.7327 | | | | | |
| 16 | 12.9142 | 12.5895 | 12.2763 | 11.9736 | 11.6772 | 11.3852 | 11.0935 | 10.8054 | 10.5267 | 10.2557 | | | | | |
| 17 | 13.5633 | 13.2212 | 12.8912 | 12.5722 | 12.2599 | 11.9523 | 11.6454 | 11.3427 | 11.0497 | 10.7646 | | | | | |
| 18 | 14.1951 | 13.8361 | 13.4897 | 13.1548 | 12.8270 | 12.5041 | 12.1826 | 11.8656 | 11.5586 | 11.2598 | | | | | |
| 19 | 14.8099 | 14.4346 | 14.0724 | 13.7219 | 13.3788 | 13.0414 | 12.7056 | 12.3745 | 12.0538 | 11.7419 | | | | | |
| 20 | 15.4085 | 15.0173 | 14.6395 | 14.2738 | 13.9160 | 13.5643 | 13.2145 | 12.8697 | 12.5359 | 12.2111 | | | | | |
| 21 | 15.9911 | 15.5844 | 15.1914 | 14.8110 | 14.4390 | 14.0732 | 13.7097 | 13.3518 | 13.0051 | 12.6679 | | | | | |
| 22 | 16.5582 | 16.1362 | 15.7286 | 15.3339 | 14.9479 | 14.5684 | 14.1918 | 13.8210 | 13.4619 | 13.1125 | | | | | |
| 23 | 17.1101 | 16.6734 | 16.2515 | 15.8428 | 15.4431 | 15.0505 | 14.6610 | 14.2778 | 13.9065 | 13.5451 | | | | | |
| 24 | 17.6473 | 17.1964 | 16.7604 | 16.3381 | 15.9252 | 15.5197 | 15.1178 | 14.7224 | 14.3391 | 13.9662 | | | | | |
| 25 | 18.1702 | 17.7053 | 17.2557 | 16.8201 | 16.3944 | 15.9765 | 15.5623 | 15.1550 | 14.7602 | 14.3760 | | | | | |
| 30 | 20.5824 | 20.0532 | 19.5409 | 19.0444 | 18.5593 | 18.0835 | 17.6131 | 17.1510 | 16.7029 | 16.2669 | | | | | |
| 35 | 22.6895 | 22.1039 | 21.5370 | 20.9872 | 20.4502 | 19.9240 | 19.4044 | 18.8945 | 18.3999 | 17.9186 | | | | | |
| 40 | 24.5299 | 23.8952 | 23.2804 | 22.6841 | 22.1019 | 21.5316 | 20.9691 | 20.4174 | 19.8821 | 19.3613 | | | | | |
| 45 | 26.1375 | 25.4599 | 24.8033 | 24.1664 | 23.5446 | 22.9357 | 22.3357 | 21.7476 | 21.1768 | 20.6214 | | | | | |
| 50 | 27.5417 | 26.8266 | 26.1335 | 25.4611 | 24.8047 | 24.1622 | 23.5295 | 22.9095 | 22.3077 | 21.7221 | | | | | |

Notes: <1> Data Based on Assumed DOS of Apr 1994.

<2> Authorized Period of Use of Table is Oct 1993 through Sep 1994.

<3> Tabulated Data Based on Criteria Contained in 18 Mar 91 Tri-Service Memorandum of Agreement on Criteria/Standards for EA/LCC for MILCON Design.

Data Based on Discount Rate of 3.1% and DOE Projections of Future Price Level Changes for Industrial Sector (NIST Annual Supplement to Handbook 135, Oct 1993).

<3> Region 1: ME, NH, VT, MA, CT, RI, NY, NJ, PA

Table E-3-DO-1. Present Worth Factors--Distillate Oil

| Number of Payments | Beneficial Occupancy Date | | | | | | | | | | | | | | |
|--------------------|---------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|--|--|--|--|--|
| | Oct 1994 | Oct 1995 | Oct 1996 | Oct 1997 | Oct 1998 | Oct 1999 | Oct 2000 | Oct 2001 | Oct 2002 | Oct 2003 | | | | | |
| 1 | 0.9709 | 0.9462 | 0.9308 | 0.9207 | 0.9136 | 0.9100 | 0.9083 | 0.9057 | 0.9011 | 0.8896 | | | | | |
| 2 | 1.9170 | 1.8770 | 1.8515 | 1.8342 | 1.8236 | 1.8183 | 1.8140 | 1.8069 | 1.7908 | 1.7635 | | | | | |
| 3 | 2.8479 | 2.7977 | 2.7651 | 2.7443 | 2.7319 | 2.7240 | 2.7152 | 2.6965 | 2.6647 | 2.6224 | | | | | |
| 4 | 3.7685 | 3.7112 | 3.6751 | 3.6525 | 3.6376 | 3.6252 | 3.6048 | 3.5704 | 3.5236 | 3.4690 | | | | | |
| 5 | 4.6821 | 4.6213 | 4.5834 | 4.5583 | 4.5388 | 4.5148 | 4.4787 | 4.4293 | 4.3702 | 4.3058 | | | | | |
| 6 | 5.5921 | 5.5295 | 5.4891 | 5.4594 | 5.4284 | 5.3887 | 5.3376 | 5.2759 | 5.2070 | 5.1333 | | | | | |
| 7 | 6.5004 | 6.4353 | 6.3903 | 6.3491 | 6.3023 | 6.2476 | 6.1842 | 6.1127 | 6.0344 | 5.9505 | | | | | |
| 8 | 7.4061 | 7.3364 | 7.2799 | 7.2229 | 7.1612 | 7.0942 | 7.0210 | 6.9402 | 6.8517 | 6.7530 | | | | | |
| 9 | 8.3073 | 8.2261 | 8.1538 | 8.0818 | 8.0078 | 7.9310 | 7.8484 | 7.7574 | 7.6541 | 7.5363 | | | | | |
| 10 | 9.1969 | 9.1000 | 9.0127 | 8.9285 | 8.8446 | 8.7585 | 8.6657 | 8.5599 | 8.4374 | 8.3008 | | | | | |
| 11 | 10.0708 | 9.9589 | 9.8593 | 9.7653 | 9.6720 | 9.5757 | 9.4681 | 9.3432 | 9.2020 | 9.0471 | | | | | |
| 12 | 10.9297 | 10.8055 | 10.6961 | 10.5927 | 10.4893 | 10.3782 | 10.2514 | 10.1077 | 9.9483 | 9.7755 | | | | | |
| 13 | 11.7763 | 11.6423 | 11.5235 | 11.4100 | 11.2917 | 11.1615 | 11.0160 | 10.8540 | 10.6767 | 10.4869 | | | | | |
| 14 | 12.6131 | 12.4697 | 12.3408 | 12.2124 | 12.0750 | 11.9260 | 11.7623 | 11.5824 | 11.3881 | 11.1812 | | | | | |
| 15 | 13.4406 | 13.2870 | 13.1432 | 12.9957 | 12.8396 | 12.6723 | 12.4907 | 12.2938 | 12.0823 | 11.8587 | | | | | |
| 16 | 14.2578 | 14.0894 | 13.9265 | 13.7603 | 13.5859 | 13.4007 | 13.2021 | 12.9881 | 12.7599 | 12.5204 | | | | | |
| 17 | 15.0603 | 14.8727 | 14.6911 | 14.5065 | 14.3143 | 14.1121 | 13.8963 | 13.6656 | 13.4215 | 13.1661 | | | | | |
| 18 | 15.8436 | 15.6373 | 15.4374 | 15.2349 | 15.0257 | 14.8064 | 14.5739 | 14.3273 | 14.0672 | 13.7961 | | | | | |
| 19 | 16.6081 | 16.3836 | 16.1658 | 15.9463 | 15.7199 | 15.4839 | 15.2355 | 14.9730 | 14.6973 | 14.4113 | | | | | |
| 20 | 17.3544 | 17.1119 | 16.8772 | 16.6406 | 16.3975 | 16.1456 | 15.8812 | 15.6030 | 15.3124 | 15.0119 | | | | | |
| 21 | 18.0828 | 17.8233 | 17.5714 | 17.3182 | 17.0592 | 16.7913 | 16.5113 | 16.2182 | 15.9131 | 15.5983 | | | | | |
| 22 | 18.7942 | 18.5176 | 18.2490 | 17.9798 | 17.7048 | 17.4213 | 17.1264 | 16.8188 | 16.4995 | 16.1705 | | | | | |
| 23 | 19.4885 | 19.1952 | 18.9107 | 18.6255 | 18.3349 | 18.0365 | 17.7271 | 17.4052 | 17.0716 | 16.7287 | | | | | |
| 24 | 20.1660 | 19.8568 | 19.5563 | 19.2555 | 18.9500 | 18.6371 | 18.3135 | 17.9774 | 17.6298 | 17.2736 | | | | | |
| 25 | 20.8277 | 20.5025 | 20.1864 | 19.8707 | 19.5507 | 19.2235 | 18.8856 | 18.5356 | 18.1747 | 17.8055 | | | | | |
| 30 | 23.9056 | 23.5069 | 23.1189 | 22.7330 | 22.3443 | 21.9499 | 21.5467 | 21.1331 | 20.7103 | 20.2804 | | | | | |
| 35 | 26.6320 | 26.1680 | 25.7165 | 25.2685 | 24.8192 | 24.3657 | 23.9047 | 23.4348 | 22.9569 | 22.4733 | | | | | |
| 40 | 29.0478 | 28.5260 | 28.0181 | 27.5151 | 27.0121 | 26.5061 | 25.9940 | 25.4741 | 24.9474 | 24.4163 | | | | | |
| 45 | 31.1882 | 30.6152 | 30.0574 | 29.5057 | 28.9550 | 28.4026 | 27.8451 | 27.2810 | 26.7111 | 26.1378 | | | | | |
| 50 | 33.0847 | 32.4664 | 31.8643 | 31.2694 | 30.6766 | 30.0830 | 29.4853 | 28.8819 | 28.2738 | 27.6631 | | | | | |

Notes: <1> Data Based on Assumed DOS of Apr 1994.

<2> Authorized Period of Use of Table is Oct 1993 through Sep 1994.

Tabulated Data Based on Criteria Contained in 18 Mar 91 Tri-Service Memorandum of Agreement on Criteria/Standards for EA/LCC for MILCON Design.

Data Based on Discount Rate of 3.1% and DOE Projections of Future Price Level Changes for Industrial Sector (NIST Annual Supplement to Handbook 135, Oct 1993).

<3> Region 1: ME, NH, VT, MA, CT, RI, NY, NJ, PA

Table E-3-RO-1. Present Worth Factors--Residual Oil

| Number of Payments | Beneficial Occupancy Date | | | | | | | | | | | | | |
|--------------------|---------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|--|--|--|--|
| | Oct 1994 | Oct 1995 | Oct 1996 | Oct 1997 | Oct 1998 | Oct 1999 | Oct 2000 | Oct 2001 | Oct 2002 | Oct 2003 | | | | |
| 1 | 0.9989 | 0.9897 | 0.9785 | 0.9741 | 0.9758 | 0.9831 | 0.9916 | 1.0000 | 1.0035 | 0.9954 | | | | |
| 2 | 1.9886 | 1.9682 | 1.9527 | 1.9500 | 1.9589 | 1.9747 | 1.9916 | 2.0035 | 1.9988 | 1.9766 | | | | |
| 3 | 2.9671 | 2.9423 | 2.9285 | 2.9331 | 2.9506 | 2.9747 | 2.9951 | 2.9988 | 2.9800 | 2.9457 | | | | |
| 4 | 3.9413 | 3.9182 | 3.9116 | 3.9247 | 3.9506 | 3.9782 | 3.9905 | 3.9800 | 3.9491 | 3.9057 | | | | |
| 5 | 4.9171 | 4.9013 | 4.9032 | 4.9247 | 4.9540 | 4.9736 | 4.9717 | 4.9491 | 4.9092 | 4.8594 | | | | |
| 6 | 5.9002 | 5.8929 | 5.9032 | 5.9282 | 5.9494 | 5.9548 | 5.9408 | 5.9092 | 5.8629 | 5.8084 | | | | |
| 7 | 6.8918 | 6.8929 | 6.9067 | 6.9235 | 6.9306 | 6.9239 | 6.9008 | 6.8629 | 6.8118 | 6.7529 | | | | |
| 8 | 7.8918 | 7.8964 | 7.9021 | 7.9047 | 7.8997 | 7.8839 | 7.8546 | 7.8118 | 7.7563 | 7.6915 | | | | |
| 9 | 8.8953 | 8.8918 | 8.8833 | 8.8738 | 8.8598 | 8.8377 | 8.8035 | 8.7563 | 8.6949 | 8.6209 | | | | |
| 10 | 9.8907 | 9.8729 | 9.8524 | 9.8339 | 9.8135 | 9.7866 | 9.7480 | 9.6949 | 9.6244 | 9.5409 | | | | |
| 11 | 10.8719 | 10.8420 | 10.8124 | 10.7876 | 10.7624 | 10.7311 | 10.6866 | 10.6244 | 10.5443 | 10.4511 | | | | |
| 12 | 11.8410 | 11.8021 | 11.7661 | 11.7365 | 11.7069 | 11.6697 | 11.6160 | 11.5443 | 11.4546 | 11.3522 | | | | |
| 13 | 12.8010 | 12.7558 | 12.7151 | 12.6810 | 12.6455 | 12.5991 | 12.5360 | 12.4546 | 12.3557 | 12.2447 | | | | |
| 14 | 13.7548 | 13.7047 | 13.6596 | 13.6196 | 13.5749 | 13.5191 | 13.4462 | 13.3557 | 13.2482 | 13.1275 | | | | |
| 15 | 14.7037 | 14.6492 | 14.5982 | 14.5491 | 14.4949 | 14.4293 | 14.3473 | 14.2482 | 14.1309 | 14.0011 | | | | |
| 16 | 15.6482 | 15.5878 | 15.5276 | 15.4690 | 15.4052 | 15.3304 | 15.2398 | 15.1309 | 15.0046 | 14.8660 | | | | |
| 17 | 16.5868 | 16.5173 | 16.4476 | 16.3793 | 16.3062 | 16.2229 | 16.1226 | 16.0046 | 15.8695 | 15.7220 | | | | |
| 18 | 17.5162 | 17.4372 | 17.3578 | 17.2804 | 17.1987 | 17.1057 | 16.9962 | 16.8695 | 16.7255 | 16.5695 | | | | |
| 19 | 18.4362 | 18.3475 | 18.2589 | 18.1728 | 18.0815 | 17.9793 | 17.8612 | 17.7255 | 17.5730 | 17.4090 | | | | |
| 20 | 19.3464 | 19.2486 | 19.1514 | 19.0556 | 18.9551 | 18.8443 | 18.7172 | 18.5730 | 18.4124 | 18.2400 | | | | |
| 21 | 20.2475 | 20.1411 | 20.0342 | 19.9293 | 19.8201 | 19.7003 | 19.5647 | 19.4124 | 19.2435 | 19.0624 | | | | |
| 22 | 21.1400 | 21.0238 | 20.9078 | 20.7942 | 20.6761 | 20.5478 | 20.4041 | 20.2435 | 20.0659 | 19.8766 | | | | |
| 23 | 22.0228 | 21.8975 | 21.7727 | 21.6502 | 21.5236 | 21.3872 | 21.2351 | 21.0659 | 20.8800 | 20.6822 | | | | |
| 24 | 22.8964 | 22.7624 | 22.6287 | 22.4977 | 22.3630 | 22.2182 | 22.0575 | 21.8800 | 21.6857 | 21.4798 | | | | |
| 25 | 23.7614 | 23.6184 | 23.4762 | 23.3371 | 23.1940 | 23.0406 | 22.8717 | 22.6857 | 22.4832 | 22.2694 | | | | |
| 30 | 27.9577 | 27.7729 | 27.5889 | 27.4079 | 27.2235 | 27.0293 | 26.8200 | 26.5945 | 26.3530 | 26.1004 | | | | |
| 35 | 31.9464 | 31.7213 | 31.4977 | 31.2777 | 31.0545 | 30.8221 | 30.5751 | 30.3122 | 30.0336 | 29.7445 | | | | |
| 40 | 35.7392 | 35.4763 | 35.2154 | 34.9583 | 34.6985 | 34.4299 | 34.1469 | 33.8484 | 33.5347 | 33.2107 | | | | |
| 45 | 39.3470 | 39.0482 | 38.7517 | 38.4594 | 38.1647 | 37.8615 | 37.5444 | 37.2121 | 36.8649 | 36.5077 | | | | |
| 50 | 42.7786 | 42.4457 | 42.1153 | 41.7896 | 41.4617 | 41.1258 | 40.7761 | 40.4117 | 40.0326 | 39.6438 | | | | |

Notes: <1> Data Based on Assumed DOS of Apr 1994.

<2> Tabulated Data Based on Criteria Contained in 18 Mar 91 Tri-Service Memorandum of Agreement on Criteria/Standards for EA/LCC for MILCON Design.

Data Based on Discount Rate of 3.1% and DOE Projections of Future Price Level Changes for Industrial Sector (NIST Annual Supplement to Handbook 135, Oct 1993).

<3> Region 1: ME, NH, VT, MA, CT, RI, NY, NJ, PA

Table E-3-NG-1. Present Worth Factors--Natural Gas

| Number of Payments | Beneficial Occupancy Date | | | | | | | | | | | | | | |
|--------------------|---------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|--|--|--|--|--|
| | Oct 1994 | Oct 1995 | Oct 1996 | Oct 1997 | Oct 1998 | Oct 1999 | Oct 2000 | Oct 2001 | Oct 2002 | Oct 2003 | | | | | |
| 1 | 0.9944 | 0.9841 | 0.9671 | 0.9573 | 0.9532 | 0.9533 | 0.9562 | 0.9608 | 0.9677 | 0.9717 | | | | | |
| 2 | 1.9785 | 1.9512 | 1.9244 | 1.9106 | 1.9065 | 1.9095 | 1.9170 | 1.9285 | 1.9394 | 1.9382 | | | | | |
| 3 | 2.9457 | 2.9085 | 2.8777 | 2.8638 | 2.8627 | 2.8702 | 2.8847 | 2.9002 | 2.9059 | 2.8900 | | | | | |
| 4 | 3.9030 | 3.8618 | 3.8309 | 3.8200 | 3.8235 | 3.8379 | 3.8564 | 3.8666 | 3.8577 | 3.8255 | | | | | |
| 5 | 4.8562 | 4.8150 | 4.7871 | 4.7808 | 4.7912 | 4.8097 | 4.8229 | 4.8184 | 4.7932 | 4.7471 | | | | | |
| 6 | 5.8095 | 5.7712 | 5.7479 | 5.7485 | 5.7629 | 5.7761 | 5.7746 | 5.7539 | 5.7148 | 5.6476 | | | | | |
| 7 | 6.7657 | 6.7320 | 6.7156 | 6.7202 | 6.7293 | 6.7279 | 6.7101 | 6.6756 | 6.6154 | 6.5232 | | | | | |
| 8 | 7.7264 | 7.6997 | 7.6873 | 7.6867 | 7.6811 | 7.6634 | 7.6318 | 7.5761 | 7.4909 | 7.3867 | | | | | |
| 9 | 8.6941 | 8.6714 | 8.6538 | 8.6384 | 8.6166 | 8.5851 | 8.5323 | 8.4517 | 8.3545 | 8.2469 | | | | | |
| 10 | 9.6659 | 9.6379 | 9.6055 | 9.5740 | 9.5383 | 9.4856 | 9.4079 | 9.3152 | 9.2146 | 9.1031 | | | | | |
| 11 | 10.6323 | 10.5897 | 10.5411 | 10.4956 | 10.4388 | 10.3611 | 10.2714 | 10.1754 | 10.0708 | 9.9548 | | | | | |
| 12 | 11.5841 | 11.5252 | 11.4627 | 11.3961 | 11.3144 | 11.2247 | 11.1316 | 11.0316 | 10.9225 | 10.8027 | | | | | |
| 13 | 12.5196 | 12.4468 | 12.3632 | 12.2717 | 12.1779 | 12.0848 | 11.9878 | 11.8833 | 11.7704 | 11.6469 | | | | | |
| 14 | 13.4413 | 13.3474 | 13.2388 | 13.1352 | 13.0381 | 12.9410 | 12.8395 | 12.7312 | 12.6146 | 12.4789 | | | | | |
| 15 | 14.3418 | 14.2229 | 14.1023 | 13.9954 | 13.8943 | 13.7928 | 13.6874 | 13.5754 | 13.4466 | 13.2914 | | | | | |
| 16 | 15.2173 | 15.0864 | 14.9625 | 14.8516 | 14.7460 | 14.6407 | 14.5316 | 14.4073 | 14.2591 | 14.0848 | | | | | |
| 17 | 16.0809 | 15.9466 | 15.8187 | 15.7033 | 15.5939 | 15.4848 | 15.3635 | 15.2198 | 15.0525 | 14.8590 | | | | | |
| 18 | 16.9410 | 16.8028 | 16.6704 | 16.5512 | 16.4381 | 16.3168 | 16.1760 | 16.0132 | 15.8267 | 15.6145 | | | | | |
| 19 | 17.7973 | 17.6545 | 17.5183 | 17.3954 | 17.2700 | 17.1293 | 16.9694 | 16.7875 | 16.5822 | 16.3522 | | | | | |
| 20 | 18.6490 | 18.5024 | 18.3625 | 18.2274 | 18.0825 | 17.9227 | 17.7437 | 17.5430 | 17.3199 | 17.0725 | | | | | |
| 21 | 19.4969 | 19.3466 | 19.1945 | 19.0398 | 18.8759 | 18.6970 | 18.4992 | 18.2807 | 18.0402 | 17.7757 | | | | | |
| 22 | 20.3410 | 20.1786 | 20.0070 | 19.8333 | 19.6502 | 19.4525 | 19.2369 | 19.0009 | 18.7434 | 18.4618 | | | | | |
| 23 | 21.1730 | 20.9911 | 20.8004 | 20.6075 | 20.4057 | 20.1901 | 19.9571 | 19.7041 | 19.4295 | 19.1311 | | | | | |
| 24 | 21.9855 | 21.7845 | 21.5746 | 21.3630 | 21.1434 | 20.9104 | 20.6603 | 20.3902 | 20.0988 | 19.7845 | | | | | |
| 25 | 22.7789 | 22.5587 | 22.3301 | 22.1007 | 21.8636 | 21.6136 | 21.3464 | 21.0596 | 20.7522 | 20.4224 | | | | | |
| 30 | 26.4698 | 26.1615 | 25.8467 | 25.5330 | 25.2135 | 24.8829 | 24.5374 | 24.1744 | 23.7927 | 23.3902 | | | | | |
| 35 | 29.7392 | 29.3525 | 28.9616 | 28.5735 | 28.1813 | 27.7798 | 27.3650 | 26.9344 | 26.4867 | 26.0197 | | | | | |
| 40 | 32.6360 | 32.1800 | 31.7215 | 31.2675 | 30.8109 | 30.3465 | 29.8703 | 29.3798 | 28.8736 | 28.3496 | | | | | |
| 45 | 35.2027 | 34.6853 | 34.1669 | 33.6544 | 33.1408 | 32.6206 | 32.0901 | 31.5465 | 30.9885 | 30.4140 | | | | | |
| 50 | 37.4768 | 36.9051 | 36.3337 | 35.7693 | 35.2051 | 34.6356 | 34.0569 | 33.4663 | 32.8624 | 32.2430 | | | | | |

Notes: <1> Data Based on Assumed DOS of Apr 1994.

<2> Authorized Period of Use of Table is Oct 1993 through Sep 1994.

<3> Tabulated Data Based on Criteria Contained in 18 Mar 91 Tri-Service Memorandum of Agreement on Criteria/Standards for EA/ICC for MILCON Design.

Data Based on Discount Rate of 3.1% and DOE Projections of Future Price Level Changes for Industrial Sector (NIST Annual Supplement to Handbook 135, Oct 1993).

<3> Region 1: ME, NH, VT, MA, CT, RI, NY, NJ, PA

Table E-3-SC-1. Present Worth Factors--Steam Coal

| Number of Payments | Beneficial Occupancy Date | | | | | | | | | | | | | | |
|--------------------------|---------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | Oct 1994 | Oct 1995 | Oct 1996 | Oct 1997 | Oct 1998 | Oct 1999 | Oct 2000 | Oct 2001 | Oct 2002 | Oct 2003 | Oct 2004 | Oct 2005 | Oct 2006 | Oct 2007 | Oct 2008 |
| 1 | 0.9822 | 0.9675 | 0.9529 | 0.9355 | 0.9209 | 0.9142 | 0.9047 | 0.8874 | 0.8727 | 0.8582 | | | | | |
| 2 | 1.9498 | 1.9204 | 1.8884 | 1.8564 | 1.8351 | 1.8189 | 1.7921 | 1.7602 | 1.7309 | 1.7018 | | | | | |
| 3 | 2.9027 | 2.8559 | 2.8093 | 2.7706 | 2.7398 | 2.7064 | 2.6649 | 2.6183 | 2.5746 | 2.5355 | | | | | |
| 4 | 3.8381 | 3.7768 | 3.7235 | 3.6753 | 3.6272 | 3.5791 | 3.5230 | 3.4620 | 3.4082 | 3.3590 | | | | | |
| 5 | 4.7590 | 4.6910 | 4.6282 | 4.5627 | 4.5000 | 4.4373 | 4.3667 | 4.2956 | 4.2317 | 4.1721 | | | | | |
| 6 | 5.6732 | 5.5957 | 5.5156 | 5.4355 | 5.3582 | 5.2809 | 5.2003 | 5.1191 | 5.0449 | 4.9788 | | | | | |
| 7 | 6.5780 | 6.4832 | 6.3884 | 6.2936 | 6.2018 | 6.1146 | 6.0238 | 5.9323 | 5.8516 | 5.7807 | | | | | |
| 8 | 7.4654 | 7.3559 | 7.2465 | 7.1373 | 7.0355 | 6.9381 | 6.8370 | 6.7390 | 6.6534 | 6.5717 | | | | | |
| 9 | 8.3381 | 8.2141 | 8.0902 | 7.9709 | 7.8590 | 7.7512 | 7.6437 | 7.5409 | 7.4444 | 7.3480 | | | | | |
| 10 | 9.1963 | 9.0577 | 8.9238 | 8.7944 | 8.6721 | 8.5579 | 8.4456 | 8.3318 | 8.2207 | 8.1116 | | | | | |
| 11 | 10.0400 | 9.8914 | 9.7473 | 9.6076 | 9.4788 | 9.3598 | 9.2365 | 9.1082 | 8.9844 | 8.8626 | | | | | |
| 12 | 10.8736 | 10.7149 | 10.5605 | 10.4143 | 10.2807 | 10.1508 | 10.0129 | 9.8718 | 9.7353 | 9.6010 | | | | | |
| 13 | 11.6971 | 11.5280 | 11.3672 | 11.2161 | 11.0717 | 10.9271 | 10.7765 | 10.6227 | 10.4737 | 10.3269 | | | | | |
| 14 | 12.5102 | 12.3347 | 12.1691 | 12.0071 | 11.8480 | 11.6907 | 11.5274 | 11.3611 | 11.1996 | 11.0419 | | | | | |
| 15 | 13.3169 | 13.1366 | 12.9600 | 12.7835 | 12.6116 | 12.4417 | 12.2658 | 12.0870 | 11.9146 | 11.7461 | | | | | |
| 16 | 14.1188 | 13.9276 | 13.7364 | 13.5471 | 13.3626 | 13.1801 | 12.9917 | 12.8020 | 12.6188 | 12.4379 | | | | | |
| 17 | 14.9098 | 14.7039 | 14.5000 | 14.2980 | 14.1010 | 13.9059 | 13.7067 | 13.5062 | 13.3107 | 13.1176 | | | | | |
| 18 | 15.6861 | 15.4675 | 15.2509 | 15.0364 | 14.8268 | 14.6210 | 14.4109 | 14.1981 | 13.9903 | 13.7851 | | | | | |
| 19 | 16.4497 | 16.2185 | 15.9893 | 15.7623 | 15.5419 | 15.3252 | 15.1028 | 14.8777 | 14.6578 | 14.4420 | | | | | |
| 20 | 17.2007 | 16.9569 | 16.7152 | 16.4773 | 16.2460 | 16.0170 | 15.7824 | 15.5453 | 15.3147 | 15.0883 | | | | | |
| 21 | 17.9391 | 17.6828 | 17.4302 | 17.1815 | 16.9379 | 16.6967 | 16.4500 | 16.2021 | 15.9610 | 15.7240 | | | | | |
| 22 | 18.6650 | 18.3978 | 18.1344 | 17.8734 | 17.6176 | 17.3642 | 17.1068 | 16.8484 | 16.5967 | 16.3491 | | | | | |
| 23 | 19.3800 | 19.1020 | 18.8263 | 18.5530 | 18.2851 | 18.0211 | 17.7531 | 17.4841 | 17.2219 | 16.9639 | | | | | |
| 24 | 20.0842 | 19.7938 | 19.5059 | 19.2206 | 18.9420 | 18.6673 | 18.3888 | 18.1093 | 17.8366 | 17.5682 | | | | | |
| 25 | 20.7760 | 20.4735 | 20.1735 | 19.8774 | 19.5882 | 19.3030 | 19.0140 | 18.7240 | 18.4409 | 18.1622 | | | | | |
| 30 | 24.0621 | 23.7050 | 23.3522 | 23.0037 | 22.6622 | 22.3251 | 21.9844 | 21.6433 | 21.3096 | 20.9810 | | | | | |
| 35 | 27.0841 | 26.6755 | 26.2715 | 25.8723 | 25.4810 | 25.0947 | 24.7058 | 24.3172 | 23.9369 | 23.5625 | | | | | |
| 40 | 29.8537 | 29.3968 | 28.9454 | 28.4996 | 28.0625 | 27.6312 | 27.1980 | 26.7660 | 26.3430 | 25.9266 | | | | | |
| 45 | 32.3902 | 31.8890 | 31.3942 | 30.9057 | 30.4266 | 29.9541 | 29.4804 | 29.0086 | 28.5465 | 28.0917 | | | | | |
| 50 | 34.7131 | 34.1715 | 33.6368 | 33.1092 | 32.5917 | 32.0814 | 31.5707 | 31.0624 | 30.5645 | 30.0745 | | | | | |

Notes: <1> Data Based on Assumed DOS of Apr 1994.

<2> Authorized Period of Use of Table is Oct 1993 through Sep 1994.

Tabulated Data Based on Criteria Contained in 18 Mar 91 Tri-Service Memorandum of Agreement on Criteria/Standards for EA/LCC for MILCON Design.

Data Based on Discount Rate of 3.1% and DOE Projections of Future Price Level Changes for Industrial Sector (NIST Annual Supplement to Handbook 135, Oct 1993).

<3> Region 1: ME, NH, VT, MA, CT, RI, NY, NJ, PA

Table E-3-LP-1. Present Worth Factors--Liquefied Petroleum Gas (LPG)

| Number of Payments | Beneficial Occupancy Date | | | | | | | | | | | | | | | | | | | |
|--------------------------|---------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|--|--|--|--|--|--|--|--|--|--|
| | Oct 1994 | Oct 1995 | Oct 1996 | Oct 1997 | Oct 1998 | Oct 1999 | Oct 2000 | Oct 2001 | Oct 2002 | Oct 2003 | | | | | | | | | | |
| 1 | 0.9586 | 0.9267 | 0.9053 | 0.8872 | 0.8723 | 0.8596 | 0.8472 | 0.8351 | 0.8226 | 0.8065 | | | | | | | | | | |
| 2 | 1.8853 | 1.8320 | 1.7925 | 1.7596 | 1.7320 | 1.7068 | 1.6823 | 1.6577 | 1.6291 | 1.5949 | | | | | | | | | | |
| 3 | 2.7906 | 2.7192 | 2.6649 | 2.6192 | 2.5792 | 2.5419 | 2.5049 | 2.4642 | 2.4175 | 2.3663 | | | | | | | | | | |
| 4 | 3.6779 | 3.5916 | 3.5245 | 3.4664 | 3.4142 | 3.3645 | 3.3113 | 3.2526 | 3.1889 | 3.1220 | | | | | | | | | | |
| 5 | 4.5502 | 4.4512 | 4.3717 | 4.3015 | 4.2368 | 4.1710 | 4.0998 | 4.0240 | 3.9447 | 3.8637 | | | | | | | | | | |
| 6 | 5.4098 | 5.2984 | 5.2067 | 5.1241 | 5.0433 | 4.9594 | 4.8712 | 4.7797 | 4.6863 | 4.5918 | | | | | | | | | | |
| 7 | 6.2570 | 6.1334 | 6.0294 | 5.9305 | 5.8318 | 5.7308 | 5.6269 | 5.5214 | 5.4144 | 5.3064 | | | | | | | | | | |
| 8 | 7.0921 | 6.9561 | 6.8358 | 6.7190 | 6.6031 | 6.4865 | 6.3686 | 6.2495 | 6.1290 | 6.0047 | | | | | | | | | | |
| 9 | 7.9147 | 7.7625 | 7.6243 | 7.4904 | 7.3589 | 7.2282 | 7.0967 | 6.9641 | 6.8273 | 6.6842 | | | | | | | | | | |
| 10 | 8.7212 | 8.5510 | 8.3957 | 8.2461 | 8.1006 | 7.9563 | 7.8113 | 7.6624 | 7.5068 | 7.3455 | | | | | | | | | | |
| 11 | 9.5096 | 9.3224 | 9.1514 | 8.9878 | 8.8286 | 8.6709 | 8.5096 | 8.3419 | 8.1682 | 7.9891 | | | | | | | | | | |
| 12 | 10.2810 | 10.0781 | 9.8931 | 9.7159 | 9.5432 | 9.3692 | 9.1891 | 9.0032 | 8.8117 | 8.6152 | | | | | | | | | | |
| 13 | 11.0367 | 10.8198 | 10.6212 | 10.4305 | 10.2415 | 10.0487 | 9.8504 | 9.6467 | 9.4378 | 9.2246 | | | | | | | | | | |
| 14 | 11.7784 | 11.5478 | 11.3357 | 11.1288 | 10.9210 | 10.7100 | 10.4939 | 10.2729 | 10.0473 | 9.8176 | | | | | | | | | | |
| 15 | 12.5065 | 12.2624 | 12.0341 | 11.8083 | 11.5824 | 11.3536 | 11.1201 | 10.8823 | 10.6402 | 10.3946 | | | | | | | | | | |
| 16 | 13.2211 | 12.9608 | 12.7135 | 12.4696 | 12.2259 | 11.9797 | 11.7295 | 11.4753 | 11.2172 | 10.9561 | | | | | | | | | | |
| 17 | 13.9194 | 13.6402 | 13.3749 | 13.1131 | 12.8520 | 12.5891 | 12.3225 | 12.0522 | 11.7787 | 11.5024 | | | | | | | | | | |
| 18 | 14.5989 | 14.3016 | 14.0184 | 13.7393 | 13.4615 | 13.1821 | 12.8994 | 12.6138 | 12.3250 | 12.0340 | | | | | | | | | | |
| 19 | 15.2602 | 14.9451 | 14.6446 | 14.3487 | 14.0545 | 13.7590 | 13.4610 | 13.1601 | 12.8566 | 12.5513 | | | | | | | | | | |
| 20 | 15.9038 | 15.5713 | 15.2540 | 14.9417 | 14.6314 | 14.3206 | 14.0073 | 13.6917 | 13.3739 | 13.0548 | | | | | | | | | | |
| 21 | 16.5299 | 16.1807 | 15.8470 | 15.5186 | 15.1929 | 14.8669 | 14.5389 | 14.2090 | 13.8774 | 13.5448 | | | | | | | | | | |
| 22 | 17.1393 | 16.7737 | 16.4239 | 16.0802 | 15.7393 | 15.3985 | 15.0562 | 14.7125 | 14.3674 | 14.0216 | | | | | | | | | | |
| 23 | 17.7323 | 17.3506 | 16.9854 | 16.6265 | 16.2708 | 15.9158 | 15.5597 | 15.2025 | 14.8442 | 14.4854 | | | | | | | | | | |
| 24 | 18.3092 | 17.9121 | 17.5318 | 17.1581 | 16.7881 | 16.4193 | 16.0497 | 15.6793 | 15.3080 | 14.9368 | | | | | | | | | | |
| 25 | 18.8708 | 18.4585 | 18.0633 | 17.6754 | 17.2916 | 16.9093 | 16.5265 | 16.1431 | 15.7594 | 15.3761 | | | | | | | | | | |
| 30 | 21.4595 | 20.9776 | 20.5148 | 20.0609 | 19.6129 | 19.1681 | 18.7245 | 18.2822 | 17.8411 | 17.4020 | | | | | | | | | | |
| 35 | 23.7183 | 23.1757 | 22.6539 | 22.1426 | 21.6388 | 21.1396 | 20.6431 | 20.1494 | 19.6582 | 19.1703 | | | | | | | | | | |
| 40 | 25.6898 | 25.0943 | 24.5210 | 23.9597 | 23.4071 | 22.8605 | 22.3179 | 21.7792 | 21.2443 | 20.7138 | | | | | | | | | | |
| 45 | 27.4107 | 26.7691 | 26.1508 | 25.5458 | 24.9507 | 24.3626 | 23.7797 | 23.2018 | 22.6287 | 22.0611 | | | | | | | | | | |
| 50 | 28.9128 | 28.2309 | 27.5734 | 26.9302 | 26.2980 | 25.6738 | 25.0557 | 24.4435 | 23.8372 | 23.2371 | | | | | | | | | | |

Notes: <1> Data Based on Assumed DOS of Apr 1994.

<2> Authorized Period of Use of Table is Oct 1993 through Sep 1994.

<3> Tabulated Data Based on Criteria Contained in 18 Mar 91 Tri-Service Memorandum of Agreement on Criteria/Standards for EA/LCC for MILCON Design.

Data Based on Discount Rate of 3.1% and DOE Projections of Future Price Level Changes for Residential Sector (NIST Annual Supplement to Handbook 135, Oct 1993).

<3> Region 1: ME, NH, VT, MA, CT, RI, NY, NJ, PA

Table E-3-EL-2. Present Worth Factors--Electricity

| Number of Payments | Beneficial Occupancy Date | | | | | | | | | | | | | | |
|--------------------|---------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|--|--|--|--|--|
| | Oct 1994 | Oct 1995 | Oct 1996 | Oct 1997 | Oct 1998 | Oct 1999 | Oct 2000 | Oct 2001 | Oct 2002 | Oct 2003 | | | | | |
| 1 | 0.9671 | 0.9362 | 0.9015 | 0.8726 | 0.8503 | 0.8315 | 0.8102 | 0.7861 | 0.7662 | 0.7499 | | | | | |
| 2 | 1.9033 | 1.8376 | 1.7741 | 1.7230 | 1.6819 | 1.6418 | 1.5964 | 1.5523 | 1.5161 | 1.4812 | | | | | |
| 3 | 2.8047 | 2.7103 | 2.6244 | 2.5545 | 2.4921 | 2.4279 | 2.3626 | 2.3022 | 2.2474 | 2.1921 | | | | | |
| 4 | 3.6774 | 3.5606 | 3.4560 | 3.3647 | 3.2782 | 3.1941 | 3.1125 | 3.0336 | 2.9583 | 2.8830 | | | | | |
| 5 | 4.5277 | 4.3921 | 4.2662 | 4.1509 | 4.0444 | 3.9440 | 3.8438 | 3.7445 | 3.6492 | 3.5546 | | | | | |
| 6 | 5.3592 | 5.2024 | 5.0523 | 4.9171 | 4.7943 | 4.6753 | 4.5547 | 4.4353 | 4.3208 | 4.2053 | | | | | |
| 7 | 6.1695 | 5.9885 | 5.8185 | 5.6670 | 5.5256 | 5.3862 | 5.2456 | 5.1069 | 4.9715 | 4.8359 | | | | | |
| 8 | 6.9556 | 6.7547 | 6.5684 | 6.3983 | 6.2366 | 6.0771 | 5.9171 | 5.7577 | 5.6021 | 5.4497 | | | | | |
| 9 | 7.7218 | 7.5046 | 7.2997 | 7.1092 | 6.9274 | 6.7487 | 6.5679 | 6.3883 | 6.2159 | 6.0471 | | | | | |
| 10 | 8.4717 | 8.2359 | 8.0107 | 7.8001 | 7.5990 | 7.3994 | 7.1985 | 7.0020 | 6.8133 | 6.6285 | | | | | |
| 11 | 9.2030 | 8.9468 | 8.7015 | 8.4716 | 8.2498 | 8.0300 | 7.8123 | 7.5994 | 7.3947 | 7.1944 | | | | | |
| 12 | 9.9139 | 9.6377 | 9.3731 | 9.1224 | 8.8803 | 8.6438 | 8.4097 | 8.1809 | 7.9606 | 7.7452 | | | | | |
| 13 | 10.6048 | 10.3093 | 10.0239 | 9.7530 | 9.4941 | 9.2412 | 8.9911 | 8.7468 | 8.5114 | 8.2813 | | | | | |
| 14 | 11.2764 | 10.9600 | 10.6545 | 10.3668 | 10.0915 | 9.8226 | 9.5570 | 9.2975 | 9.0475 | 8.8030 | | | | | |
| 15 | 11.9271 | 11.5906 | 11.2682 | 10.9641 | 10.6729 | 10.3885 | 10.1078 | 9.8336 | 9.5692 | 9.3109 | | | | | |
| 16 | 12.5577 | 12.2044 | 11.8656 | 11.5456 | 11.2388 | 10.9393 | 10.6438 | 10.3553 | 10.0771 | 9.8052 | | | | | |
| 17 | 13.1715 | 12.8018 | 12.4470 | 12.1115 | 11.7896 | 11.4754 | 11.1655 | 10.8632 | 10.5714 | 10.2863 | | | | | |
| 18 | 13.7689 | 13.3832 | 13.0130 | 12.6623 | 12.3257 | 11.9971 | 11.6734 | 11.3575 | 11.0525 | 10.7546 | | | | | |
| 19 | 14.3503 | 13.9491 | 13.5637 | 13.1983 | 12.8474 | 12.5050 | 12.1678 | 11.8386 | 11.5208 | 11.2104 | | | | | |
| 20 | 14.9162 | 14.4999 | 14.0998 | 13.7200 | 13.3553 | 12.9993 | 12.6488 | 12.3069 | 11.9766 | 11.6539 | | | | | |
| 21 | 15.4670 | 15.0360 | 14.6215 | 14.2279 | 13.8496 | 13.4804 | 13.1171 | 12.7627 | 12.4201 | 12.0857 | | | | | |
| 22 | 16.0030 | 15.5577 | 15.1294 | 14.7222 | 14.3307 | 13.9487 | 13.5729 | 13.2062 | 12.8519 | 12.5060 | | | | | |
| 23 | 16.5248 | 16.0656 | 15.6237 | 15.2033 | 14.7990 | 14.4045 | 14.0165 | 13.6380 | 13.2722 | 12.9151 | | | | | |
| 24 | 17.0327 | 16.5599 | 16.1048 | 15.6716 | 15.2548 | 14.8480 | 14.4482 | 14.0583 | 13.6813 | 13.3133 | | | | | |
| 25 | 17.5270 | 17.0410 | 16.5731 | 16.1274 | 15.6983 | 15.2798 | 14.8686 | 14.4675 | 14.0795 | 13.7008 | | | | | |
| 30 | 19.8075 | 19.2607 | 18.7337 | 18.2304 | 17.7452 | 17.2720 | 16.8076 | 16.3547 | 15.9164 | 15.4888 | | | | | |
| 35 | 21.7997 | 21.1997 | 20.6209 | 20.0673 | 19.5332 | 19.0125 | 18.5018 | 18.0038 | 17.5216 | 17.0513 | | | | | |
| 40 | 23.5402 | 22.8939 | 22.2700 | 21.6725 | 21.0957 | 20.5334 | 19.9822 | 19.4449 | 18.9244 | 18.4167 | | | | | |
| 45 | 25.0611 | 24.3743 | 23.7111 | 23.0752 | 22.4611 | 21.8625 | 21.2759 | 20.7041 | 20.1501 | 19.6099 | | | | | |
| 50 | 26.3902 | 25.6680 | 24.9703 | 24.3010 | 23.6543 | 23.0239 | 22.4064 | 21.8046 | 21.2213 | 20.6525 | | | | | |

Notes: <1> Data Based on Assumed DOS of Apr 1994.

<2> Authorized Period of Use of Table is Oct 1993 through Sep 1994.

<3> Tabulated Data Based on Criteria Contained in 18 Mar 91 Tri-Service Memorandum of Agreement on Criteria/Standards for EA/LCC for MILCON Design.

Data Based on Discount Rate of 3.1% and DOE Projections of Future Price Level Changes for Industrial Sector (NIST Annual Supplement to Handbook 135, Oct 1993).

<3> Region 2: OH, IN, IL, MI, WI, MN, IA, MO, ND, SD, NE, KS

Table E-3-DO-2. Present Worth Factors--Distillate Oil

| Number Of Payments | Beneficial Occupancy Date | | | | | | | | | | | | | | |
|--------------------------|---------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|--|--|--|--|--|
| | Oct 1994 | Oct 1995 | Oct 1996 | Oct 1997 | Oct 1998 | Oct 1999 | Oct 2000 | Oct 2001 | Oct 2002 | Oct 2003 | | | | | |
| 1 | 0.9709 | 0.9473 | 0.9315 | 0.9210 | 0.9155 | 0.9135 | 0.9118 | 0.9100 | 0.9061 | 0.8942 | | | | | |
| 2 | 1.9182 | 1.8788 | 1.8525 | 1.8365 | 1.8290 | 1.8253 | 1.8218 | 1.8161 | 1.8003 | 1.7729 | | | | | |
| 3 | 2.8497 | 2.7998 | 2.7680 | 2.7500 | 2.7408 | 2.7353 | 2.7278 | 2.7103 | 2.6790 | 2.6376 | | | | | |
| 4 | 3.7707 | 3.7153 | 3.6815 | 3.6618 | 3.6508 | 3.6414 | 3.6220 | 3.5890 | 3.5436 | 3.4902 | | | | | |
| 5 | 4.6862 | 4.6288 | 4.5933 | 4.5718 | 4.5568 | 4.5356 | 4.5007 | 4.4536 | 4.3963 | 4.3328 | | | | | |
| 6 | 5.5997 | 5.5406 | 5.5033 | 5.4779 | 5.4511 | 5.4143 | 5.3654 | 5.3063 | 5.2389 | 5.1664 | | | | | |
| 7 | 6.5115 | 6.4506 | 6.4093 | 6.3721 | 6.3298 | 6.2789 | 6.2181 | 6.1489 | 6.0724 | 5.9907 | | | | | |
| 8 | 7.4215 | 7.3566 | 7.3036 | 7.2508 | 7.1944 | 7.1316 | 7.0606 | 6.9824 | 6.8968 | 6.8004 | | | | | |
| 9 | 8.3275 | 8.2509 | 8.1823 | 8.1154 | 8.0471 | 7.9742 | 7.8942 | 7.8068 | 7.7064 | 7.5902 | | | | | |
| 10 | 9.2217 | 9.1295 | 9.0469 | 8.9681 | 8.8896 | 8.8077 | 8.7185 | 8.6164 | 8.4963 | 8.3614 | | | | | |
| 11 | 10.1004 | 9.9942 | 9.8996 | 9.8107 | 9.7232 | 9.6321 | 9.5282 | 9.4063 | 9.2675 | 9.1142 | | | | | |
| 12 | 10.9651 | 10.8469 | 10.7422 | 10.6442 | 10.5476 | 10.4417 | 10.3181 | 10.1774 | 10.0203 | 9.8491 | | | | | |
| 13 | 11.8178 | 11.6894 | 11.5757 | 11.4686 | 11.3572 | 11.2316 | 11.0892 | 10.9302 | 10.7551 | 10.5664 | | | | | |
| 14 | 12.6603 | 12.5230 | 12.4001 | 12.2782 | 12.1471 | 12.0027 | 11.8420 | 11.6651 | 11.4725 | 11.2666 | | | | | |
| 15 | 13.4939 | 13.3474 | 13.2097 | 13.0681 | 12.9182 | 12.7555 | 12.5769 | 12.3825 | 12.1727 | 11.9501 | | | | | |
| 16 | 14.3183 | 14.1570 | 13.9996 | 13.8392 | 13.6710 | 13.4904 | 13.2942 | 13.0827 | 12.8561 | 12.6171 | | | | | |
| 17 | 15.1279 | 14.9469 | 14.7707 | 14.5920 | 14.4059 | 14.2078 | 13.9944 | 13.7661 | 13.5232 | 13.2686 | | | | | |
| 18 | 15.9178 | 15.7180 | 15.5235 | 15.3269 | 15.1232 | 14.9080 | 14.6779 | 14.4332 | 14.1747 | 13.9044 | | | | | |
| 19 | 16.6889 | 16.4708 | 16.2584 | 16.0443 | 15.8234 | 15.5914 | 15.3449 | 15.0847 | 14.8105 | 14.5249 | | | | | |
| 20 | 17.4417 | 17.2057 | 16.9757 | 16.7445 | 16.5069 | 16.2585 | 15.9964 | 15.7205 | 15.4310 | 15.1309 | | | | | |
| 21 | 18.1766 | 17.9230 | 17.6759 | 17.4279 | 17.1739 | 16.9100 | 16.6323 | 16.3410 | 16.0370 | 15.7222 | | | | | |
| 22 | 18.8939 | 18.6232 | 18.3594 | 18.0950 | 17.8254 | 17.5458 | 17.2528 | 16.9469 | 16.6283 | 16.2992 | | | | | |
| 23 | 19.5941 | 19.3067 | 19.0264 | 18.7465 | 18.4613 | 18.1663 | 17.8587 | 17.5382 | 17.2053 | 16.8626 | | | | | |
| 24 | 20.2776 | 19.9737 | 19.6779 | 19.3823 | 19.0818 | 18.7723 | 18.4500 | 18.1152 | 17.7686 | 17.4126 | | | | | |
| 25 | 20.9446 | 20.6252 | 20.3138 | 20.0028 | 19.6877 | 19.3636 | 19.0270 | 18.6786 | 18.3187 | 17.9497 | | | | | |
| 30 | 24.0497 | 23.6558 | 23.2719 | 22.8905 | 22.5065 | 22.1150 | 21.7127 | 21.2996 | 20.8762 | 20.4448 | | | | | |
| 35 | 26.8012 | 26.3415 | 25.8929 | 25.4480 | 25.0017 | 24.5493 | 24.0876 | 23.6167 | 23.1367 | 22.6502 | | | | | |
| 40 | 29.2355 | 28.7164 | 28.2099 | 27.7085 | 27.2071 | 26.7009 | 26.1868 | 25.6646 | 25.1347 | 24.5995 | | | | | |
| 45 | 31.3871 | 30.8156 | 30.2579 | 29.7065 | 29.1564 | 28.6027 | 28.0421 | 27.4747 | 26.9007 | 26.3224 | | | | | |
| 50 | 33.2889 | 32.6709 | 32.0680 | 31.4725 | 30.8793 | 30.2836 | 29.6820 | 29.0747 | 28.4616 | 27.8453 | | | | | |

Notes: <1> Data Based on Assumed DOS of Apr 1994.

Authorized Period of Use of Table is Oct 1993 through Sep 1994.

<2> Tabulated Data Based on Criteria Contained in 18 Mar 91 Tri-Service Memorandum of Agreement on Criteria/Standards for EA/LCC for MILCON Design.

Data Based on Discount Rate of 3.1% and DOE Projections of Future Price Level Changes for Industrial Sector (NIST Annual Supplement to Handbook 135, Oct 1993).

<3> Region 2: OH, IN, IL, MI, WI, MN, IA, MO, ND, SD, NE, KS

Table E-3-RO-2. Present Worth Factors--Residual Oil

| Number Of Payments | Beneficial Occupancy Date | | | | | | | | | |
|--------------------------|---------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | Oct 1994 | Oct 1995 | Oct 1996 | Oct 1997 | Oct 1998 | Oct 1999 | Oct 2000 | Oct 2001 | Oct 2002 | Oct 2003 |
| 1 | 1.0016 | 0.9942 | 0.9831 | 0.9809 | 0.9867 | 0.9971 | 1.0074 | 1.0174 | 1.0248 | 1.0194 |
| 2 | 1.9959 | 1.9773 | 1.9640 | 1.9676 | 1.9838 | 2.0044 | 2.0248 | 2.0422 | 2.0441 | 2.0253 |
| 3 | 2.9598 | 2.9582 | 2.9507 | 2.9646 | 2.9911 | 3.0218 | 3.0495 | 3.0615 | 3.0501 | 3.0200 |
| 4 | 3.9598 | 3.9449 | 3.9477 | 3.9720 | 4.0086 | 4.0466 | 4.0689 | 4.0675 | 4.0448 | 4.0068 |
| 5 | 4.9465 | 4.9420 | 4.9551 | 4.9894 | 5.0333 | 5.0660 | 5.0748 | 5.0622 | 5.0315 | 4.9885 |
| 6 | 5.9436 | 5.9493 | 5.9725 | 6.0142 | 6.0527 | 6.0719 | 6.0695 | 6.0489 | 6.0132 | 5.9668 |
| 7 | 6.9510 | 6.9667 | 6.9973 | 7.0335 | 7.0586 | 7.0666 | 7.0563 | 7.0306 | 6.9915 | 6.9420 |
| 8 | 7.9684 | 7.9915 | 8.0167 | 8.0395 | 8.0533 | 8.0534 | 8.0380 | 8.0089 | 7.9667 | 7.9114 |
| 9 | 8.9931 | 9.0109 | 9.0226 | 9.0342 | 9.0401 | 9.0351 | 9.0163 | 8.9841 | 8.9362 | 8.8706 |
| 10 | 10.0125 | 10.0168 | 10.0173 | 10.0209 | 10.0218 | 10.0134 | 9.9915 | 9.9536 | 9.8954 | 9.8201 |
| 11 | 11.0184 | 11.0115 | 11.0040 | 11.0026 | 11.0001 | 10.9886 | 10.9610 | 10.9128 | 10.8449 | 10.7607 |
| 12 | 12.0132 | 11.9983 | 11.9858 | 11.9809 | 11.9753 | 11.9580 | 11.9201 | 11.8623 | 11.7855 | 11.6912 |
| 13 | 12.9999 | 12.9800 | 12.9640 | 12.9561 | 12.9447 | 12.9172 | 12.8697 | 12.8029 | 12.7159 | 12.6120 |
| 14 | 13.9816 | 13.9583 | 13.9393 | 13.9256 | 13.9039 | 13.8667 | 13.8103 | 13.7333 | 13.6368 | 13.5240 |
| 15 | 14.9599 | 14.9335 | 14.9087 | 14.8848 | 14.8534 | 14.8073 | 14.7407 | 14.6542 | 14.5487 | 14.4266 |
| 16 | 15.9351 | 15.9029 | 15.8679 | 15.8343 | 15.7941 | 15.7378 | 15.6616 | 15.5661 | 15.4514 | 15.3198 |
| 17 | 16.9046 | 16.8621 | 16.8174 | 16.7749 | 16.7245 | 16.6586 | 16.5735 | 16.4688 | 16.3446 | 16.2040 |
| 18 | 17.8637 | 17.8116 | 17.7580 | 17.7053 | 17.6454 | 17.5706 | 17.4762 | 17.3620 | 17.2287 | 17.0796 |
| 19 | 18.8133 | 18.7522 | 18.6884 | 18.6262 | 18.5573 | 18.4732 | 18.3693 | 18.2461 | 18.1044 | 17.9465 |
| 20 | 19.7539 | 19.6827 | 19.6093 | 19.5381 | 19.4600 | 19.3664 | 19.2535 | 19.1218 | 18.9713 | 18.8044 |
| 21 | 20.6843 | 20.6035 | 20.5212 | 20.4408 | 20.3531 | 20.2506 | 20.1292 | 19.9887 | 19.8291 | 19.6536 |
| 22 | 21.6052 | 21.5155 | 21.4239 | 21.3340 | 21.2373 | 21.1262 | 20.9961 | 20.8465 | 20.6783 | 20.4940 |
| 23 | 22.5171 | 22.4181 | 22.3171 | 22.2181 | 22.1130 | 21.9931 | 21.8539 | 21.6958 | 21.5187 | 21.3259 |
| 24 | 23.4198 | 23.3113 | 23.2013 | 23.0938 | 22.9798 | 22.8510 | 22.7031 | 22.5361 | 22.3506 | 22.1497 |
| 25 | 24.3129 | 24.1955 | 24.0769 | 23.9607 | 23.8377 | 23.7002 | 23.5435 | 23.3680 | 23.1745 | 22.9652 |
| 30 | 28.6467 | 28.4855 | 28.3232 | 28.1639 | 27.9985 | 27.8188 | 27.6204 | 27.4036 | 27.1686 | 26.9183 |
| 35 | 32.7653 | 32.5624 | 32.3587 | 32.1580 | 31.9516 | 31.7315 | 31.4931 | 31.2368 | 30.9627 | 30.6736 |
| 40 | 36.6780 | 36.4351 | 36.1919 | 35.9521 | 35.7069 | 35.4484 | 35.1721 | 34.8782 | 34.5669 | 34.2410 |
| 45 | 40.3949 | 40.1141 | 39.8333 | 39.5563 | 39.2743 | 38.9794 | 38.6670 | 38.3374 | 37.9907 | 37.6299 |
| 50 | 43.9259 | 43.6090 | 43.2925 | 42.9801 | 42.6632 | 42.3337 | 41.9870 | 41.6235 | 41.2433 | 40.8492 |

Notes: <1> Data Based on Assumed DOS of Apr 1994.

<2> Authorized Period of Use of Table is Oct 1993 through Sep 1994.

<3> Tabulated Data Based on Criteria Contained in 18 Mar 91 Tri-Service Memorandum of Agreement on Criteria/Standards for EA/LCC for MILCON Design.

Data Based on Discount Rate of 3.1% and DOE Projections of Future Price Level Changes for Industrial Sector (NIST Annual Supplement to Handbook 135, Oct 1993).

<3> Region 2: OH, IN, IL, MI, WI, MN, IA, MO, ND, SD, NE, KS

Table E-3-NG-2. Present Worth Factors--Natural Gas

| Number of Payments | Beneficial Occupancy Date | | | | | | | | | | | | | | |
|--------------------|---------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|--|--|--|--|--|
| | Oct 1994 | Oct 1995 | Oct 1996 | Oct 1997 | Oct 1998 | Oct 1999 | Oct 2000 | Oct 2001 | Oct 2002 | Oct 2003 | | | | | |
| 1 | 0.9970 | 0.9874 | 0.9705 | 0.9626 | 0.9598 | 0.9616 | 0.9666 | 0.9733 | 0.9836 | 0.9897 | | | | | |
| 2 | 1.9844 | 1.9579 | 1.9331 | 1.9225 | 1.9214 | 1.9282 | 1.9398 | 1.9568 | 1.9732 | 1.9751 | | | | | |
| 3 | 2.9549 | 2.9205 | 2.8929 | 2.8840 | 2.8880 | 2.9014 | 2.9234 | 2.9465 | 2.9586 | 2.9467 | | | | | |
| 4 | 3.9175 | 3.8804 | 3.8545 | 3.8506 | 3.8613 | 3.8850 | 3.9131 | 3.9319 | 3.9303 | 3.9020 | | | | | |
| 5 | 4.8774 | 4.8420 | 4.8211 | 4.8239 | 4.8448 | 4.8747 | 4.8985 | 4.9036 | 4.8856 | 4.8434 | | | | | |
| 6 | 5.8390 | 5.8085 | 5.7944 | 5.8075 | 5.8345 | 5.8601 | 5.8701 | 5.8588 | 5.8270 | 5.7638 | | | | | |
| 7 | 6.8055 | 6.7818 | 6.7779 | 6.7971 | 6.8199 | 6.8317 | 6.8254 | 6.8003 | 6.7474 | 6.6589 | | | | | |
| 8 | 7.7788 | 7.7654 | 7.7676 | 7.7825 | 7.7916 | 7.7870 | 7.7668 | 7.7207 | 7.6425 | 7.5414 | | | | | |
| 9 | 8.7624 | 8.7550 | 8.7530 | 8.7542 | 8.7468 | 8.7284 | 8.6872 | 8.6157 | 8.5249 | 8.4200 | | | | | |
| 10 | 9.7520 | 9.7404 | 9.7247 | 9.7094 | 9.6883 | 9.6488 | 9.5823 | 9.4982 | 9.4036 | 9.2950 | | | | | |
| 11 | 10.7374 | 10.7121 | 10.6799 | 10.6509 | 10.6087 | 10.5439 | 10.4648 | 10.3769 | 10.2786 | 10.1658 | | | | | |
| 12 | 11.7091 | 11.6674 | 11.6214 | 11.5713 | 11.5038 | 11.4264 | 11.3434 | 11.2519 | 11.1494 | 11.0324 | | | | | |
| 13 | 12.6644 | 12.6088 | 12.5418 | 12.4664 | 12.3862 | 12.3050 | 12.2184 | 12.1226 | 12.0160 | 11.8951 | | | | | |
| 14 | 13.6058 | 13.5292 | 13.4368 | 13.3488 | 13.2649 | 13.1800 | 13.0892 | 12.9893 | 12.8787 | 12.7539 | | | | | |
| 15 | 14.5262 | 14.4243 | 14.3193 | 14.2275 | 14.1399 | 14.0508 | 13.9559 | 13.8520 | 13.7375 | 13.6089 | | | | | |
| 16 | 15.4213 | 15.3067 | 15.1979 | 15.1025 | 15.0106 | 14.9174 | 14.8185 | 14.7108 | 14.5924 | 14.4571 | | | | | |
| 17 | 16.3037 | 16.1854 | 16.0729 | 15.9732 | 15.8773 | 15.7801 | 15.6773 | 15.5657 | 15.4407 | 15.2907 | | | | | |
| 18 | 17.1824 | 17.0604 | 16.9437 | 16.8399 | 16.7400 | 16.6389 | 16.5323 | 16.4139 | 16.2743 | 16.1044 | | | | | |
| 19 | 18.0574 | 17.9312 | 17.8104 | 17.7026 | 17.5988 | 17.4939 | 17.3805 | 17.2476 | 17.0879 | 16.8984 | | | | | |
| 20 | 18.9281 | 18.7978 | 18.6731 | 18.5614 | 18.4537 | 18.3421 | 18.2142 | 18.0612 | 17.8820 | 17.6738 | | | | | |
| 21 | 19.7948 | 19.6605 | 19.5319 | 19.4163 | 19.3019 | 19.1757 | 19.0278 | 18.8552 | 18.6573 | 18.4304 | | | | | |
| 22 | 20.6575 | 20.5193 | 20.3868 | 20.2645 | 20.1356 | 19.9894 | 19.8218 | 19.6306 | 19.4140 | 19.1688 | | | | | |
| 23 | 21.5163 | 21.3742 | 21.2350 | 21.0982 | 20.9492 | 20.7834 | 20.5972 | 20.3873 | 20.1523 | 19.8897 | | | | | |
| 24 | 22.3712 | 22.2225 | 22.0687 | 21.9118 | 21.7432 | 21.5588 | 21.3538 | 21.1256 | 20.8733 | 20.5936 | | | | | |
| 25 | 23.2194 | 23.0561 | 22.8823 | 22.7058 | 22.5186 | 22.3154 | 22.0922 | 21.8465 | 21.5771 | 21.2808 | | | | | |
| 30 | 27.1928 | 26.9341 | 26.6676 | 26.4010 | 26.1256 | 25.8363 | 25.5288 | 25.2004 | 24.8498 | 24.4736 | | | | | |
| 35 | 30.7136 | 30.3708 | 30.0215 | 29.6737 | 29.3185 | 28.9513 | 28.5679 | 28.1654 | 27.7424 | 27.2957 | | | | | |
| 40 | 33.8286 | 33.4098 | 32.9865 | 32.5663 | 32.1406 | 31.7045 | 31.2540 | 30.7860 | 30.2991 | 29.7901 | | | | | |
| 45 | 36.5819 | 36.0959 | 35.6071 | 35.1230 | 34.6349 | 34.1381 | 33.6281 | 33.1023 | 32.5589 | 31.9948 | | | | | |
| 50 | 39.0154 | 38.4701 | 37.9233 | 37.3828 | 36.8396 | 36.2890 | 35.7266 | 35.1496 | 34.5563 | 33.9434 | | | | | |

Notes: <1> Data Based on Assumed DOS of Apr 1994.

<2> Authorized Period of Use of Table is Oct 1993 through Sep 1994.
 Tabulated Data Based on Criteria Contained in 18 Mar 91 Tri-Service Memorandum of Agreement on Criteria/Standards for EA/LCC for MILCON Design.
 Data Based on Discount Rate of 3.1% and DOE Projections of Future Price Level Changes for Industrial Sector (NIST Annual Supplement to Handbook 135, Oct 1993).

<3> Region 2: OH, IN, IL, MI, WI, MN, IA, MO, ND, SD, NE, KS

Table E-3-SC-2. Present Worth Factors--Steam Coal

| Number of Payments | Beneficial Occupancy Date | | | | | | | | | | | | | |
|--------------------|---------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|--|--|--|--|
| | Oct 1994 | Oct 1995 | Oct 1996 | Oct 1997 | Oct 1998 | Oct 1999 | Oct 2000 | Oct 2001 | Oct 2002 | Oct 2003 | | | | |
| 1 | 0.9838 | 0.9643 | 0.9451 | 0.9230 | 0.9014 | 0.8891 | 0.8768 | 0.8616 | 0.8439 | 0.8264 | | | | |
| 2 | 1.9481 | 1.9094 | 1.8681 | 1.8244 | 1.7905 | 1.7659 | 1.7385 | 1.7055 | 1.6703 | 1.6382 | | | | |
| 3 | 2.8932 | 2.8324 | 2.7694 | 2.7135 | 2.6673 | 2.6276 | 2.5823 | 2.5319 | 2.4820 | 2.4403 | | | | |
| 4 | 3.8162 | 3.7337 | 3.6585 | 3.5903 | 3.5283 | 3.4714 | 3.4087 | 3.3437 | 3.2842 | 3.2376 | | | | |
| 5 | 4.7175 | 4.6228 | 4.5353 | 4.4519 | 4.3728 | 4.2978 | 4.2205 | 4.1458 | 4.0815 | 4.0272 | | | | |
| 6 | 5.6066 | 5.4996 | 5.3970 | 5.2958 | 5.1992 | 5.1096 | 5.0226 | 4.9431 | 4.8711 | 4.8066 | | | | |
| 7 | 6.4834 | 6.3613 | 6.2409 | 6.1222 | 6.0109 | 5.9117 | 5.8199 | 5.7327 | 5.6505 | 5.5757 | | | | |
| 8 | 7.3451 | 7.2052 | 7.0673 | 6.9339 | 6.8131 | 6.7090 | 6.6095 | 6.5121 | 6.4196 | 6.3324 | | | | |
| 9 | 8.1890 | 8.0316 | 7.8790 | 7.7361 | 7.6104 | 7.4986 | 7.3889 | 7.2813 | 7.1763 | 7.0766 | | | | |
| 10 | 9.0154 | 8.8433 | 8.6812 | 8.5334 | 8.4000 | 8.2780 | 8.1581 | 8.0379 | 7.9205 | 7.8084 | | | | |
| 11 | 9.8271 | 9.6455 | 9.4784 | 9.3230 | 9.1794 | 9.0472 | 8.9147 | 8.7821 | 8.6523 | 8.5280 | | | | |
| 12 | 10.6293 | 10.4427 | 10.2680 | 10.1024 | 9.9485 | 9.8038 | 9.6589 | 9.5140 | 9.3718 | 9.2353 | | | | |
| 13 | 11.4265 | 11.2323 | 11.0475 | 10.8715 | 10.7052 | 10.5480 | 10.3908 | 10.2335 | 10.0791 | 9.9304 | | | | |
| 14 | 12.2161 | 12.0118 | 11.8166 | 11.6282 | 11.4494 | 11.2799 | 11.1103 | 10.9408 | 10.7743 | 10.6135 | | | | |
| 15 | 12.9956 | 12.7809 | 12.5733 | 12.3724 | 12.1812 | 11.9994 | 11.8176 | 11.6359 | 11.4574 | 11.2846 | | | | |
| 16 | 13.7647 | 13.5376 | 13.3175 | 13.1042 | 12.9007 | 12.7067 | 12.5127 | 12.3190 | 12.1285 | 11.9456 | | | | |
| 17 | 14.5214 | 14.2818 | 14.0493 | 13.8237 | 13.6080 | 13.4018 | 13.1958 | 12.9902 | 12.7895 | 12.5963 | | | | |
| 18 | 15.2656 | 15.0136 | 14.7688 | 14.5310 | 14.3032 | 14.0849 | 13.8670 | 13.6511 | 13.4402 | 13.2354 | | | | |
| 19 | 15.9974 | 15.7331 | 15.4761 | 15.2262 | 14.9863 | 14.7561 | 14.5279 | 14.3019 | 14.0793 | 13.8628 | | | | |
| 20 | 16.7169 | 16.4404 | 16.1713 | 15.9093 | 15.6574 | 15.4170 | 15.1787 | 14.9409 | 14.7067 | 14.4802 | | | | |
| 21 | 17.4242 | 17.1356 | 16.8544 | 16.5804 | 16.3184 | 16.0678 | 15.8177 | 15.5683 | 15.3240 | 15.0876 | | | | |
| 22 | 18.1194 | 17.8187 | 17.5255 | 17.2414 | 16.9691 | 16.7068 | 16.4451 | 16.1857 | 15.9314 | 15.6850 | | | | |
| 23 | 18.8025 | 18.4898 | 18.1864 | 17.8921 | 17.6082 | 17.3342 | 17.0625 | 16.7931 | 16.5289 | 16.2726 | | | | |
| 24 | 19.4736 | 19.1507 | 18.8372 | 18.5312 | 18.2356 | 17.9516 | 17.6699 | 17.3905 | 17.1164 | 16.8503 | | | | |
| 25 | 20.1345 | 19.8015 | 19.4762 | 19.1586 | 18.8530 | 18.5590 | 18.2673 | 17.9781 | 17.6942 | 17.4182 | | | | |
| 30 | 23.2765 | 22.8902 | 22.5134 | 22.1461 | 21.7910 | 21.4478 | 21.1073 | 20.7696 | 20.4377 | 20.1145 | | | | |
| 35 | 26.1654 | 25.7302 | 25.3049 | 24.8896 | 24.4873 | 24.0975 | 23.7112 | 23.3285 | 22.9525 | 22.5858 | | | | |
| 40 | 28.8151 | 28.3341 | 27.8639 | 27.4044 | 26.9586 | 26.5261 | 26.0979 | 25.6739 | 25.2573 | 24.8508 | | | | |
| 45 | 31.2437 | 30.7207 | 30.2093 | 29.7092 | 29.2236 | 28.7521 | 28.2853 | 27.8236 | 27.3699 | 26.9268 | | | | |
| 50 | 33.4696 | 32.9082 | 32.3589 | 31.8218 | 31.2996 | 30.7922 | 30.2902 | 29.7939 | 29.3061 | 28.8296 | | | | |

Notes: <1> Data Based on Assumed DOS of Apr 1994.

<2> Authorized Period of Use of Table is Oct 1993 through Sep 1994.

Tabulated Data Based on Criteria Contained in 18 Mar 91 Tri-Service Memorandum of Agreement on Criteria/Standards for EA/LCC for MILCON Design.

Data Based on Discount Rate of 3.1% and DOE Projections of Future Price Level Changes for Industrial Sector (NIST Annual Supplement to Handbook 135, Oct 1993).

<3> Region 2: OH, IN, IL, MI, WI, MN, IA, MO, ND, SD, NE, KS

Table E-3-LP-2. Present Worth Factors--Liquefied Petroleum Gas (LPG)

| Number Of Payments | Beneficial Occupancy Date | | | | | | | | | | | | | | | | | | | |
|--------------------------|---------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|--|--|--|--|--|--|--|--|--|--|
| | Oct 1994 | Oct 1995 | Oct 1996 | Oct 1997 | Oct 1998 | Oct 1999 | Oct 2000 | Oct 2001 | Oct 2002 | Oct 2003 | | | | | | | | | | |
| 1 | 0.9540 | 0.9209 | 0.9023 | 0.8881 | 0.8780 | 0.8706 | 0.8634 | 0.8567 | 0.8488 | 0.8353 | | | | | | | | | | |
| 2 | 1.8750 | 1.8233 | 1.7905 | 1.7652 | 1.7487 | 1.7340 | 1.7201 | 1.7054 | 1.6841 | 1.6544 | | | | | | | | | | |
| 3 | 2.7773 | 2.7114 | 2.6685 | 2.6368 | 2.6120 | 2.5907 | 2.5688 | 2.5408 | 2.5031 | 2.4577 | | | | | | | | | | |
| 4 | 3.6654 | 3.5895 | 3.5391 | 3.5002 | 3.4687 | 3.4395 | 3.4042 | 3.3598 | 3.3065 | 3.2475 | | | | | | | | | | |
| 5 | 4.5435 | 4.4601 | 4.4025 | 4.3569 | 4.3175 | 4.2748 | 4.2232 | 4.1631 | 4.0963 | 4.0258 | | | | | | | | | | |
| 6 | 5.4141 | 5.3235 | 5.2592 | 5.2056 | 5.1528 | 5.0938 | 5.0265 | 4.9529 | 4.8745 | 4.7929 | | | | | | | | | | |
| 7 | 6.2775 | 6.1802 | 6.1080 | 6.0410 | 5.9719 | 5.8972 | 5.8163 | 5.7312 | 5.6416 | 5.5488 | | | | | | | | | | |
| 8 | 7.1342 | 7.0289 | 6.9433 | 6.8600 | 6.7752 | 6.6870 | 6.5946 | 6.4983 | 6.3975 | 6.2893 | | | | | | | | | | |
| 9 | 7.9829 | 7.8643 | 7.7623 | 7.6633 | 7.5650 | 7.4652 | 7.3617 | 7.2542 | 7.1381 | 7.0099 | | | | | | | | | | |
| 10 | 8.8183 | 8.6833 | 8.5657 | 8.4531 | 8.3433 | 8.2324 | 8.1176 | 7.9947 | 7.8587 | 7.7112 | | | | | | | | | | |
| 11 | 9.6373 | 9.4866 | 9.3555 | 9.2314 | 9.1104 | 8.9883 | 8.8581 | 8.7154 | 8.5599 | 8.3936 | | | | | | | | | | |
| 12 | 10.4406 | 10.2764 | 10.1338 | 9.9985 | 9.8663 | 9.7288 | 9.5788 | 9.4166 | 9.2423 | 9.0576 | | | | | | | | | | |
| 13 | 11.2304 | 11.0547 | 10.9009 | 10.7544 | 10.6068 | 10.4494 | 10.2800 | 10.0990 | 9.9064 | 9.7038 | | | | | | | | | | |
| 14 | 12.0087 | 11.8218 | 11.6568 | 11.4949 | 11.3274 | 11.1506 | 10.9624 | 10.7630 | 10.5525 | 10.3325 | | | | | | | | | | |
| 15 | 12.7758 | 12.5777 | 12.3973 | 12.2156 | 12.0287 | 11.8330 | 11.6264 | 11.4092 | 11.1813 | 10.9443 | | | | | | | | | | |
| 16 | 13.5317 | 13.3182 | 13.1179 | 12.9168 | 12.7111 | 12.4971 | 12.2726 | 12.0380 | 11.7931 | 11.5397 | | | | | | | | | | |
| 17 | 14.2722 | 14.0388 | 13.8191 | 13.5992 | 13.3751 | 13.1432 | 12.9014 | 12.6498 | 12.3884 | 12.1190 | | | | | | | | | | |
| 18 | 14.9929 | 14.7401 | 14.5015 | 14.2632 | 14.0212 | 13.7720 | 13.5132 | 13.2451 | 12.9677 | 12.6827 | | | | | | | | | | |
| 19 | 15.6941 | 15.4225 | 15.1656 | 14.9094 | 14.6500 | 14.3838 | 14.1085 | 13.8244 | 13.5314 | 13.2311 | | | | | | | | | | |
| 20 | 16.3765 | 16.0865 | 15.8117 | 15.5382 | 15.2618 | 14.9792 | 14.6878 | 14.3881 | 14.0799 | 13.7648 | | | | | | | | | | |
| 21 | 17.0405 | 16.7327 | 16.4405 | 16.1500 | 15.8572 | 15.5585 | 15.2515 | 14.9366 | 14.6136 | 14.2843 | | | | | | | | | | |
| 22 | 17.6867 | 17.3614 | 17.0523 | 16.7453 | 16.4365 | 16.1221 | 15.8000 | 15.4703 | 15.1331 | 14.7898 | | | | | | | | | | |
| 23 | 18.3155 | 17.9733 | 17.6477 | 17.3246 | 17.0002 | 16.6706 | 16.3337 | 15.9898 | 15.6386 | 15.2816 | | | | | | | | | | |
| 24 | 18.9273 | 18.5686 | 18.2270 | 17.8883 | 17.5486 | 17.2043 | 16.8532 | 16.4952 | 16.1304 | 15.7604 | | | | | | | | | | |
| 25 | 19.5226 | 19.1479 | 18.7906 | 18.4368 | 18.0823 | 17.7238 | 17.3586 | 16.9871 | 16.6091 | 16.2262 | | | | | | | | | | |
| 30 | 22.2673 | 21.8187 | 21.3896 | 20.9660 | 20.5436 | 20.1188 | 19.6893 | 19.2553 | 18.8166 | 18.3747 | | | | | | | | | | |
| 35 | 24.6623 | 24.1494 | 23.6579 | 23.1735 | 22.6922 | 22.2102 | 21.7250 | 21.2368 | 20.7453 | 20.2521 | | | | | | | | | | |
| 40 | 26.7536 | 26.1851 | 25.6393 | 25.1022 | 24.5696 | 24.0376 | 23.5037 | 22.9682 | 22.4306 | 21.8925 | | | | | | | | | | |
| 45 | 28.5810 | 27.9638 | 27.3707 | 26.7875 | 26.2100 | 25.6343 | 25.0580 | 24.4811 | 23.9032 | 23.3259 | | | | | | | | | | |
| 50 | 30.1778 | 29.5181 | 28.8836 | 28.2601 | 27.6434 | 27.0295 | 26.4161 | 25.8030 | 25.1899 | 24.5784 | | | | | | | | | | |

Notes: <1> Data Based on Assumed DOS of Apr 1994.

<2> Tabulated Period of Use of Table is Oct 1993 through Sep 1994.

<3> Tabulated Data Based on Criteria Contained in 18 Mar 91 Tri-Service Memorandum of Agreement on Criteria/Standards for EA/LCC for MILCON Design.

Data Based on Discount Rate of 3.1% and DOE Projections of Future Price Level Changes for Residential Sector (NIST Annual Supplement to Handbook 135, Oct 1993).

<3> Region 2: OH, IN, IL, MI, WI, MN, IA, MO, ND, SD, NE, KS

Table E-3-EL-3. Present Worth Factors--Electricity

| Number of Payments | Beneficial Occupancy Date | | | | | | | | | |
|--------------------------|---------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | Oct 1994 | Oct 1995 | Oct 1996 | Oct 1997 | Oct 1998 | Oct 1999 | Oct 2000 | Oct 2001 | Oct 2002 | Oct 2003 |
| 1 | 0.9764 | 0.9507 | 0.9244 | 0.9000 | 0.8781 | 0.8622 | 0.8457 | 0.8258 | 0.8089 | 0.7932 |
| 2 | 1.9271 | 1.8751 | 1.8244 | 1.7781 | 1.7403 | 1.7079 | 1.6714 | 1.6347 | 1.6021 | 1.5673 |
| 3 | 2.8515 | 2.7751 | 2.7024 | 2.6403 | 2.5859 | 2.5336 | 2.4804 | 2.4279 | 2.3763 | 2.3204 |
| 4 | 3.7515 | 3.6531 | 3.5646 | 3.4859 | 3.4117 | 3.3426 | 3.2736 | 3.2020 | 3.1293 | 3.0529 |
| 5 | 4.6296 | 4.5153 | 4.4103 | 4.3117 | 4.2207 | 4.1358 | 4.0477 | 3.9551 | 3.8618 | 3.7659 |
| 6 | 5.4918 | 5.3610 | 5.2361 | 5.1207 | 5.0138 | 4.9099 | 4.8008 | 4.6876 | 4.5749 | 4.4573 |
| 7 | 6.3374 | 6.1868 | 6.0450 | 5.9138 | 5.7880 | 5.6630 | 5.5333 | 5.4006 | 5.2663 | 5.1279 |
| 8 | 7.1632 | 6.9957 | 6.8382 | 6.6880 | 6.5410 | 6.3955 | 6.2463 | 6.0920 | 5.9368 | 5.7808 |
| 9 | 7.9722 | 7.7889 | 7.6123 | 7.4410 | 7.2736 | 7.1085 | 6.9377 | 6.7626 | 6.5898 | 6.4162 |
| 10 | 8.7653 | 8.5631 | 8.3654 | 8.1736 | 7.9866 | 7.7999 | 7.6083 | 7.4155 | 7.2251 | 7.0346 |
| 11 | 9.5395 | 9.3161 | 9.0979 | 8.8866 | 8.6780 | 8.4705 | 8.2612 | 8.0509 | 7.8435 | 7.6365 |
| 12 | 10.2925 | 10.0486 | 9.8110 | 9.5780 | 9.3485 | 9.1234 | 8.8965 | 8.6693 | 8.4454 | 8.2223 |
| 13 | 11.0251 | 10.7617 | 10.5023 | 10.2485 | 10.0015 | 9.7587 | 9.5149 | 9.2712 | 9.0313 | 8.7925 |
| 14 | 11.7381 | 11.4530 | 11.1729 | 10.9015 | 10.6368 | 10.3771 | 10.1169 | 9.8570 | 9.6015 | 9.3475 |
| 15 | 12.4295 | 12.1236 | 11.8259 | 11.5368 | 11.2552 | 10.9791 | 10.7027 | 10.4272 | 10.1565 | 9.8878 |
| 16 | 13.1000 | 12.7766 | 12.4612 | 12.1552 | 11.8571 | 11.5649 | 11.2729 | 10.9822 | 10.6968 | 10.4137 |
| 17 | 13.7530 | 13.4119 | 13.0796 | 12.7571 | 12.4430 | 12.1351 | 11.8279 | 11.5225 | 11.2227 | 10.9255 |
| 18 | 14.3883 | 14.0303 | 13.6815 | 13.3430 | 13.0132 | 12.6901 | 12.3682 | 12.0484 | 11.7345 | 11.4237 |
| 19 | 15.0067 | 14.6322 | 14.2673 | 13.9132 | 13.5682 | 13.2304 | 12.8941 | 12.5603 | 12.2326 | 11.9085 |
| 20 | 15.6086 | 15.2180 | 14.8376 | 14.4682 | 14.1085 | 13.7563 | 13.4059 | 13.0584 | 12.7174 | 12.3805 |
| 21 | 16.1945 | 15.7883 | 15.3925 | 15.0085 | 14.6344 | 14.2681 | 13.9041 | 13.5432 | 13.1894 | 12.8398 |
| 22 | 16.7647 | 16.3432 | 15.9329 | 15.5344 | 15.1462 | 14.7663 | 14.3889 | 14.0152 | 13.6487 | 13.2868 |
| 23 | 17.3197 | 16.8836 | 16.4588 | 16.0462 | 15.6443 | 15.2511 | 14.8608 | 14.4745 | 14.0957 | 13.7220 |
| 24 | 17.8600 | 17.4095 | 16.9706 | 16.5443 | 16.1291 | 15.7230 | 15.3202 | 14.9215 | 14.5309 | 14.1456 |
| 25 | 18.3859 | 17.9213 | 17.4687 | 17.0291 | 16.6011 | 16.1824 | 15.7672 | 15.3567 | 14.9545 | 14.5578 |
| 30 | 20.8119 | 20.2825 | 19.7670 | 19.2662 | 18.7785 | 18.3016 | 17.8300 | 17.3644 | 16.9088 | 16.4600 |
| 35 | 22.9312 | 22.3453 | 21.7748 | 21.2205 | 20.6807 | 20.1533 | 19.6325 | 19.1191 | 18.6168 | 18.1227 |
| 40 | 24.7829 | 24.1478 | 23.5294 | 22.9285 | 22.3434 | 21.7718 | 21.2080 | 20.6527 | 20.1097 | 19.5760 |
| 45 | 26.4014 | 25.7233 | 25.0631 | 24.4214 | 23.7966 | 23.1865 | 22.5851 | 21.9933 | 21.4146 | 20.8462 |
| 50 | 27.8160 | 27.1004 | 26.4036 | 25.7263 | 25.0659 | 24.4230 | 23.7888 | 23.1650 | 22.5552 | 21.9565 |

Notes: <1> Data Based on Assumed DOS of Apr 1994.

<2> Authorized Period of Use of Table is Oct 1993 through Sep 1994.

<3> Tabulated Data Based on Criteria Contained in 18 Mar 91 Tri-Service Memorandum of Agreement on Criteria/Standards for EA/LCC for MILCON Design.

Data Based on Discount Rate of 3.1% and DOE Projections of Future Price Level Changes for Industrial Sector (NIST Annual Supplement to Handbook 135, Oct 1993).

<3> Region 3: DE, MD, DC, VA, WV, NC, SC, GA, FL, KY, TN, AL, MS, AR, LA, OK, TX

Table E-3-DO-3. Present Worth Factors--Distillate Oil

| Number of Payments | Beneficial Occupancy Date | | | | | | | | | | | | | | |
|--------------------|---------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|--|--|--|--|--|
| | Oct 1994 | Oct 1995 | Oct 1996 | Oct 1997 | Oct 1998 | Oct 1999 | Oct 2000 | Oct 2001 | Oct 2002 | Oct 2003 | | | | | |
| 1 | 0.9709 | 0.9476 | 0.9323 | 0.9225 | 0.9178 | 0.9169 | 0.9169 | 0.9160 | 0.9129 | 0.9015 | | | | | |
| 2 | 1.9185 | 1.8798 | 1.8548 | 1.8403 | 1.8347 | 1.8338 | 1.8329 | 1.8289 | 1.8144 | 1.7870 | | | | | |
| 3 | 2.8508 | 2.8023 | 2.7726 | 2.7572 | 2.7516 | 2.7498 | 2.7458 | 2.7304 | 2.6999 | 2.6587 | | | | | |
| 4 | 3.7733 | 3.7202 | 3.6895 | 3.6741 | 3.6677 | 3.6627 | 3.6473 | 3.6159 | 3.5716 | 3.5188 | | | | | |
| 5 | 4.6911 | 4.6370 | 4.6064 | 4.5902 | 4.5806 | 4.5642 | 4.5328 | 4.4877 | 4.4317 | 4.3693 | | | | | |
| 6 | 5.6080 | 5.5539 | 5.5224 | 5.5031 | 5.4820 | 5.4497 | 5.4045 | 5.3478 | 5.2822 | 5.2112 | | | | | |
| 7 | 6.5249 | 6.4700 | 6.4353 | 6.4046 | 6.3675 | 6.3214 | 6.2647 | 6.1982 | 6.1241 | 6.0442 | | | | | |
| 8 | 7.4409 | 7.3829 | 7.3368 | 7.2900 | 7.2393 | 7.1816 | 7.1151 | 7.0401 | 6.9571 | 6.8627 | | | | | |
| 9 | 8.3538 | 8.2844 | 8.2223 | 8.1618 | 8.0994 | 8.0320 | 7.9570 | 7.8732 | 7.7756 | 7.6614 | | | | | |
| 10 | 9.2553 | 9.1699 | 9.0940 | 9.0219 | 8.9498 | 8.8739 | 8.7901 | 8.6917 | 8.5743 | 8.4413 | | | | | |
| 11 | 10.1408 | 10.0416 | 9.9542 | 9.8723 | 9.7917 | 9.7070 | 9.6086 | 9.4904 | 9.3542 | 9.2028 | | | | | |
| 12 | 11.0125 | 10.9017 | 10.8046 | 10.7142 | 10.6248 | 10.5255 | 10.4073 | 10.2702 | 10.1157 | 9.9457 | | | | | |
| 13 | 11.8727 | 11.7522 | 11.6465 | 11.5473 | 11.4433 | 11.3241 | 11.1871 | 11.0317 | 10.8586 | 10.6711 | | | | | |
| 14 | 12.7231 | 12.5940 | 12.4796 | 12.3658 | 12.2420 | 12.1040 | 11.9486 | 11.7747 | 11.5840 | 11.3792 | | | | | |
| 15 | 13.5650 | 13.4271 | 13.2981 | 13.1645 | 13.0218 | 12.8655 | 12.6915 | 12.5000 | 12.2921 | 12.0706 | | | | | |
| 16 | 14.3980 | 14.2456 | 14.0967 | 13.9443 | 13.7833 | 13.6084 | 13.4169 | 13.2082 | 12.9835 | 12.7455 | | | | | |
| 17 | 15.2166 | 15.0443 | 14.8766 | 14.7058 | 14.5263 | 14.3338 | 14.1251 | 13.8995 | 13.6583 | 13.4038 | | | | | |
| 18 | 16.0152 | 15.8242 | 15.6381 | 15.4488 | 15.2516 | 15.0420 | 14.8164 | 14.5744 | 14.3167 | 14.0464 | | | | | |
| 19 | 16.7951 | 16.5857 | 16.3810 | 16.1741 | 15.9598 | 15.7333 | 15.4913 | 15.2327 | 14.9593 | 14.6737 | | | | | |
| 20 | 17.5566 | 17.3286 | 17.1064 | 16.8823 | 16.6511 | 16.4082 | 16.1496 | 15.8754 | 15.5866 | 15.2859 | | | | | |
| 21 | 18.2995 | 18.0540 | 17.8146 | 17.5736 | 17.3260 | 17.0665 | 16.7923 | 16.5026 | 16.1988 | 15.8839 | | | | | |
| 22 | 19.0249 | 18.7621 | 18.5059 | 18.2485 | 17.9843 | 17.7091 | 17.4195 | 17.1149 | 16.7968 | 16.4675 | | | | | |
| 23 | 19.7330 | 19.4534 | 19.1808 | 18.9069 | 18.6270 | 18.3364 | 18.0318 | 17.7128 | 17.3804 | 17.0371 | | | | | |
| 24 | 20.4244 | 20.1283 | 19.8391 | 19.5495 | 19.2542 | 18.9486 | 18.6297 | 18.2964 | 17.9499 | 17.5933 | | | | | |
| 25 | 21.0993 | 20.7867 | 20.4817 | 20.1767 | 19.8665 | 19.5466 | 19.2133 | 18.8660 | 18.5062 | 18.1360 | | | | | |
| 30 | 24.2377 | 23.8504 | 23.4724 | 23.0963 | 22.7166 | 22.3284 | 21.9287 | 21.5168 | 21.0939 | 20.6624 | | | | | |
| 35 | 27.0195 | 26.5658 | 26.1232 | 25.6840 | 25.2430 | 24.7953 | 24.3375 | 23.8688 | 23.3904 | 22.9049 | | | | | |
| 40 | 29.4864 | 28.9745 | 28.4752 | 27.9806 | 27.4854 | 26.9849 | 26.4755 | 25.9564 | 25.4289 | 24.8953 | | | | | |
| 45 | 31.6760 | 31.1125 | 30.5628 | 30.0190 | 29.4759 | 28.9284 | 28.3732 | 27.8094 | 27.2382 | 26.6620 | | | | | |
| 50 | 33.6195 | 33.0103 | 32.4158 | 31.8284 | 31.2426 | 30.6535 | 30.0576 | 29.4542 | 28.8442 | 28.2302 | | | | | |

Notes: <1> Data Based on Assumed DOS of Apr 1994.

<2> Authorized Period of Use of Table is Oct 1993 through Sep 1994.
 Tabulated Data Based on Criteria Contained in 18 Mar 91 Tri-Service Memorandum of Agreement on Criteria/Standards for EA/LCC for MILCON Design.
 Data Based on Discount Rate of 3.1% and DOE Projections of Future Price Level Changes for Industrial Sector (NIST Annual Supplement to Handbook 135, Oct 1993).

<3> Region 3: DE, MD, DC, VA, WV, NC, SC, GA, FL, KY, TN, AL, MS, AR, LA, OK, TX

Table E-3-RO-3. Present Worth Factors--Residual Oil

| Number of Payments | Beneficial Occupancy Date | | | | | | | | | | | | | | |
|--------------------------|---------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|--|--|--|--|--|
| | Oct 1994 | Oct 1995 | Oct 1996 | Oct 1997 | Oct 1998 | Oct 1999 | Oct 2000 | Oct 2001 | Oct 2002 | Oct 2003 | | | | | |
| 1 | 1.0031 | 0.9951 | 0.9848 | 0.9853 | 0.9912 | 1.0032 | 1.0167 | 1.0284 | 1.0372 | 1.0326 | | | | | |
| 2 | 1.9982 | 1.9798 | 1.9701 | 1.9765 | 1.9944 | 2.0199 | 2.0451 | 2.0655 | 2.0698 | 2.0521 | | | | | |
| 3 | 2.9829 | 2.9651 | 2.9613 | 2.9797 | 3.0111 | 3.0483 | 3.0822 | 3.0981 | 3.0893 | 3.0597 | | | | | |
| 4 | 3.9683 | 3.9563 | 3.9645 | 3.9965 | 4.0395 | 4.0854 | 4.1148 | 4.1177 | 4.0969 | 4.0600 | | | | | |
| 5 | 4.9595 | 4.9596 | 4.9812 | 5.0248 | 5.0766 | 5.1180 | 5.1344 | 5.1252 | 5.0971 | 5.0559 | | | | | |
| 6 | 5.9627 | 5.9763 | 6.0096 | 6.0620 | 6.1092 | 6.1376 | 6.1419 | 6.1255 | 6.0931 | 6.0481 | | | | | |
| 7 | 6.9794 | 7.0046 | 7.0467 | 7.0946 | 7.1288 | 7.1452 | 7.1422 | 7.1214 | 7.0853 | 7.0391 | | | | | |
| 8 | 8.0077 | 8.0418 | 8.0793 | 8.1141 | 8.1364 | 8.1454 | 8.1381 | 8.1136 | 8.0763 | 8.0250 | | | | | |
| 9 | 9.0449 | 9.0744 | 9.0989 | 9.1217 | 9.1366 | 9.1414 | 9.1303 | 9.1046 | 9.0622 | 9.0010 | | | | | |
| 10 | 10.0775 | 10.0939 | 10.1065 | 10.1219 | 10.1326 | 10.1335 | 10.1213 | 10.0905 | 10.0382 | 9.9668 | | | | | |
| 11 | 11.0970 | 11.1015 | 11.1067 | 11.1179 | 11.1247 | 11.1246 | 11.1073 | 11.0665 | 11.0040 | 10.9221 | | | | | |
| 12 | 12.1046 | 12.1017 | 12.1027 | 12.1101 | 12.1158 | 12.1105 | 12.0832 | 12.0323 | 11.9593 | 11.8676 | | | | | |
| 13 | 13.1049 | 13.0977 | 13.0948 | 13.1011 | 13.1017 | 13.0865 | 13.0490 | 12.9876 | 12.9048 | 12.8040 | | | | | |
| 14 | 14.1008 | 14.0899 | 14.0859 | 14.0870 | 14.0777 | 14.0522 | 14.0043 | 13.9331 | 13.8412 | 13.7310 | | | | | |
| 15 | 15.0930 | 15.0809 | 15.0718 | 15.0630 | 15.0434 | 15.0075 | 14.9498 | 14.8695 | 14.7681 | 14.6482 | | | | | |
| 16 | 16.0840 | 16.0668 | 16.0477 | 16.0288 | 15.9987 | 15.9531 | 15.8862 | 15.7965 | 15.6853 | 15.5563 | | | | | |
| 17 | 17.0699 | 17.0428 | 17.0135 | 16.9841 | 16.9443 | 16.8894 | 16.8132 | 16.7137 | 16.5934 | 16.4558 | | | | | |
| 18 | 18.0459 | 18.0086 | 17.9688 | 17.9296 | 17.8806 | 17.8164 | 17.7304 | 17.6218 | 17.4929 | 17.3464 | | | | | |
| 19 | 19.0117 | 18.9639 | 18.9144 | 18.8660 | 18.8076 | 18.7336 | 18.6385 | 18.5213 | 18.3836 | 18.2278 | | | | | |
| 20 | 19.9670 | 19.9094 | 19.8507 | 19.7929 | 19.7248 | 19.6417 | 19.5380 | 19.4119 | 19.2650 | 19.1005 | | | | | |
| 21 | 20.9125 | 20.8458 | 20.7777 | 20.7102 | 20.6329 | 20.5412 | 20.4286 | 20.2933 | 20.1377 | 19.9643 | | | | | |
| 22 | 21.8489 | 21.7727 | 21.6949 | 21.6183 | 21.5324 | 21.4318 | 21.3100 | 21.1661 | 21.0015 | 20.8189 | | | | | |
| 23 | 22.7759 | 22.6900 | 22.6030 | 22.5178 | 22.4230 | 22.3133 | 22.1828 | 22.0298 | 21.8560 | 21.6646 | | | | | |
| 24 | 23.6931 | 23.5981 | 23.5025 | 23.4084 | 23.3045 | 23.1860 | 23.0465 | 22.8844 | 22.7018 | 22.5021 | | | | | |
| 25 | 24.6012 | 24.4976 | 24.3931 | 24.2898 | 24.1772 | 24.0497 | 23.9011 | 23.7302 | 23.5392 | 23.3309 | | | | | |
| 30 | 29.0092 | 28.8606 | 28.7114 | 28.5640 | 28.4075 | 28.2369 | 28.0463 | 27.8345 | 27.6033 | 27.3556 | | | | | |
| 35 | 33.1964 | 33.0059 | 32.8157 | 32.6281 | 32.4322 | 32.2229 | 31.9940 | 31.7442 | 31.4754 | 31.1905 | | | | | |
| 40 | 37.1824 | 36.9536 | 36.7255 | 36.5002 | 36.2671 | 36.0209 | 35.7555 | 35.4696 | 35.1649 | 34.8445 | | | | | |
| 45 | 40.9804 | 40.7151 | 40.4508 | 40.1897 | 39.9212 | 39.6398 | 39.3397 | 39.0192 | 38.6805 | 38.3262 | | | | | |
| 50 | 44.5993 | 44.2992 | 44.0004 | 43.7053 | 43.4029 | 43.0881 | 42.7547 | 42.4015 | 42.0302 | 41.6438 | | | | | |

Notes: <1> Data Based on Assumed DOS of Apr 1994.

<2> Authorized Period of Use of Table is Oct 1993 through Sep 1994.

Tabulated Data Based on Criteria Contained in 18 Mar 91 Tri-Service Memorandum of Agreement on Criteria/Standards for EA/LCC for MILCON Design.

Data Based on Discount Rate of 3.1% and DOE Projections of Future Price Level Changes for Industrial Sector (NIST Annual Supplement to Handbook 135, Oct 1993).

<3> Region 3: DE, MD, DC, VA, WV, NC, SC, GA, FL, KY, TN, AL, MS, AR, LA, OK, TX

Table E-3-NG-3. Present Worth Factors--Natural Gas

| Number of Payments | Beneficial Occupancy Date | | | | | | | | | | | | | | |
|--------------------------|---------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|--|--|--|--|--|
| | Oct 1994 | Oct 1995 | Oct 1996 | Oct 1997 | Oct 1998 | Oct 1999 | Oct 2000 | Oct 2001 | Oct 2002 | Oct 2003 | | | | | |
| 1 | 1.0092 | 1.0120 | 1.0010 | 1.0016 | 1.0114 | 1.0276 | 1.0469 | 1.0684 | 1.0952 | 1.1152 | | | | | |
| 2 | 2.0212 | 2.0129 | 2.0026 | 2.0130 | 2.0390 | 2.0745 | 2.1153 | 2.1636 | 2.2104 | 2.2345 | | | | | |
| 3 | 3.0221 | 3.0145 | 3.0140 | 3.0406 | 3.0859 | 3.1429 | 3.2105 | 3.2788 | 3.3297 | 3.3443 | | | | | |
| 4 | 4.0237 | 4.0259 | 4.0416 | 4.0875 | 4.1543 | 4.2381 | 4.3257 | 4.3981 | 4.4395 | 4.4417 | | | | | |
| 5 | 5.0351 | 5.0535 | 5.0885 | 5.1559 | 5.2495 | 5.3533 | 5.4450 | 5.5079 | 5.5368 | 5.5275 | | | | | |
| 6 | 6.0628 | 6.1005 | 6.1569 | 6.2511 | 6.3648 | 6.4726 | 6.5548 | 6.6052 | 6.6226 | 6.5905 | | | | | |
| 7 | 7.1097 | 7.1688 | 7.2521 | 7.3663 | 7.4840 | 7.5825 | 7.6521 | 7.6910 | 7.6857 | 7.6251 | | | | | |
| 8 | 8.1781 | 8.2640 | 8.3673 | 8.4856 | 8.5939 | 8.6798 | 8.7379 | 8.7541 | 8.7203 | 8.6470 | | | | | |
| 9 | 9.2733 | 9.3793 | 9.4866 | 9.5955 | 9.6912 | 9.7656 | 9.8010 | 9.7887 | 9.7422 | 9.6650 | | | | | |
| 10 | 10.3885 | 10.4985 | 10.5964 | 10.6928 | 10.7770 | 10.8286 | 10.8356 | 10.8105 | 10.7602 | 10.6784 | | | | | |
| 11 | 11.5078 | 11.6084 | 11.6937 | 11.7786 | 11.8400 | 11.8632 | 11.8575 | 11.8286 | 11.7736 | 11.6866 | | | | | |
| 12 | 12.6176 | 12.7057 | 12.7795 | 12.8416 | 12.8746 | 12.8851 | 12.8755 | 12.8420 | 12.7818 | 12.6901 | | | | | |
| 13 | 13.7149 | 13.7915 | 13.8426 | 13.8761 | 13.8965 | 13.9031 | 13.8889 | 13.8502 | 13.7853 | 13.6891 | | | | | |
| 14 | 14.8007 | 14.8545 | 14.8772 | 14.8981 | 14.9145 | 14.9165 | 14.8971 | 14.8537 | 14.7843 | 14.6840 | | | | | |
| 15 | 15.8637 | 15.8891 | 15.8990 | 15.9161 | 15.9279 | 15.9248 | 15.9006 | 15.8527 | 15.7792 | 15.6741 | | | | | |
| 16 | 16.8984 | 16.9110 | 16.9171 | 16.9295 | 16.9362 | 16.9282 | 16.8996 | 16.8475 | 16.7693 | 16.6597 | | | | | |
| 17 | 17.9202 | 17.9290 | 17.9305 | 17.9378 | 17.9396 | 17.9272 | 17.8945 | 17.8377 | 17.7549 | 17.6412 | | | | | |
| 18 | 18.9382 | 18.9424 | 18.9387 | 18.9412 | 18.9386 | 18.9221 | 18.8846 | 18.8233 | 18.7364 | 18.6177 | | | | | |
| 19 | 19.9517 | 19.9507 | 19.9422 | 19.9402 | 19.9335 | 19.9122 | 19.8702 | 19.8048 | 19.7129 | 19.5897 | | | | | |
| 20 | 20.9599 | 20.9541 | 20.9412 | 20.9351 | 20.9236 | 20.8979 | 20.8517 | 20.7813 | 20.6849 | 20.5572 | | | | | |
| 21 | 21.9633 | 21.9531 | 21.9360 | 21.9252 | 21.9093 | 21.8793 | 21.8282 | 21.7533 | 21.6524 | 21.5204 | | | | | |
| 22 | 22.9623 | 22.9480 | 22.9262 | 22.9109 | 22.8907 | 22.8559 | 22.8002 | 22.7208 | 22.6156 | 22.4795 | | | | | |
| 23 | 23.9572 | 23.9381 | 23.9118 | 23.8923 | 23.8673 | 23.8278 | 23.7677 | 23.6840 | 23.5747 | 23.4345 | | | | | |
| 24 | 24.9474 | 24.9238 | 24.8933 | 24.8689 | 24.8392 | 24.7953 | 24.7309 | 24.6431 | 24.5297 | 24.3849 | | | | | |
| 25 | 25.9330 | 25.9052 | 25.8698 | 25.8408 | 25.8067 | 25.7585 | 25.6900 | 25.5981 | 25.4801 | 25.3308 | | | | | |
| 30 | 30.7937 | 30.7435 | 30.6866 | 30.6361 | 30.5803 | 30.5103 | 30.4196 | 30.3053 | 30.1651 | 29.9937 | | | | | |
| 35 | 35.5454 | 35.4732 | 35.3938 | 35.3210 | 35.2432 | 35.1513 | 35.0389 | 34.9028 | 34.7411 | 34.5482 | | | | | |
| 40 | 40.1865 | 40.0924 | 39.9913 | 39.8970 | 39.7978 | 39.6845 | 39.5508 | 39.3936 | 39.2107 | 38.9969 | | | | | |
| 45 | 44.7196 | 44.6043 | 44.4821 | 44.3666 | 44.2464 | 44.1123 | 43.9578 | 43.7799 | 43.5765 | 43.3422 | | | | | |
| 50 | 49.1474 | 49.0113 | 48.8684 | 48.7324 | 48.5917 | 48.4372 | 48.2624 | 48.0643 | 47.8408 | 47.5864 | | | | | |

Notes: <1> Data Based on Assumed DOS of Apr 1994.

<2> Authorized Period of Use of Table is Oct 1993 through Sep 1994.

<3> Tabulated Data Based on Criteria Contained in 18 Mar 91 Tri-Service Memorandum of Agreement on Criteria/Standards for EA/LCC for MILCON Design.

Data Based on Discount Rate of 3.1% and DOE Projections of Future Price Level Changes for Industrial Sector (NIST Annual Supplement to Handbook 135, Oct 1993).

<3> Region 3: DE, MD, DC, VA, WV, NC, SC, GA, FL, KY, TN, AL, MS, AR, LA, OK, TX

Table E-3-SC-3. Present Worth Factors--Steam Coal

| Number of Payments | Beneficial Occupancy Date | | | | | | | | | | | | | | |
|--------------------|---------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|--|--|--|--|--|
| | Oct 1994 | Oct 1995 | Oct 1996 | Oct 1997 | Oct 1998 | Oct 1999 | Oct 2000 | Oct 2001 | Oct 2002 | Oct 2003 | | | | | |
| 1 | 0.9878 | 0.9784 | 0.9686 | 0.9532 | 0.9403 | 0.9376 | 0.9294 | 0.9135 | 0.8977 | 0.8798 | | | | | |
| 2 | 1.9662 | 1.9470 | 1.9218 | 1.8934 | 1.8779 | 1.8669 | 1.8428 | 1.8112 | 1.7775 | 1.7441 | | | | | |
| 3 | 2.9349 | 2.9002 | 2.8621 | 2.8310 | 2.8072 | 2.7804 | 2.7405 | 2.6909 | 2.6418 | 2.5994 | | | | | |
| 4 | 3.8880 | 3.8405 | 3.7997 | 3.7604 | 3.7207 | 3.6781 | 3.6203 | 3.5553 | 3.4971 | 3.4457 | | | | | |
| 5 | 4.8283 | 4.7780 | 4.7290 | 4.6739 | 4.6184 | 4.5579 | 4.4846 | 4.4106 | 4.3434 | 4.2805 | | | | | |
| 6 | 5.7659 | 5.7074 | 5.6425 | 5.5716 | 5.4982 | 5.4222 | 5.3400 | 5.2568 | 5.1782 | 5.1077 | | | | | |
| 7 | 6.6952 | 6.6209 | 6.5402 | 6.4513 | 6.3625 | 6.2776 | 6.1862 | 6.0916 | 6.0054 | 5.9270 | | | | | |
| 8 | 7.6087 | 7.5186 | 7.4200 | 7.3157 | 7.2178 | 7.1238 | 7.0210 | 6.9188 | 6.8247 | 6.7346 | | | | | |
| 9 | 8.5064 | 8.3984 | 8.2843 | 8.1710 | 8.0641 | 7.9586 | 7.8482 | 7.7382 | 7.6323 | 7.5285 | | | | | |
| 10 | 9.3862 | 9.2627 | 9.1396 | 9.0172 | 8.8989 | 8.7858 | 8.6676 | 8.5457 | 8.4262 | 8.3089 | | | | | |
| 11 | 10.2505 | 10.1180 | 9.9859 | 9.8520 | 9.7261 | 9.6051 | 9.4751 | 9.3397 | 9.2066 | 9.0775 | | | | | |
| 12 | 11.1058 | 10.9642 | 10.8207 | 10.6792 | 10.5454 | 10.4127 | 10.2690 | 10.1200 | 9.9752 | 9.8343 | | | | | |
| 13 | 11.9521 | 11.7990 | 11.6479 | 11.4986 | 11.3530 | 11.2066 | 11.0494 | 10.8886 | 10.7320 | 10.5779 | | | | | |
| 14 | 12.7869 | 12.6262 | 12.4672 | 12.3061 | 12.1469 | 11.9870 | 11.8180 | 11.6455 | 11.4756 | 11.3082 | | | | | |
| 15 | 13.6141 | 13.4456 | 13.2748 | 13.1000 | 12.9273 | 12.7556 | 12.5749 | 12.3890 | 12.2059 | 12.0269 | | | | | |
| 16 | 14.4334 | 14.2531 | 14.0687 | 13.8804 | 13.6959 | 13.5124 | 13.3184 | 13.1193 | 12.9246 | 12.7340 | | | | | |
| 17 | 15.2410 | 15.0471 | 14.8491 | 14.6490 | 14.4527 | 14.2560 | 14.0487 | 13.8380 | 13.6317 | 13.4283 | | | | | |
| 18 | 16.0349 | 15.8274 | 15.6177 | 15.4059 | 15.1963 | 14.9863 | 14.7674 | 14.5452 | 14.3260 | 14.1110 | | | | | |
| 19 | 16.8153 | 16.5960 | 16.3745 | 16.1494 | 15.9266 | 15.7050 | 15.4746 | 15.2394 | 15.0087 | 14.7825 | | | | | |
| 20 | 17.5839 | 17.3529 | 17.1181 | 16.8797 | 16.6453 | 16.4121 | 16.1688 | 15.9222 | 15.6802 | 15.4426 | | | | | |
| 21 | 18.3407 | 18.0964 | 17.8484 | 17.5984 | 17.3524 | 17.1064 | 16.8516 | 16.5936 | 16.3403 | 16.0927 | | | | | |
| 22 | 19.0843 | 18.8267 | 18.5671 | 18.3056 | 18.0467 | 17.7892 | 17.5230 | 17.2538 | 16.9904 | 16.7317 | | | | | |
| 23 | 19.8146 | 19.5455 | 19.2742 | 18.9998 | 18.7295 | 18.4606 | 18.1831 | 17.9039 | 17.6294 | 17.3595 | | | | | |
| 24 | 20.5333 | 20.2526 | 19.9685 | 19.6826 | 19.4009 | 19.1207 | 18.8333 | 18.5428 | 18.2572 | 17.9775 | | | | | |
| 25 | 21.2404 | 20.9468 | 20.6512 | 20.3540 | 20.0610 | 19.7708 | 19.4722 | 19.1707 | 18.8752 | 18.5845 | | | | | |
| 30 | 24.5991 | 24.2502 | 23.8997 | 23.5490 | 23.2029 | 22.8587 | 22.5076 | 22.1550 | 21.8090 | 21.4695 | | | | | |
| 35 | 27.6870 | 27.2856 | 26.8841 | 26.4829 | 26.0879 | 25.6967 | 25.2993 | 24.9012 | 24.5104 | 24.1269 | | | | | |
| 40 | 30.5250 | 30.0773 | 29.6303 | 29.1843 | 28.7453 | 28.3107 | 27.8706 | 27.4307 | 26.9986 | 26.5744 | | | | | |
| 45 | 33.1390 | 32.6487 | 32.1597 | 31.6725 | 31.1929 | 30.7184 | 30.2391 | 29.7604 | 29.2904 | 28.8289 | | | | | |
| 50 | 35.5467 | 35.0171 | 34.4895 | 33.9642 | 33.4473 | 32.9360 | 32.4205 | 31.9063 | 31.4013 | 30.9053 | | | | | |

Notes: <1> Data Based on Assumed DOS of Apr 1994.

<2> Tabulated Period of Use of Table is Oct 1993 through Sep 1994.

<3> Authorized Data Based on Criteria Contained in 18 Mar 91 Tri-Service Memorandum of Agreement on Criteria/Standards for EA/LCC for MILCON Design.

Data Based on Discount Rate of 3.1% and DOE Projections of Future Price Level Changes for Industrial Sector (NIST Annual Supplement to Handbook 135, Oct 1993).

<4> Region 3: DE, MD, DC, VA, WV, NC, SC, GA, FL, KY, TN, AL, MS, AR, LA, OK, TX

Table E-3-LP-3. Present Worth Factors--Liquefied Petroleum Gas (LPG)

| Number of Payments | Beneficial Occupancy Date | | | | | | | | | | | | | | | | | | | |
|--------------------|---------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|--|--|--|--|--|--|--|--|--|--|
| | Oct 1994 | Oct 1995 | Oct 1996 | Oct 1997 | Oct 1998 | Oct 1999 | Oct 2000 | Oct 2001 | Oct 2002 | Oct 2003 | | | | | | | | | | |
| 1 | 0.9578 | 0.9258 | 0.9055 | 0.8893 | 0.8762 | 0.8655 | 0.8554 | 0.8455 | 0.8348 | 0.8193 | | | | | | | | | | |
| 2 | 1.8836 | 1.8313 | 1.7948 | 1.7655 | 1.7417 | 1.7209 | 1.7009 | 1.6803 | 1.6540 | 1.6211 | | | | | | | | | | |
| 3 | 2.7891 | 2.7206 | 2.6710 | 2.6310 | 2.5971 | 2.5664 | 2.5357 | 2.4996 | 2.4559 | 2.4066 | | | | | | | | | | |
| 4 | 3.6784 | 3.5968 | 3.5364 | 3.4864 | 3.4426 | 3.4012 | 3.3550 | 3.3014 | 3.2413 | 3.1771 | | | | | | | | | | |
| 5 | 4.5546 | 4.4623 | 4.3918 | 4.3319 | 4.2774 | 4.2205 | 4.1568 | 4.0869 | 4.0119 | 3.9345 | | | | | | | | | | |
| 6 | 5.4200 | 5.3177 | 5.2374 | 5.1667 | 5.0967 | 5.0223 | 4.9423 | 4.8574 | 4.7693 | 4.6796 | | | | | | | | | | |
| 7 | 6.2755 | 6.1632 | 6.0721 | 5.9860 | 5.8985 | 5.8078 | 5.7128 | 5.6148 | 5.5143 | 5.4122 | | | | | | | | | | |
| 8 | 7.1210 | 6.9980 | 6.8914 | 6.7878 | 6.6840 | 6.5783 | 6.4703 | 6.3599 | 6.2470 | 6.1289 | | | | | | | | | | |
| 9 | 7.9557 | 7.8172 | 7.6933 | 7.5732 | 7.4545 | 7.3357 | 7.2153 | 7.0925 | 6.9637 | 6.8263 | | | | | | | | | | |
| 10 | 8.7750 | 8.6191 | 8.4787 | 8.3438 | 8.2119 | 8.0808 | 7.9479 | 7.8092 | 7.6610 | 7.5048 | | | | | | | | | | |
| 11 | 9.5769 | 9.4045 | 9.2493 | 9.1012 | 8.9570 | 8.8134 | 8.6646 | 8.5066 | 8.3396 | 8.1650 | | | | | | | | | | |
| 12 | 10.3623 | 10.1751 | 10.0067 | 9.8463 | 9.6896 | 9.5301 | 9.3620 | 9.1851 | 8.9998 | 8.8077 | | | | | | | | | | |
| 13 | 11.1329 | 10.9325 | 10.7517 | 10.5785 | 10.4063 | 10.2275 | 10.0405 | 9.8453 | 9.6425 | 9.4332 | | | | | | | | | | |
| 14 | 11.8903 | 11.6775 | 11.4844 | 11.2956 | 11.1037 | 10.9060 | 10.7007 | 10.4880 | 10.2680 | 10.0419 | | | | | | | | | | |
| 15 | 12.6353 | 12.4102 | 12.2011 | 11.9930 | 11.7822 | 11.5662 | 11.3434 | 11.1135 | 10.8767 | 10.6341 | | | | | | | | | | |
| 16 | 13.3680 | 13.1269 | 12.8984 | 12.6715 | 12.4424 | 12.2089 | 11.9690 | 11.7222 | 11.4689 | 11.2103 | | | | | | | | | | |
| 17 | 14.0847 | 13.8242 | 13.5769 | 13.3317 | 13.0851 | 12.8344 | 12.5776 | 12.3144 | 12.0451 | 11.7709 | | | | | | | | | | |
| 18 | 14.7820 | 14.5028 | 14.2372 | 13.9744 | 13.7106 | 13.4431 | 13.1698 | 12.8906 | 12.6057 | 12.3166 | | | | | | | | | | |
| 19 | 15.4605 | 15.1630 | 14.8798 | 14.5999 | 14.3193 | 14.0353 | 13.7460 | 13.4512 | 13.1513 | 12.8477 | | | | | | | | | | |
| 20 | 16.1208 | 15.8057 | 15.5054 | 15.2086 | 14.9115 | 14.6115 | 14.3066 | 13.9969 | 13.6824 | 13.3644 | | | | | | | | | | |
| 21 | 16.7634 | 16.4312 | 16.1140 | 15.8008 | 15.4877 | 15.1721 | 14.8523 | 14.5280 | 14.1991 | 13.8671 | | | | | | | | | | |
| 22 | 17.3890 | 17.0399 | 16.7062 | 16.3770 | 16.0483 | 15.7178 | 15.3834 | 15.0447 | 14.7019 | 14.3564 | | | | | | | | | | |
| 23 | 17.9976 | 17.6321 | 17.2824 | 16.9376 | 16.5940 | 16.2489 | 15.9001 | 15.5474 | 15.1912 | 14.8326 | | | | | | | | | | |
| 24 | 18.5899 | 18.2083 | 17.8431 | 17.4833 | 17.1251 | 16.7656 | 16.4028 | 16.0367 | 15.6674 | 15.2959 | | | | | | | | | | |
| 25 | 19.1660 | 18.7689 | 18.3887 | 18.0144 | 17.6418 | 17.2683 | 16.8921 | 16.5129 | 16.1307 | 15.7466 | | | | | | | | | | |
| 30 | 21.8228 | 21.3544 | 20.9047 | 20.4626 | 20.0240 | 19.5865 | 19.1479 | 18.7080 | 18.2668 | 17.8256 | | | | | | | | | | |
| 35 | 24.1410 | 23.6102 | 23.0999 | 22.5988 | 22.1030 | 21.6098 | 21.1171 | 20.6244 | 20.1320 | 19.6408 | | | | | | | | | | |
| 40 | 26.1644 | 25.5793 | 25.0163 | 24.4639 | 23.9182 | 23.3764 | 22.8364 | 22.2977 | 21.7604 | 21.2256 | | | | | | | | | | |
| 45 | 27.9309 | 27.2986 | 26.6895 | 26.0923 | 25.5030 | 24.9188 | 24.3375 | 23.7586 | 23.1822 | 22.6094 | | | | | | | | | | |
| 50 | 29.4734 | 28.7997 | 28.1505 | 27.5141 | 26.8868 | 26.2655 | 25.6481 | 25.0342 | 24.4236 | 23.8175 | | | | | | | | | | |

Notes: <1> Data Based on Assumed DOS of Apr 1994.

<2> Authorized Period of Use of Table is Oct 1993 through Sep 1994.

<3> Tabulated Data Based on Criteria Contained in 18 Mar 91 Tri-Service Memorandum of Agreement on Criteria/Standards for EA/LCC for MILCON Design.

Data Based on Discount Rate of 3.1% and DOE Projections of Future Price Level Changes for Residential Sector (NIST Annual Supplement to Handbook 135, Oct 1993).

<3> Region 3: DE, MD, DC, VA, WV, NC, SC, GA, FL, KY, TN, AL, MS, AR, LA, OK, TX

Table E-3-EL-4. Present Worth Factors--Electricity

| Number Of Payments | Beneficial Occupancy Date | | | | | | | | | | | | | | |
|--------------------------|---------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|--|--|--|--|--|
| | Oct 1994 | Oct 1995 | Oct 1996 | Oct 1997 | Oct 1998 | Oct 1999 | Oct 2000 | Oct 2001 | Oct 2002 | Oct 2003 | | | | | |
| 1 | 0.9727 | 0.9461 | 0.9247 | 0.9078 | 0.8884 | 0.8699 | 0.8534 | 0.8372 | 0.8187 | 0.7993 | | | | | |
| 2 | 1.9187 | 1.8708 | 1.8325 | 1.7962 | 1.7583 | 1.7233 | 1.6906 | 1.6558 | 1.6180 | 1.5783 | | | | | |
| 3 | 2.8434 | 2.7786 | 2.7209 | 2.6661 | 2.6117 | 2.5605 | 2.5093 | 2.4551 | 2.3970 | 2.3356 | | | | | |
| 4 | 3.7512 | 3.6670 | 3.5908 | 3.5195 | 3.4489 | 3.3792 | 3.3085 | 3.2341 | 3.1543 | 3.0711 | | | | | |
| 5 | 4.6396 | 4.5369 | 4.4442 | 4.3567 | 4.2675 | 4.1784 | 4.0875 | 3.9914 | 3.8898 | 3.7851 | | | | | |
| 6 | 5.5095 | 5.3903 | 5.2814 | 5.1754 | 5.0668 | 4.9574 | 4.8448 | 4.7269 | 4.6038 | 4.4757 | | | | | |
| 7 | 6.3629 | 6.2274 | 6.1000 | 5.9746 | 5.8458 | 5.7147 | 5.5803 | 5.4410 | 5.2944 | 5.1421 | | | | | |
| 8 | 7.2001 | 7.0461 | 6.8993 | 6.7536 | 6.6031 | 6.4502 | 6.2944 | 6.1315 | 5.9607 | 5.7882 | | | | | |
| 9 | 8.0188 | 7.8454 | 7.6783 | 7.5109 | 7.3386 | 7.1643 | 6.9850 | 6.7979 | 6.6069 | 6.4169 | | | | | |
| 10 | 8.8180 | 8.6244 | 8.4356 | 8.2464 | 8.0527 | 7.8549 | 7.6513 | 7.4440 | 7.2356 | 7.0289 | | | | | |
| 11 | 9.5971 | 9.3817 | 9.1711 | 8.9605 | 8.7432 | 8.5212 | 8.2974 | 8.0727 | 7.8476 | 7.6246 | | | | | |
| 12 | 10.3544 | 10.1172 | 9.8852 | 9.6511 | 9.4096 | 9.1673 | 8.9261 | 8.6847 | 8.4432 | 8.2044 | | | | | |
| 13 | 11.0899 | 10.8312 | 10.5757 | 10.3174 | 10.0557 | 9.7960 | 9.5381 | 9.2804 | 9.0231 | 8.7688 | | | | | |
| 14 | 11.8039 | 11.5218 | 11.2421 | 10.9635 | 10.6844 | 10.4080 | 10.1338 | 9.8602 | 9.5874 | 9.3181 | | | | | |
| 15 | 12.4945 | 12.1882 | 11.8882 | 11.5922 | 11.2964 | 11.0037 | 10.7136 | 10.4246 | 10.1368 | 9.8527 | | | | | |
| 16 | 13.1608 | 12.8343 | 12.5169 | 12.2042 | 11.8921 | 11.5835 | 11.2780 | 10.9739 | 10.6714 | 10.3731 | | | | | |
| 17 | 13.8070 | 13.4630 | 13.1289 | 12.7999 | 12.4719 | 12.1479 | 11.8273 | 11.5086 | 11.1918 | 10.8796 | | | | | |
| 18 | 14.4357 | 14.0750 | 13.7246 | 13.3797 | 13.0363 | 12.6972 | 12.3620 | 12.0290 | 11.6983 | 11.3726 | | | | | |
| 19 | 15.0477 | 14.6707 | 14.3044 | 13.9441 | 13.5856 | 13.2319 | 12.8824 | 12.5355 | 12.1913 | 11.8524 | | | | | |
| 20 | 15.6433 | 15.2505 | 14.8688 | 14.4934 | 14.1203 | 13.7523 | 13.3889 | 13.0285 | 12.6711 | 12.3194 | | | | | |
| 21 | 16.2232 | 15.8149 | 15.4181 | 15.0281 | 14.6407 | 14.2588 | 13.8819 | 13.5083 | 13.1381 | 12.7740 | | | | | |
| 22 | 16.7875 | 16.3642 | 15.9528 | 15.5485 | 15.1472 | 14.7518 | 14.3617 | 13.9752 | 13.5927 | 13.2165 | | | | | |
| 23 | 17.3369 | 16.8989 | 16.4732 | 16.0550 | 15.6402 | 15.2316 | 14.8287 | 14.4299 | 14.0352 | 13.6471 | | | | | |
| 24 | 17.8715 | 17.4193 | 16.9797 | 16.5480 | 16.1200 | 15.6986 | 15.2833 | 14.8723 | 14.4658 | 14.0663 | | | | | |
| 25 | 18.3919 | 17.9258 | 17.4727 | 17.0278 | 16.5869 | 16.1532 | 15.7258 | 15.3030 | 14.8850 | 14.4743 | | | | | |
| 30 | 20.7928 | 20.2626 | 19.7472 | 19.2417 | 18.7419 | 18.2505 | 17.7672 | 17.2900 | 16.8192 | 16.3571 | | | | | |
| 35 | 22.8902 | 22.3040 | 21.7342 | 21.1758 | 20.6246 | 20.0833 | 19.5514 | 19.0269 | 18.5100 | 18.0031 | | | | | |
| 40 | 24.7230 | 24.0882 | 23.4711 | 22.8667 | 22.2706 | 21.6857 | 21.1112 | 20.5454 | 19.9882 | 19.4421 | | | | | |
| 45 | 26.3253 | 25.6481 | 24.9896 | 24.3449 | 23.7096 | 23.0866 | 22.4750 | 21.8730 | 21.2806 | 20.7002 | | | | | |
| 50 | 27.7262 | 27.0118 | 26.3172 | 25.6373 | 24.9677 | 24.3113 | 23.6672 | 23.0336 | 22.4105 | 21.8001 | | | | | |

Notes: <1> Data Based on Assumed DOS of Apr 1994.

Authorized Period of Use of Table is Oct 1993 through Sep 1994.

<2> Tabulated Data Based on Criteria Contained in 18 Mar 91 Tri-Service Memorandum of Agreement on Criteria/Standards for EA/LCC for MILCON Design.

Data Based on Discount Rate of 3.1% and DOE Projections of Future Price Level Changes for Industrial Sector (NIST Annual Supplement to Handbook 135, Oct 1993).

<3> Region 4: MT, ID, WY, CO, NM, AZ, UT, NV, WA, OR, CA, AK, HI

Table E-3-DO-4. Present Worth Factors--Distillate Oil

| Number Of Payments | Beneficial Occupancy Date | | | | | | | | | | | | | | |
|--------------------------|---------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|--|--|--|--|--|
| | Oct 1994 | Oct 1995 | Oct 1996 | Oct 1997 | Oct 1998 | Oct 1999 | Oct 2000 | Oct 2001 | Oct 2002 | Oct 2003 | | | | | |
| 1 | 0.9709 | 0.9474 | 0.9317 | 0.9215 | 0.9162 | 0.9145 | 0.9130 | 0.9115 | 0.9078 | 0.8961 | | | | | |
| 2 | 1.9183 | 1.8791 | 1.8532 | 1.8376 | 1.8307 | 1.8275 | 1.8245 | 1.8193 | 1.8040 | 1.7768 | | | | | |
| 3 | 2.8500 | 2.8005 | 2.7693 | 2.7521 | 2.7437 | 2.7391 | 2.7324 | 2.7155 | 2.6846 | 2.6428 | | | | | |
| 4 | 3.7714 | 3.7167 | 3.6838 | 3.6652 | 3.6552 | 3.6469 | 3.6285 | 3.5961 | 3.5507 | 3.4970 | | | | | |
| 5 | 4.6876 | 4.6312 | 4.5969 | 4.5767 | 4.5630 | 4.5430 | 4.5092 | 4.4622 | 4.4048 | 4.3418 | | | | | |
| 6 | 5.6021 | 5.5442 | 5.5084 | 5.4845 | 5.4592 | 5.4237 | 5.3752 | 5.3163 | 5.2497 | 5.1778 | | | | | |
| 7 | 6.5151 | 6.4557 | 6.4162 | 6.3806 | 6.3398 | 6.2897 | 6.2294 | 6.1612 | 6.0857 | 6.0047 | | | | | |
| 8 | 7.4267 | 7.3636 | 7.3123 | 7.2613 | 7.2059 | 7.1439 | 7.0742 | 6.9972 | 6.9126 | 6.8170 | | | | | |
| 9 | 8.3345 | 8.2597 | 8.1930 | 8.1273 | 8.0600 | 7.9887 | 7.9102 | 7.8241 | 7.7248 | 7.6094 | | | | | |
| 10 | 9.2306 | 9.1404 | 9.0590 | 8.9815 | 8.9049 | 8.8247 | 8.7371 | 8.6363 | 8.5172 | 8.3831 | | | | | |
| 11 | 10.1113 | 10.0064 | 9.9132 | 9.8263 | 9.7409 | 9.6516 | 9.5493 | 9.4287 | 9.2909 | 9.1384 | | | | | |
| 12 | 10.9773 | 10.8606 | 10.7581 | 10.6623 | 10.5678 | 10.4638 | 10.3418 | 10.2024 | 10.0462 | 9.8758 | | | | | |
| 13 | 11.8315 | 11.7054 | 11.5940 | 11.4892 | 11.3800 | 11.2563 | 11.1154 | 10.9578 | 10.7836 | 10.5956 | | | | | |
| 14 | 12.6763 | 12.5414 | 12.4209 | 12.3015 | 12.1724 | 12.0300 | 11.8708 | 11.6951 | 11.5035 | 11.2978 | | | | | |
| 15 | 13.5123 | 13.3683 | 13.2332 | 13.0939 | 12.9461 | 12.7853 | 12.6082 | 12.4150 | 12.2056 | 11.9832 | | | | | |
| 16 | 14.3392 | 14.1805 | 14.0256 | 13.8676 | 13.7015 | 13.5227 | 13.3280 | 13.1172 | 12.8910 | 12.6527 | | | | | |
| 17 | 15.1514 | 14.9730 | 14.7993 | 14.6229 | 14.4388 | 14.2425 | 14.0302 | 13.8026 | 13.5605 | 13.3061 | | | | | |
| 18 | 15.9439 | 15.7467 | 15.5546 | 15.3603 | 15.1587 | 14.9447 | 14.7156 | 14.4720 | 14.2140 | 13.9439 | | | | | |
| 19 | 16.7176 | 16.5020 | 16.2920 | 16.0801 | 15.8609 | 15.6301 | 15.3851 | 15.1255 | 14.8517 | 14.5663 | | | | | |
| 20 | 17.4729 | 17.2394 | 17.0118 | 16.7823 | 16.5463 | 16.2996 | 16.0385 | 15.7633 | 15.4742 | 15.1738 | | | | | |
| 21 | 18.2103 | 17.9592 | 17.7140 | 17.4677 | 17.2157 | 16.9530 | 16.6763 | 16.3857 | 16.0816 | 15.7670 | | | | | |
| 22 | 18.9301 | 18.6614 | 18.3994 | 18.1372 | 17.8692 | 17.5908 | 17.2987 | 16.9931 | 16.6748 | 16.3459 | | | | | |
| 23 | 19.6323 | 19.3468 | 19.0689 | 18.7906 | 18.5059 | 18.2132 | 17.9062 | 17.5863 | 17.2537 | 16.9108 | | | | | |
| 24 | 20.3177 | 20.0163 | 19.7224 | 19.4284 | 19.1294 | 18.8207 | 18.4994 | 18.1652 | 17.8186 | 17.4623 | | | | | |
| 25 | 20.9872 | 20.6697 | 20.3601 | 20.0508 | 19.7368 | 19.4139 | 19.0782 | 18.7301 | 18.3702 | 18.0009 | | | | | |
| 30 | 24.1015 | 23.7095 | 23.3270 | 22.9468 | 22.5639 | 22.1736 | 21.7720 | 21.3595 | 20.9364 | 20.5050 | | | | | |
| 35 | 26.8612 | 26.4033 | 25.9564 | 25.5130 | 25.0680 | 24.6168 | 24.1558 | 23.6853 | 23.2055 | 22.7189 | | | | | |
| 40 | 29.3044 | 28.7870 | 28.2821 | 27.7822 | 27.2820 | 26.7768 | 26.2633 | 25.7415 | 25.2117 | 24.6763 | | | | | |
| 45 | 31.4644 | 30.8945 | 30.3383 | 29.7883 | 29.2393 | 28.6865 | 28.1265 | 27.5594 | 26.9853 | 26.4068 | | | | | |
| 50 | 33.3741 | 32.7577 | 32.1562 | 31.5620 | 30.9698 | 30.3749 | 29.7738 | 29.1666 | 28.5535 | 27.9367 | | | | | |

Notes: <1> Data Based on Assumed DOS of Apr 1994.

Authorized Period of Use of Table is Oct 1993 through Sep 1994.

<2> Tabulated Data Based on Criteria Contained in 18 Mar 91 Tri-Service Memorandum of Agreement on Criteria/Standards for EA/LCC for MILCON Design.

Data Based on Discount Rate of 3.1% and DOE Projections of Future Price Level Changes for Industrial Sector (NIST Annual Supplement to Handbook 135, Oct 1993).

<3> Region 4: MT, ID, WY, CO, NM, AZ, UT, NV, WA, OR, CA, AK, HI

Table E-3-RO-4. Present Worth Factors--Residual Oil

| Number Of Payments | Beneficial Occupancy Date | | | | | | | | | |
|--------------------------|---------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | Oct 1994 | Oct 1995 | Oct 1996 | Oct 1997 | Oct 1998 | Oct 1999 | Oct 2000 | Oct 2001 | Oct 2002 | Oct 2003 |
| 1 | 1.0026 | 0.9943 | 0.9837 | 0.9839 | 0.9908 | 1.0023 | 1.0137 | 1.0249 | 1.0332 | 1.0284 |
| 2 | 1.9969 | 1.9780 | 1.9676 | 1.9747 | 1.9931 | 2.0160 | 2.0386 | 2.0581 | 2.0616 | 2.0436 |
| 3 | 2.9807 | 2.9619 | 2.9585 | 2.9770 | 3.0069 | 3.0409 | 3.0718 | 3.0865 | 3.0768 | 3.0480 |
| 4 | 3.9646 | 3.9527 | 3.9608 | 3.9908 | 4.0317 | 4.0742 | 4.1002 | 4.1017 | 4.0812 | 4.0447 |
| 5 | 4.9554 | 4.9550 | 4.9745 | 5.0157 | 5.0650 | 5.1025 | 5.1155 | 5.1061 | 5.0780 | 5.0370 |
| 6 | 5.9577 | 5.9688 | 5.9994 | 6.0489 | 6.0934 | 6.1178 | 6.1198 | 6.1028 | 6.0702 | 6.0263 |
| 7 | 6.9714 | 6.9937 | 7.0326 | 7.0773 | 7.1086 | 7.1221 | 7.1166 | 7.0951 | 7.0595 | 7.0131 |
| 8 | 7.9963 | 8.0269 | 8.0610 | 8.0925 | 8.1129 | 8.1189 | 8.1088 | 8.0844 | 8.0463 | 7.9934 |
| 9 | 9.0295 | 9.0553 | 9.0762 | 9.0968 | 9.1097 | 9.1111 | 9.0981 | 9.0712 | 9.0266 | 8.9637 |
| 10 | 10.0579 | 10.0705 | 10.0806 | 10.0936 | 10.1019 | 10.1004 | 10.0849 | 10.0515 | 9.9970 | 9.9248 |
| 11 | 11.0732 | 11.0748 | 11.0774 | 11.0858 | 11.0913 | 11.0872 | 11.0653 | 11.0219 | 10.9580 | 10.8761 |
| 12 | 12.0775 | 12.0716 | 12.0696 | 12.0752 | 12.0780 | 12.0676 | 12.0356 | 11.9829 | 11.9093 | 11.8176 |
| 13 | 13.0743 | 13.0639 | 13.0589 | 13.0619 | 13.0584 | 13.0379 | 12.9966 | 12.9342 | 12.8508 | 12.7497 |
| 14 | 14.0665 | 14.0532 | 14.0457 | 14.0423 | 14.0287 | 13.9989 | 13.9480 | 13.8757 | 13.7830 | 13.6723 |
| 15 | 15.0558 | 15.0399 | 15.0260 | 15.0126 | 14.9897 | 14.9503 | 14.8894 | 14.8078 | 14.7055 | 14.5851 |
| 16 | 16.0426 | 16.0203 | 15.9964 | 15.9736 | 15.9411 | 15.8917 | 15.8216 | 15.7304 | 15.6183 | 15.4885 |
| 17 | 17.0230 | 16.9906 | 16.9574 | 16.9250 | 16.8825 | 16.8239 | 16.7442 | 16.6432 | 16.5218 | 16.3833 |
| 18 | 17.9933 | 17.9516 | 17.9087 | 17.8664 | 17.8147 | 17.7465 | 17.6569 | 17.5467 | 17.4165 | 17.2690 |
| 19 | 18.9543 | 18.9030 | 18.8502 | 18.7986 | 18.7373 | 18.6592 | 18.5604 | 18.4414 | 18.3023 | 18.1455 |
| 20 | 19.9057 | 19.8445 | 19.7823 | 19.7212 | 19.6500 | 19.5627 | 19.4551 | 19.3272 | 19.1787 | 19.0132 |
| 21 | 20.8471 | 20.7766 | 20.7049 | 20.6339 | 20.5535 | 20.4575 | 20.3409 | 20.2036 | 20.0464 | 19.8718 |
| 22 | 21.7793 | 21.6992 | 21.6177 | 21.5374 | 21.4483 | 21.3432 | 21.2173 | 21.0713 | 20.9050 | 20.7218 |
| 23 | 22.7019 | 22.6120 | 22.5212 | 22.4322 | 22.3340 | 22.2197 | 22.0850 | 21.9299 | 21.7550 | 21.5635 |
| 24 | 23.6146 | 23.5154 | 23.4159 | 23.3179 | 23.2105 | 23.0873 | 22.9436 | 22.7799 | 22.5968 | 22.3969 |
| 25 | 24.5181 | 24.4102 | 24.3017 | 24.1944 | 24.0781 | 23.9459 | 23.7936 | 23.6217 | 23.4301 | 23.2215 |
| 30 | 28.9013 | 28.7486 | 28.5962 | 28.4457 | 28.2864 | 28.1118 | 27.9178 | 27.7044 | 27.4720 | 27.2234 |
| 35 | 33.0672 | 32.8728 | 32.6789 | 32.4876 | 32.2884 | 32.0746 | 31.8417 | 31.5899 | 31.3194 | 31.0332 |
| 40 | 37.0300 | 36.7968 | 36.5644 | 36.3350 | 36.0981 | 35.8470 | 35.5772 | 35.2887 | 34.9820 | 34.6599 |
| 45 | 40.8024 | 40.5322 | 40.2632 | 39.9976 | 39.7248 | 39.4382 | 39.1331 | 38.8098 | 38.4686 | 38.1123 |
| 50 | 44.3936 | 44.0882 | 43.7843 | 43.4843 | 43.1773 | 42.8568 | 42.5183 | 42.1618 | 41.7877 | 41.3989 |

Notes: <1> Data Based on Assumed DOS of Apr 1994.

<2> Authorized Period of Use of Table is Oct 1993 through Sep 1994.
 Tabulated Data Based on Criteria Contained in 18 Mar 91 Tri-Service Memorandum
 of Agreement on Criteria/Standards for EA/ICC for MILCON Design.
 Data Based on Discount Rate of 3.1% and DOE Projections of Future Price Level Changes
 for Industrial Sector (NIST Annual Supplement to Handbook 135, Oct 1993).

<3> Region 4: MT, ID, WY, CO, NM, AZ, UT, NV, WA, OR, CA, AK, HI

Table E-3-NG-4. Present Worth Factors--Natural Gas

| Number of Payments | Beneficial Occupancy Date | | | | | | | | | | | | | | |
|--------------------|---------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|--|--|--|--|--|
| | Oct 1994 | Oct 1995 | Oct 1996 | Oct 1997 | Oct 1998 | Oct 1999 | Oct 2000 | Oct 2001 | Oct 2002 | Oct 2003 | | | | | |
| 1 | 1.0000 | 0.9941 | 0.9784 | 0.9715 | 0.9702 | 0.9740 | 0.9802 | 0.9884 | 1.0006 | 1.0072 | | | | | |
| 2 | 1.9942 | 1.9725 | 1.9499 | 1.9418 | 1.9443 | 1.9543 | 1.9686 | 1.9890 | 2.0078 | 2.0095 | | | | | |
| 3 | 2.9726 | 2.9440 | 2.9202 | 2.9158 | 2.9245 | 2.9427 | 2.9693 | 2.9962 | 3.0101 | 2.9983 | | | | | |
| 4 | 3.9441 | 3.9143 | 3.8942 | 3.8960 | 3.9129 | 3.9433 | 3.9765 | 3.9985 | 3.9990 | 3.9718 | | | | | |
| 5 | 4.9143 | 4.8883 | 4.8744 | 4.8844 | 4.9135 | 4.9505 | 4.9787 | 4.9874 | 4.9724 | 4.9316 | | | | | |
| 6 | 5.8884 | 5.8685 | 5.8628 | 5.8850 | 5.9207 | 5.9528 | 5.9676 | 5.9608 | 5.9322 | 5.8689 | | | | | |
| 7 | 6.8686 | 6.8569 | 6.8635 | 6.8922 | 6.9230 | 6.9416 | 6.9410 | 6.9206 | 6.8695 | 6.7806 | | | | | |
| 8 | 7.8570 | 7.8576 | 7.8707 | 7.8945 | 7.9119 | 7.9150 | 7.9009 | 7.8579 | 7.7812 | 7.6800 | | | | | |
| 9 | 8.8576 | 8.8648 | 8.8729 | 8.8834 | 8.8853 | 8.8749 | 8.8382 | 8.7696 | 8.6806 | 8.5753 | | | | | |
| 10 | 9.8648 | 9.8671 | 9.8618 | 9.8568 | 9.8451 | 9.8122 | 9.7499 | 9.6690 | 9.5759 | 9.4666 | | | | | |
| 11 | 10.8671 | 10.8559 | 10.8352 | 10.8167 | 10.7824 | 10.7239 | 10.6493 | 10.5643 | 10.4672 | 10.3534 | | | | | |
| 12 | 11.8560 | 11.8293 | 11.7951 | 11.7539 | 11.6941 | 11.6233 | 11.5445 | 11.4556 | 11.3541 | 11.2367 | | | | | |
| 13 | 12.8294 | 12.7892 | 12.7324 | 12.6656 | 12.5936 | 12.5185 | 12.4359 | 12.3425 | 12.2374 | 12.1159 | | | | | |
| 14 | 13.7892 | 13.7265 | 13.6441 | 13.5651 | 13.4888 | 13.4099 | 13.3227 | 13.2257 | 13.1165 | 12.9911 | | | | | |
| 15 | 14.7265 | 14.6382 | 14.5435 | 14.4603 | 14.3801 | 14.2967 | 14.2060 | 14.1049 | 13.9917 | 13.8624 | | | | | |
| 16 | 15.6382 | 15.5376 | 15.4387 | 15.3516 | 15.2670 | 15.1800 | 15.0852 | 14.9801 | 14.8631 | 14.7294 | | | | | |
| 17 | 16.5376 | 16.4328 | 16.3301 | 16.2385 | 16.1503 | 16.0592 | 15.9603 | 15.8515 | 15.7300 | 15.5926 | | | | | |
| 18 | 17.4329 | 17.3242 | 17.2169 | 17.1218 | 17.0294 | 16.9344 | 16.8317 | 16.7184 | 16.5933 | 16.4523 | | | | | |
| 19 | 18.3242 | 18.2110 | 18.1002 | 18.0009 | 17.9046 | 17.8057 | 17.6986 | 17.5817 | 17.4529 | 17.3078 | | | | | |
| 20 | 19.2110 | 19.0943 | 18.9794 | 18.8761 | 18.7760 | 18.6726 | 18.5619 | 18.4413 | 18.3085 | 18.1575 | | | | | |
| 21 | 20.0943 | 19.9735 | 19.8545 | 19.7475 | 19.6429 | 19.5359 | 19.4216 | 19.2969 | 19.1582 | 18.9936 | | | | | |
| 22 | 20.9735 | 20.8487 | 20.7259 | 20.6144 | 20.5062 | 20.3956 | 20.2771 | 20.1466 | 19.9943 | 19.8095 | | | | | |
| 23 | 21.8487 | 21.7200 | 21.5928 | 21.4777 | 21.3659 | 21.2511 | 21.1268 | 20.9827 | 20.8102 | 20.6057 | | | | | |
| 24 | 22.7200 | 22.5869 | 22.4561 | 22.3374 | 22.2214 | 22.1008 | 21.9629 | 21.7986 | 21.6063 | 21.3831 | | | | | |
| 25 | 23.5870 | 23.4502 | 23.3158 | 23.1929 | 23.0711 | 22.9369 | 22.7788 | 22.5947 | 22.3837 | 22.1421 | | | | | |
| 30 | 27.8512 | 27.6671 | 27.4692 | 27.2681 | 27.0557 | 26.8265 | 26.5755 | 26.3008 | 26.0006 | 25.6715 | | | | | |
| 35 | 31.7408 | 31.4638 | 31.1752 | 30.8851 | 30.5851 | 30.2700 | 29.9353 | 29.5787 | 29.1989 | 28.7919 | | | | | |
| 40 | 35.1844 | 34.8236 | 34.4532 | 34.0833 | 33.7055 | 33.3145 | 32.9056 | 32.4768 | 32.0264 | 31.5507 | | | | | |
| 45 | 38.2288 | 37.7939 | 37.3512 | 36.9108 | 36.4642 | 36.0061 | 35.5318 | 35.0390 | 34.5263 | 33.9897 | | | | | |
| 50 | 40.9204 | 40.4201 | 39.9135 | 39.4107 | 38.9033 | 38.3858 | 37.8535 | 37.3043 | 36.7365 | 36.1461 | | | | | |

Notes: <1> Data Based on Assumed DOS of Apr 1994.

<2> Authorized Period of Use of Table is Oct 1993 through Sep 1994.
 Tabulated Data Based on Criteria Contained in 18 Mar 91 Tri-Service Memorandum of Agreement on Criteria/Standards for EA/LCC for MILCON Design.
 Data Based on Discount Rate of 3.1% and DOE Projections of Future Price Level Changes for Industrial Sector (NIST Annual Supplement to Handbook 135, Oct 1993).

<3> Region 4: MT, ID, WY, CO, NM, AZ, UT, NV, WA, OR, CA, AK, HI

Table E-3-SC-4. Present Worth Factors--Steam Coal

| Number Of Payments | Beneficial Occupancy Date | | | | | | | | | | | | | | |
|--------------------------|---------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|--|--|--|--|--|
| | Oct 1994 | Oct 1995 | Oct 1996 | Oct 1997 | Oct 1998 | Oct 1999 | Oct 2000 | Oct 2001 | Oct 2002 | Oct 2003 | | | | | |
| 1 | 0.9810 | 0.9622 | 0.9471 | 0.9322 | 0.9171 | 0.9086 | 0.8936 | 0.8727 | 0.8551 | 0.8378 | | | | | |
| 2 | 1.9432 | 1.9094 | 1.8793 | 1.8493 | 1.8257 | 1.8021 | 1.7662 | 1.7277 | 1.6928 | 1.6558 | | | | | |
| 3 | 2.8903 | 2.8415 | 2.7964 | 2.7579 | 2.7193 | 2.6748 | 2.6213 | 2.5655 | 2.5109 | 2.4623 | | | | | |
| 4 | 3.8225 | 3.7587 | 3.7050 | 3.6514 | 3.5919 | 3.5299 | 3.4591 | 3.3835 | 3.3174 | 3.2626 | | | | | |
| 5 | 4.7396 | 4.6672 | 4.5986 | 4.5241 | 4.4470 | 4.3676 | 4.2771 | 4.1901 | 4.1176 | 4.0536 | | | | | |
| 6 | 5.6482 | 5.5608 | 5.4712 | 5.3792 | 5.2848 | 5.1857 | 5.0836 | 4.9903 | 4.9087 | 4.8329 | | | | | |
| 7 | 6.5418 | 6.4334 | 6.3263 | 6.2169 | 6.1028 | 5.9922 | 5.8839 | 5.7813 | 5.6880 | 5.6004 | | | | | |
| 8 | 7.4144 | 7.2885 | 7.1641 | 7.0350 | 6.9093 | 6.7924 | 6.6749 | 6.5606 | 6.4555 | 6.3584 | | | | | |
| 9 | 8.2695 | 8.1263 | 7.9821 | 7.8415 | 7.7096 | 7.5835 | 7.4542 | 7.3281 | 7.2135 | 7.1046 | | | | | |
| 10 | 9.1073 | 8.9443 | 8.7886 | 8.6417 | 8.5006 | 8.3628 | 8.2217 | 8.0862 | 7.9597 | 7.8369 | | | | | |
| 11 | 9.9253 | 9.7509 | 9.5888 | 9.4328 | 9.2799 | 9.1303 | 8.9797 | 8.8324 | 8.6920 | 8.5575 | | | | | |
| 12 | 10.7318 | 10.5511 | 10.3799 | 10.2121 | 10.0474 | 9.8883 | 9.7259 | 9.5647 | 9.4126 | 9.2665 | | | | | |
| 13 | 11.5320 | 11.3421 | 11.1592 | 10.9796 | 10.8054 | 10.6345 | 10.4582 | 10.2852 | 10.1215 | 9.9638 | | | | | |
| 14 | 12.3231 | 12.1214 | 11.9267 | 11.7376 | 11.5516 | 11.3668 | 11.1788 | 10.9942 | 10.8189 | 10.6496 | | | | | |
| 15 | 13.1024 | 12.8889 | 12.6847 | 12.4838 | 12.2839 | 12.0874 | 11.8878 | 11.6915 | 11.5047 | 11.3239 | | | | | |
| 16 | 13.8699 | 13.6469 | 13.4309 | 13.2161 | 13.0045 | 12.7963 | 12.5851 | 12.3773 | 12.1789 | 11.9868 | | | | | |
| 17 | 14.6279 | 14.3932 | 14.1632 | 13.9367 | 13.7135 | 13.4936 | 13.2709 | 13.0516 | 12.8418 | 12.6383 | | | | | |
| 18 | 15.3741 | 15.1254 | 14.8838 | 14.6456 | 14.4108 | 14.1794 | 13.9452 | 13.7145 | 13.4934 | 13.2786 | | | | | |
| 19 | 16.1064 | 15.8460 | 15.5927 | 15.3429 | 15.0966 | 14.8537 | 14.6081 | 14.3661 | 14.1337 | 13.9078 | | | | | |
| 20 | 16.8270 | 16.5550 | 16.2901 | 16.0287 | 15.7709 | 15.5166 | 15.2596 | 15.0064 | 14.7628 | 14.5274 | | | | | |
| 21 | 17.5359 | 17.2523 | 16.9759 | 16.7030 | 16.4338 | 16.1682 | 15.8999 | 15.6355 | 15.3825 | 15.1375 | | | | | |
| 22 | 18.2333 | 17.9381 | 17.6502 | 17.3659 | 17.0853 | 16.8085 | 16.5291 | 16.2551 | 15.9926 | 15.7367 | | | | | |
| 23 | 18.9191 | 18.6124 | 18.3131 | 18.0175 | 17.7256 | 17.4376 | 17.1487 | 16.8652 | 16.5918 | 16.3250 | | | | | |
| 24 | 19.5934 | 19.2753 | 18.9646 | 18.6578 | 18.3548 | 18.0572 | 17.7588 | 17.4644 | 17.1801 | 16.9039 | | | | | |
| 25 | 20.2563 | 19.9268 | 19.6049 | 19.2869 | 18.9744 | 18.6674 | 18.3580 | 18.0527 | 17.7590 | 17.4735 | | | | | |
| 30 | 23.4070 | 23.0252 | 22.6513 | 22.2831 | 21.9205 | 21.5637 | 21.2062 | 20.8547 | 20.5151 | 20.1842 | | | | | |
| 35 | 26.3034 | 25.8735 | 25.4532 | 25.0391 | 24.6312 | 24.2297 | 23.8282 | 23.4334 | 23.0512 | 22.6785 | | | | | |
| 40 | 28.9693 | 28.4954 | 28.0319 | 27.5753 | 27.1255 | 26.6828 | 26.2408 | 25.8062 | 25.3849 | 24.9737 | | | | | |
| 45 | 31.4224 | 30.9081 | 30.4047 | 29.9089 | 29.4207 | 28.9401 | 28.4609 | 27.9896 | 27.5322 | 27.0856 | | | | | |
| 50 | 33.6797 | 33.1281 | 32.5881 | 32.0563 | 31.5326 | 31.0172 | 30.5037 | 29.9987 | 29.5082 | 29.0290 | | | | | |

Notes: <1> Data Based on Assumed DOS of Apr 1994.

<2> Authorized Period of Use of Table is Oct 1993 through Sep 1994.

<3> Tabulated Data Based on Criteria Contained in 18 Mar 91 Tri-Service Memorandum of Agreement on Criteria/Standards for EA/LCC for MILCON Design.

Data Based on Discount Rate of 3.1% and DOE Projections of Future Price Level Changes for Industrial Sector (NIST Annual Supplement to Handbook 135, Oct 1993).

<3> Region 4: MT, ID, WY, CO, NM, AZ, UT, NV, WA, OR, CA, AK, HI

Table E-3-LP-4. Present Worth Factors--Liquefied Petroleum Gas (LPG)

| Number of Payments | Beneficial Occupancy Date | | | | | | | | | | | | | | | | | | | |
|--------------------|---------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|--|--|--|--|--|--|--|--|--|--|
| | Oct 1994 | Oct 1995 | Oct 1996 | Oct 1997 | Oct 1998 | Oct 1999 | Oct 2000 | Oct 2001 | Oct 2002 | Oct 2003 | | | | | | | | | | |
| 1 | 0.9577 | 0.9258 | 0.9057 | 0.8892 | 0.8757 | 0.8649 | 0.8547 | 0.8444 | 0.8332 | 0.8178 | | | | | | | | | | |
| 2 | 1.8835 | 1.8315 | 1.7948 | 1.7648 | 1.7405 | 1.7196 | 1.6991 | 1.6776 | 1.6510 | 1.6177 | | | | | | | | | | |
| 3 | 2.7892 | 2.7207 | 2.6705 | 2.6297 | 2.5953 | 2.5640 | 2.5323 | 2.4954 | 2.4509 | 2.4010 | | | | | | | | | | |
| 4 | 3.6784 | 3.5963 | 3.5354 | 3.4844 | 3.4396 | 3.3972 | 3.3501 | 3.2953 | 3.2342 | 3.1695 | | | | | | | | | | |
| 5 | 4.5540 | 4.4612 | 4.3901 | 4.3288 | 4.2728 | 4.2150 | 4.1500 | 4.0785 | 4.0027 | 3.9246 | | | | | | | | | | |
| 6 | 5.4189 | 5.3159 | 5.2345 | 5.1620 | 5.0906 | 5.0149 | 4.9333 | 4.8471 | 4.7578 | 4.6668 | | | | | | | | | | |
| 7 | 6.2736 | 6.1603 | 6.0677 | 5.9798 | 5.8905 | 5.7981 | 5.7018 | 5.6022 | 5.5000 | 5.3962 | | | | | | | | | | |
| 8 | 7.1180 | 6.9935 | 6.8855 | 6.7797 | 6.6738 | 6.5667 | 6.4569 | 6.3444 | 6.2294 | 6.1094 | | | | | | | | | | |
| 9 | 7.9512 | 7.8113 | 7.6854 | 7.5630 | 7.4423 | 7.3218 | 7.1991 | 7.0738 | 6.9426 | 6.8037 | | | | | | | | | | |
| 10 | 8.7690 | 8.6112 | 8.4686 | 8.3315 | 8.1975 | 8.0640 | 7.9285 | 7.7870 | 7.6369 | 7.4794 | | | | | | | | | | |
| 11 | 9.5689 | 9.3945 | 9.2372 | 9.0866 | 8.9397 | 8.7934 | 8.6417 | 8.4813 | 8.3126 | 8.1369 | | | | | | | | | | |
| 12 | 10.3522 | 10.1630 | 9.9923 | 9.8289 | 9.6690 | 9.5066 | 9.3360 | 9.1570 | 8.9700 | 8.7765 | | | | | | | | | | |
| 13 | 11.1207 | 10.9182 | 10.7345 | 10.5582 | 10.3823 | 10.2009 | 10.0117 | 9.8144 | 9.6097 | 9.3990 | | | | | | | | | | |
| 14 | 11.8759 | 11.6604 | 11.4639 | 11.2715 | 11.0765 | 10.8766 | 10.6691 | 10.4541 | 10.2322 | 10.0049 | | | | | | | | | | |
| 15 | 12.6181 | 12.3897 | 12.1771 | 11.9657 | 11.7522 | 11.5340 | 11.3088 | 11.0766 | 10.8381 | 10.5944 | | | | | | | | | | |
| 16 | 13.3474 | 13.1030 | 12.8714 | 12.6414 | 12.4097 | 12.1737 | 11.9313 | 11.6825 | 11.4276 | 11.1679 | | | | | | | | | | |
| 17 | 14.0607 | 13.7972 | 13.5471 | 13.2989 | 13.0493 | 12.7962 | 12.5372 | 12.2720 | 12.0011 | 11.7261 | | | | | | | | | | |
| 18 | 14.7549 | 14.4729 | 14.2045 | 13.9385 | 13.6719 | 13.4021 | 13.1267 | 12.8455 | 12.5593 | 12.2693 | | | | | | | | | | |
| 19 | 15.4306 | 15.1304 | 14.8442 | 14.5610 | 14.2778 | 13.9916 | 13.7002 | 13.4037 | 13.1025 | 12.7978 | | | | | | | | | | |
| 20 | 16.0881 | 15.7700 | 15.4667 | 15.1670 | 14.8673 | 14.5651 | 14.2584 | 13.9469 | 13.6310 | 13.3121 | | | | | | | | | | |
| 21 | 16.7277 | 16.3925 | 16.0726 | 15.7564 | 15.4408 | 15.1233 | 14.8016 | 14.4754 | 14.1453 | 13.8127 | | | | | | | | | | |
| 22 | 17.3502 | 16.9985 | 16.6621 | 16.3300 | 15.9989 | 15.6665 | 15.3301 | 14.9897 | 14.6459 | 14.2996 | | | | | | | | | | |
| 23 | 17.9562 | 17.5880 | 17.2356 | 16.8881 | 16.5422 | 16.1950 | 15.8444 | 15.4903 | 15.1328 | 14.7735 | | | | | | | | | | |
| 24 | 18.5457 | 18.1615 | 17.7938 | 17.4313 | 17.0707 | 16.7093 | 16.3450 | 15.9772 | 15.6067 | 15.2347 | | | | | | | | | | |
| 25 | 19.1192 | 18.7196 | 18.3370 | 17.9598 | 17.5850 | 17.2099 | 16.8319 | 16.4511 | 16.0679 | 15.6835 | | | | | | | | | | |
| 30 | 21.7639 | 21.2931 | 20.8412 | 20.3967 | 19.9563 | 19.5174 | 19.0775 | 18.6364 | 18.1945 | 17.7530 | | | | | | | | | | |
| 35 | 24.0714 | 23.5388 | 23.0265 | 22.5233 | 22.0258 | 21.5313 | 21.0374 | 20.5436 | 20.0505 | 19.5591 | | | | | | | | | | |
| 40 | 26.0854 | 25.4986 | 24.9337 | 24.3793 | 23.8319 | 23.2889 | 22.7477 | 22.2080 | 21.6702 | 21.1353 | | | | | | | | | | |
| 45 | 27.8429 | 27.2089 | 26.5981 | 25.9990 | 25.4081 | 24.8228 | 24.2404 | 23.6606 | 23.0837 | 22.5109 | | | | | | | | | | |
| 50 | 29.3768 | 28.7016 | 28.0507 | 27.4125 | 26.7837 | 26.1614 | 25.5431 | 24.9283 | 24.3174 | 23.7114 | | | | | | | | | | |

Notes: <1> Data Based on Assumed DOS of Apr 1994.

<2> Authorized Period of Use of Table is Oct 1993 through Sep 1994.

<3> Tabulated Data Based on Criteria Contained in 18 Mar 91 Tri-Service Memorandum of Agreement on Criteria/Standards for EA/LCC for MILCON Design.

Data Based on Discount Rate of 3.1% and DOE Projections of Future Price Level Changes for Residential Sector (NIST Annual Supplement to Handbook 135, Oct 1993).

<4> Region 4: MT, ID, WY, CO, NM, AZ, UT, NV, WA, OR, CA, AK, HI

Table E-3-EL-5. Present Worth Factors--Electricity

| Number of Payments | Beneficial Occupancy Date | | | | | | | | | | | |
|--------------------------|---------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|--|--|
| | Oct 1994 | Oct 1995 | Oct 1996 | Oct 1997 | Oct 1998 | Oct 1999 | Oct 2000 | Oct 2001 | Oct 2002 | Oct 2003 | | |
| 1 | 0.9726 | 0.9446 | 0.9162 | 0.8919 | 0.8706 | 0.8532 | 0.8350 | 0.8141 | 0.7953 | 0.7779 | | |
| 2 | 1.9172 | 1.8608 | 1.8081 | 1.7626 | 1.7239 | 1.6882 | 1.6491 | 1.6094 | 1.5732 | 1.5365 | | |
| 3 | 2.8333 | 2.7527 | 2.6788 | 2.6158 | 2.5588 | 2.5023 | 2.4443 | 2.3873 | 2.3318 | 2.2741 | | |
| 4 | 3.7253 | 3.6234 | 3.5320 | 3.4508 | 3.3729 | 3.2976 | 3.2222 | 3.1459 | 3.0694 | 2.9915 | | |
| 5 | 4.5959 | 4.4766 | 4.3670 | 4.2649 | 4.1682 | 4.0754 | 3.9808 | 3.8835 | 3.7868 | 3.6892 | | |
| 6 | 5.4491 | 5.3115 | 5.1811 | 5.0601 | 4.9461 | 4.8340 | 4.7185 | 4.6009 | 4.4845 | 4.3655 | | |
| 7 | 6.2841 | 6.1256 | 5.9763 | 5.8380 | 5.7047 | 5.5717 | 5.4358 | 5.2986 | 5.1608 | 5.0215 | | |
| 8 | 7.0982 | 6.9209 | 6.7542 | 6.5966 | 6.4424 | 6.2890 | 6.1336 | 5.9749 | 5.8168 | 5.6602 | | |
| 9 | 7.8935 | 7.6988 | 7.5128 | 7.3343 | 7.1597 | 6.9868 | 6.8099 | 6.6309 | 6.4555 | 6.2819 | | |
| 10 | 8.6714 | 8.4574 | 8.2505 | 8.0516 | 7.8574 | 7.6631 | 7.4659 | 7.2696 | 7.0771 | 6.8869 | | |
| 11 | 9.4300 | 9.1951 | 8.9678 | 8.7494 | 8.5337 | 8.3191 | 8.1046 | 7.8912 | 7.6822 | 7.4758 | | |
| 12 | 10.1676 | 9.9124 | 9.6655 | 9.4257 | 9.1897 | 8.9578 | 8.7262 | 8.4963 | 8.2710 | 8.0489 | | |
| 13 | 10.8850 | 10.6101 | 10.3419 | 10.0817 | 9.8284 | 9.5794 | 9.3312 | 9.0852 | 8.8442 | 8.6067 | | |
| 14 | 11.5827 | 11.2865 | 10.9979 | 10.7204 | 10.4501 | 10.1845 | 9.9201 | 9.6583 | 9.4020 | 9.1496 | | |
| 15 | 12.2590 | 11.9425 | 11.6366 | 11.3420 | 11.0551 | 10.7733 | 10.4932 | 10.2161 | 9.9448 | 9.6781 | | |
| 16 | 12.9150 | 12.5812 | 12.2582 | 11.9470 | 11.6440 | 11.3464 | 11.0510 | 10.7589 | 10.4734 | 10.1924 | | |
| 17 | 13.5537 | 13.2028 | 12.8632 | 12.5359 | 12.2171 | 11.9042 | 11.5939 | 11.2875 | 10.9877 | 10.6930 | | |
| 18 | 14.1754 | 13.8078 | 13.4521 | 13.1090 | 12.7749 | 12.4471 | 12.1224 | 11.8018 | 11.4883 | 11.1803 | | |
| 19 | 14.7804 | 14.3967 | 14.0252 | 13.6668 | 13.3178 | 12.9756 | 12.6368 | 12.3024 | 11.9756 | 11.6547 | | |
| 20 | 15.3693 | 14.9698 | 14.5830 | 14.2097 | 13.8463 | 13.4900 | 13.1373 | 12.7897 | 12.4500 | 12.1163 | | |
| 21 | 15.9424 | 15.5276 | 15.1259 | 14.7382 | 14.3606 | 13.9906 | 13.6246 | 13.2641 | 12.9116 | 12.5656 | | |
| 22 | 16.5002 | 16.0705 | 15.6544 | 15.2526 | 14.8612 | 14.4779 | 14.0990 | 13.7257 | 13.3609 | 13.0030 | | |
| 23 | 17.0431 | 16.5990 | 16.1688 | 15.7531 | 15.3485 | 14.9522 | 14.5607 | 14.1750 | 13.7982 | 13.4287 | | |
| 24 | 17.5716 | 17.1134 | 16.6693 | 16.2404 | 15.8229 | 15.4139 | 15.0100 | 14.6123 | 14.2240 | 13.8431 | | |
| 25 | 18.0859 | 17.6139 | 17.1566 | 16.7148 | 16.2845 | 15.8632 | 15.4473 | 15.0381 | 14.6384 | 14.2464 | | |
| 30 | 20.4591 | 19.9239 | 19.4050 | 18.9032 | 18.4146 | 17.9363 | 17.4651 | 17.0020 | 16.5498 | 16.1068 | | |
| 35 | 22.5323 | 21.9417 | 21.3689 | 20.8146 | 20.2750 | 19.7472 | 19.2278 | 18.7177 | 18.2199 | 17.7324 | | |
| 40 | 24.3432 | 23.7044 | 23.0847 | 22.4848 | 21.9007 | 21.3296 | 20.7681 | 20.2170 | 19.6793 | 19.1530 | | |
| 45 | 25.9256 | 25.2447 | 24.5840 | 23.9442 | 23.3212 | 22.7124 | 22.1141 | 21.5272 | 20.9546 | 20.3943 | | |
| 50 | 27.3083 | 26.5906 | 25.8941 | 25.2194 | 24.5625 | 23.9207 | 23.2902 | 22.6720 | 22.0689 | 21.4790 | | |

Notes: <1> Data Based on Assumed DOS of Apr 1994.

<2> Authorized Period of Use of Table is Oct 1993 through Sep 1994.
 Tabulated Data Based on Criteria Contained in 18 Mar 91 Tri-Service Memorandum
 of Agreement on Criteria/Standards for EA/LCC for MILCON Design.
 Data Based on Discount Rate of 3.1% and DOE Projections of Future Price Level Changes
 for Industrial Sector (NIST Annual Supplement to Handbook 135, Oct 1993).

Table E-3-DO-5. Present Worth Factors--Distillate Oil

| Number of Payments | Beneficial Occupancy Date | | | | | | | | | | | |
|--------------------|---------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|--|--|
| | Oct 1994 | Oct 1995 | Oct 1996 | Oct 1997 | Oct 1998 | Oct 1999 | Oct 2000 | Oct 2001 | Oct 2002 | Oct 2003 | | |
| 1 | 0.9709 | 0.9474 | 0.9318 | 0.9216 | 0.9164 | 0.9148 | 0.9134 | 0.9120 | 0.9084 | 0.8968 | | |
| 2 | 1.9183 | 1.8792 | 1.8534 | 1.8380 | 1.8312 | 1.8283 | 1.8255 | 1.8205 | 1.8052 | 1.7781 | | |
| 3 | 2.8501 | 2.8008 | 2.7698 | 2.7528 | 2.7447 | 2.7403 | 2.7339 | 2.7172 | 2.6865 | 2.6448 | | |
| 4 | 3.7717 | 3.7172 | 3.6846 | 3.6663 | 3.6567 | 3.6488 | 3.6307 | 3.5986 | 3.5533 | 3.4997 | | |
| 5 | 4.6881 | 4.6320 | 4.5981 | 4.5783 | 4.5651 | 4.5455 | 4.5120 | 4.4653 | 4.4082 | 4.3454 | | |
| 6 | 5.6029 | 5.5455 | 5.5101 | 5.4867 | 5.4619 | 5.4269 | 5.3787 | 5.3202 | 5.2538 | 5.1822 | | |
| 7 | 6.5164 | 6.4575 | 6.4185 | 6.3835 | 6.3432 | 6.2936 | 6.2336 | 6.1658 | 6.0906 | 6.0099 | | |
| 8 | 7.4284 | 7.3659 | 7.3153 | 7.2648 | 7.2100 | 7.1485 | 7.0793 | 7.0026 | 6.9184 | 6.8230 | | |
| 9 | 8.3368 | 8.2627 | 8.1966 | 8.1316 | 8.0649 | 7.9941 | 7.9161 | 7.8304 | 7.7315 | 7.6163 | | |
| 10 | 9.2336 | 9.1440 | 9.0634 | 8.9865 | 8.9105 | 8.8309 | 8.7438 | 8.6435 | 8.5248 | 8.3909 | | |
| 11 | 10.1149 | 10.0108 | 9.9183 | 9.8321 | 9.7473 | 9.6587 | 9.5569 | 9.4368 | 9.2993 | 9.1471 | | |
| 12 | 10.9817 | 10.8657 | 10.7639 | 10.6689 | 10.5751 | 10.4718 | 10.3503 | 10.2114 | 10.0555 | 9.8853 | | |
| 13 | 11.8366 | 11.7113 | 11.6007 | 11.4967 | 11.3882 | 11.2651 | 11.1248 | 10.9675 | 10.7937 | 10.6060 | | |
| 14 | 12.6822 | 12.5481 | 12.4285 | 12.3098 | 12.1815 | 12.0396 | 11.8810 | 11.7058 | 11.5144 | 11.3090 | | |
| 15 | 13.5190 | 13.3759 | 13.2416 | 13.1031 | 12.9560 | 12.7958 | 12.6192 | 12.4265 | 12.2174 | 11.9952 | | |
| 16 | 14.3468 | 14.1890 | 14.0349 | 13.8776 | 13.7122 | 13.5341 | 13.3399 | 13.1295 | 12.9037 | 12.6651 | | |
| 17 | 15.1599 | 14.9823 | 14.8094 | 14.6338 | 14.4505 | 14.2547 | 14.0429 | 13.8157 | 13.5735 | 13.3189 | | |
| 18 | 15.9532 | 15.7568 | 15.5656 | 15.3721 | 15.1711 | 14.9578 | 14.7291 | 14.4855 | 14.2273 | 13.9574 | | |
| 19 | 16.7277 | 16.5130 | 16.3039 | 16.0927 | 15.8741 | 15.6440 | 15.3990 | 15.1393 | 14.8659 | 14.5807 | | |
| 20 | 17.4839 | 17.2512 | 17.0245 | 16.7957 | 16.5604 | 16.3138 | 16.0528 | 15.7779 | 15.4891 | 15.1889 | | |
| 21 | 18.2222 | 17.9719 | 17.7275 | 17.4820 | 17.2302 | 16.9676 | 16.6913 | 16.4011 | 16.0973 | 15.7829 | | |
| 22 | 18.9428 | 18.6749 | 18.4138 | 18.1518 | 17.8840 | 17.6062 | 17.3146 | 17.0094 | 16.6913 | 16.3625 | | |
| 23 | 19.6458 | 19.3612 | 19.0836 | 18.8056 | 18.5226 | 18.2294 | 17.9228 | 17.6034 | 17.2710 | 16.9282 | | |
| 24 | 20.3321 | 20.0310 | 19.7374 | 19.4442 | 19.1458 | 18.8377 | 18.5168 | 18.1830 | 17.8366 | 17.4805 | | |
| 25 | 21.0019 | 20.6848 | 20.3760 | 20.0674 | 19.7541 | 19.4316 | 19.0964 | 18.7486 | 18.3889 | 18.0198 | | |
| 30 | 24.1197 | 23.7285 | 23.3467 | 22.9672 | 22.5849 | 22.1947 | 21.7933 | 21.3807 | 20.9574 | 20.5259 | | |
| 35 | 26.8828 | 26.4253 | 25.9788 | 25.5358 | 25.0910 | 24.6399 | 24.1789 | 23.7084 | 23.2285 | 22.7417 | | |
| 40 | 29.3279 | 28.8110 | 28.3065 | 27.8068 | 27.3068 | 26.8018 | 26.2883 | 25.7664 | 25.2365 | 24.7008 | | |
| 45 | 31.4899 | 30.9203 | 30.3645 | 29.8148 | 29.2660 | 28.7133 | 28.1533 | 27.5861 | 27.0119 | 26.4331 | | |
| 50 | 33.4014 | 32.7853 | 32.1842 | 31.5902 | 30.9982 | 30.4034 | 29.8023 | 29.1950 | 28.5817 | 27.9647 | | |

Notes: <1> Data Based on Assumed DOS of Apr 1994.

<2> Authorized Period of Use of Table is Oct 1993 through Sep 1994.

Tabulated Data Based on Criteria Contained in 18 Mar 91 Tri-Service Memorandum of Agreement on Criteria/Standards for EA/LCC for MILCON Design.

Data Based on Discount Rate of 3.1% and DOE Projections of Future Price Level Changes for Industrial Sector (NIST Annual Supplement to Handbook 135, Oct 1993).

Table E-3-RO-5. Present Worth Factors--Residual Oil

| Number of Payments | Beneficial Occupancy Date | | | | | | | | | | | | | | | | | | | |
|--------------------|---------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|--|--|--|--|--|--|--|--|--|--|
| | Oct 1994 | Oct 1995 | Oct 1996 | Oct 1997 | Oct 1998 | Oct 1999 | Oct 2000 | Oct 2001 | Oct 2002 | Oct 2003 | | | | | | | | | | |
| 1 | 1.0015 | 0.9940 | 0.9844 | 0.9836 | 0.9878 | 0.9965 | 1.0080 | 1.0193 | 1.0252 | 1.0184 | | | | | | | | | | |
| 2 | 1.9956 | 1.9785 | 1.9680 | 1.9713 | 1.9843 | 2.0045 | 2.0273 | 2.0445 | 2.0436 | 2.0233 | | | | | | | | | | |
| 3 | 2.9800 | 2.9620 | 2.9557 | 2.9678 | 2.9923 | 3.0238 | 3.0525 | 3.0629 | 3.0485 | 3.0170 | | | | | | | | | | |
| 4 | 3.9635 | 3.9498 | 3.9522 | 3.9759 | 4.0116 | 4.0490 | 4.0709 | 4.0678 | 4.0422 | 4.0027 | | | | | | | | | | |
| 5 | 4.9513 | 4.9463 | 4.9603 | 4.9952 | 5.0368 | 5.0674 | 5.0758 | 5.0615 | 5.0279 | 4.9833 | | | | | | | | | | |
| 6 | 5.9478 | 5.9543 | 5.9796 | 6.0203 | 6.0552 | 6.0723 | 6.0695 | 6.0472 | 6.0084 | 5.9604 | | | | | | | | | | |
| 7 | 6.9558 | 6.9736 | 7.0048 | 7.0387 | 7.0601 | 7.0660 | 7.0552 | 7.0277 | 6.9855 | 6.9343 | | | | | | | | | | |
| 8 | 7.9751 | 7.9988 | 8.0232 | 8.0437 | 8.0538 | 8.0517 | 8.0358 | 8.0048 | 7.9595 | 7.9025 | | | | | | | | | | |
| 9 | 9.0003 | 9.0172 | 9.0281 | 9.0373 | 9.0395 | 9.0323 | 9.0129 | 8.9788 | 8.9277 | 8.8614 | | | | | | | | | | |
| 10 | 10.0187 | 10.0221 | 10.0218 | 10.0230 | 10.0200 | 10.0094 | 9.9868 | 9.9470 | 9.8865 | 9.8105 | | | | | | | | | | |
| 11 | 11.0236 | 11.0158 | 11.0074 | 11.0036 | 10.9971 | 10.9833 | 10.9550 | 10.9058 | 10.8357 | 10.7498 | | | | | | | | | | |
| 12 | 12.0173 | 12.0015 | 11.9880 | 11.9807 | 11.9711 | 11.9515 | 11.9139 | 11.8550 | 11.7750 | 11.6797 | | | | | | | | | | |
| 13 | 13.0030 | 12.9821 | 12.9651 | 12.9547 | 12.9393 | 12.9104 | 12.8630 | 12.7942 | 12.7049 | 12.6001 | | | | | | | | | | |
| 14 | 13.9836 | 13.9592 | 13.9391 | 13.9228 | 13.8981 | 13.8595 | 13.8023 | 13.7242 | 13.6252 | 13.5106 | | | | | | | | | | |
| 15 | 14.9607 | 14.9331 | 14.9073 | 14.8817 | 14.8473 | 14.7988 | 14.7322 | 14.6445 | 14.5357 | 14.4118 | | | | | | | | | | |
| 16 | 15.9347 | 15.9013 | 15.8661 | 15.8309 | 15.7865 | 15.7287 | 15.6526 | 15.5550 | 15.4370 | 15.3043 | | | | | | | | | | |
| 17 | 16.9028 | 16.8601 | 16.8153 | 16.7701 | 16.7165 | 16.6491 | 16.5631 | 16.4563 | 16.3295 | 16.1877 | | | | | | | | | | |
| 18 | 17.8617 | 17.8093 | 17.7545 | 17.7000 | 17.6368 | 17.5596 | 17.4643 | 17.3487 | 17.2129 | 17.0619 | | | | | | | | | | |
| 19 | 18.8108 | 18.7486 | 18.6845 | 18.6204 | 18.5473 | 18.4608 | 18.3568 | 18.2322 | 18.0871 | 17.9273 | | | | | | | | | | |
| 20 | 19.7501 | 19.6785 | 19.6048 | 19.5309 | 19.4486 | 19.3533 | 19.2402 | 19.1064 | 18.9525 | 18.7843 | | | | | | | | | | |
| 21 | 20.6800 | 20.5989 | 20.5153 | 20.4321 | 20.3411 | 20.2367 | 20.1144 | 19.9718 | 19.8095 | 19.6327 | | | | | | | | | | |
| 22 | 21.6004 | 21.5094 | 21.4165 | 21.3246 | 21.2245 | 21.1109 | 20.9798 | 20.8288 | 20.6579 | 20.4722 | | | | | | | | | | |
| 23 | 22.5109 | 22.4106 | 22.3090 | 22.2081 | 22.0987 | 21.9763 | 21.8368 | 21.6771 | 21.4973 | 21.3032 | | | | | | | | | | |
| 24 | 23.4121 | 23.3031 | 23.1925 | 23.0822 | 22.9641 | 22.8333 | 22.6852 | 22.5166 | 22.3283 | 22.1261 | | | | | | | | | | |
| 25 | 24.3046 | 24.1865 | 24.0667 | 23.9476 | 23.8211 | 23.6817 | 23.5247 | 23.3476 | 23.1512 | 22.9406 | | | | | | | | | | |
| 30 | 28.6330 | 28.4710 | 28.3079 | 28.1464 | 27.9774 | 27.7955 | 27.5973 | 27.3799 | 27.1436 | 26.8941 | | | | | | | | | | |
| 35 | 32.7468 | 32.5436 | 32.3401 | 32.1388 | 31.9308 | 31.7113 | 31.4757 | 31.2212 | 30.9484 | 30.6625 | | | | | | | | | | |
| 40 | 36.6626 | 36.4219 | 36.1815 | 35.9435 | 35.6993 | 35.4437 | 35.1725 | 34.8828 | 34.5750 | 34.2545 | | | | | | | | | | |
| 45 | 40.3950 | 40.1188 | 39.8431 | 39.5701 | 39.2913 | 39.0015 | 38.6963 | 38.3730 | 38.0319 | 37.6784 | | | | | | | | | | |
| 50 | 43.9528 | 43.6426 | 43.3333 | 43.0270 | 42.7152 | 42.3927 | 42.0552 | 41.6998 | 41.3270 | 40.9420 | | | | | | | | | | |

Notes: <1> Data Based on Assumed DOS of Apr 1994.

Authorized Period of Use of Table is Oct 1993 through Sep 1994.

<2> Tabulated Data Based on Criteria Contained in 18 Mar 91 Tri-Service Memorandum of Agreement on Criteria/Standards for EA/LCC for MILCON Design.

Data Based on Discount Rate of 3.1% and DOE Projections of Future Price Level Changes for Industrial Sector (NIST Annual Supplement to Handbook 135, Oct 1993).

Table E-3-NG-5. Present Worth Factors--Natural Gas

| Number of Payments | Beneficial Occupancy Date | | | | | | | | | | | | | | | | | | | |
|--------------------------|---------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|--|--|--|--|--|--|--|--|--|--|
| | Oct 1994 | Oct 1995 | Oct 1996 | Oct 1997 | Oct 1998 | Oct 1999 | Oct 2000 | Oct 2001 | Oct 2002 | Oct 2003 | | | | | | | | | | |
| 1 | 1.0055 | 1.0041 | 0.9899 | 0.9855 | 0.9902 | 1.0003 | 1.0129 | 1.0263 | 1.0440 | 1.0575 | | | | | | | | | | |
| 2 | 2.0096 | 1.9940 | 1.9755 | 1.9758 | 1.9906 | 2.0133 | 2.0392 | 2.0703 | 2.1015 | 2.1154 | | | | | | | | | | |
| 3 | 2.9995 | 2.9795 | 2.9657 | 2.9761 | 3.0035 | 3.0395 | 3.0832 | 3.1278 | 3.1594 | 3.1615 | | | | | | | | | | |
| 4 | 3.9850 | 3.9698 | 3.9660 | 3.9890 | 4.0298 | 4.0835 | 4.1407 | 4.1857 | 4.2055 | 4.1922 | | | | | | | | | | |
| 5 | 4.9753 | 4.9701 | 4.9790 | 5.0153 | 5.0738 | 5.1411 | 5.1986 | 5.2317 | 5.2362 | 5.2097 | | | | | | | | | | |
| 6 | 5.9756 | 5.9830 | 6.0052 | 6.0593 | 6.1313 | 6.1989 | 6.2447 | 6.2625 | 6.2537 | 6.2047 | | | | | | | | | | |
| 7 | 6.9885 | 7.0093 | 7.0492 | 7.1168 | 7.1892 | 7.2450 | 7.2754 | 7.2800 | 7.2487 | 7.1728 | | | | | | | | | | |
| 8 | 8.0148 | 8.0533 | 8.1068 | 8.1747 | 8.2352 | 8.2757 | 8.2929 | 8.2750 | 8.2168 | 8.1279 | | | | | | | | | | |
| 9 | 9.0588 | 9.1108 | 9.1646 | 9.2208 | 9.2650 | 9.2932 | 9.2879 | 9.2431 | 9.1719 | 9.0791 | | | | | | | | | | |
| 10 | 10.1163 | 10.1687 | 10.2107 | 10.2515 | 10.2835 | 10.2883 | 10.2560 | 10.1981 | 10.1231 | 10.0269 | | | | | | | | | | |
| 11 | 11.1742 | 11.2148 | 11.2414 | 11.2690 | 11.2785 | 11.2563 | 11.2111 | 11.1494 | 11.0709 | 10.9705 | | | | | | | | | | |
| 12 | 12.2203 | 12.2455 | 12.2589 | 12.2640 | 12.2466 | 12.2114 | 12.1623 | 12.0972 | 12.0145 | 11.9093 | | | | | | | | | | |
| 13 | 13.2510 | 13.2630 | 13.2540 | 13.2321 | 13.2016 | 13.1627 | 13.1101 | 13.0408 | 12.9533 | 12.8436 | | | | | | | | | | |
| 14 | 14.2685 | 14.2580 | 14.2220 | 14.1872 | 14.1529 | 14.1104 | 14.0537 | 13.9796 | 13.8876 | 13.7728 | | | | | | | | | | |
| 15 | 15.2635 | 15.2261 | 15.1771 | 15.1384 | 15.1007 | 15.0540 | 14.9925 | 14.9139 | 14.8168 | 14.6964 | | | | | | | | | | |
| 16 | 16.2316 | 16.1811 | 16.1284 | 16.0862 | 16.0442 | 15.9928 | 15.9268 | 15.8431 | 15.7404 | 15.6138 | | | | | | | | | | |
| 17 | 17.1866 | 17.1324 | 17.0761 | 17.0298 | 16.9831 | 16.9271 | 16.8560 | 16.7666 | 16.6578 | 16.5225 | | | | | | | | | | |
| 18 | 18.1379 | 18.0802 | 18.0197 | 17.9686 | 17.9174 | 17.8563 | 17.7796 | 17.6841 | 17.5665 | 17.4207 | | | | | | | | | | |
| 19 | 19.0857 | 19.0238 | 18.9585 | 18.9029 | 18.8466 | 18.7799 | 18.6970 | 18.5928 | 18.4647 | 18.3089 | | | | | | | | | | |
| 20 | 20.0293 | 19.9626 | 19.8928 | 19.8321 | 19.7701 | 19.6973 | 19.6057 | 19.4910 | 19.3529 | 19.1875 | | | | | | | | | | |
| 21 | 20.9681 | 20.8969 | 20.8220 | 20.7557 | 20.6876 | 20.6060 | 20.5039 | 20.3792 | 20.2315 | 20.0552 | | | | | | | | | | |
| 22 | 21.9024 | 21.8261 | 21.7456 | 21.6731 | 21.5962 | 21.5042 | 21.3921 | 21.2578 | 21.0992 | 20.9104 | | | | | | | | | | |
| 23 | 22.8316 | 22.7497 | 22.6630 | 22.5818 | 22.4944 | 22.3924 | 22.2707 | 22.1254 | 21.9544 | 21.7531 | | | | | | | | | | |
| 24 | 23.7552 | 23.6671 | 23.5717 | 23.4800 | 23.3826 | 23.2711 | 23.1384 | 22.9806 | 22.7971 | 22.5839 | | | | | | | | | | |
| 25 | 24.6726 | 24.5758 | 24.4699 | 24.3682 | 24.2613 | 24.1387 | 23.9936 | 23.8234 | 23.6279 | 23.4034 | | | | | | | | | | |
| 30 | 29.1139 | 28.9636 | 28.8023 | 28.6432 | 28.4771 | 28.2949 | 28.0916 | 27.8649 | 27.6142 | 27.3352 | | | | | | | | | | |
| 35 | 33.2702 | 33.0617 | 32.8439 | 32.6295 | 32.4089 | 32.1733 | 31.9174 | 31.6387 | 31.3368 | 31.0072 | | | | | | | | | | |
| 40 | 37.1486 | 36.8875 | 36.6177 | 36.3521 | 36.0810 | 35.7955 | 35.4904 | 35.1632 | 34.8134 | 34.4367 | | | | | | | | | | |
| 45 | 40.7708 | 40.4605 | 40.1422 | 39.8287 | 39.5104 | 39.1784 | 38.8274 | 38.4549 | 38.0604 | 37.6396 | | | | | | | | | | |
| 50 | 44.1537 | 43.7975 | 43.4338 | 43.0757 | 42.7133 | 42.3378 | 41.9439 | 41.5291 | 41.0928 | 40.6308 | | | | | | | | | | |

Notes: <1> Data Based on Assumed DOS of Apr 1994.

<2> Authorized Period of Use of Table is Oct 1993 through Sep 1994.
 Tabulated Data Based on Criteria Contained in 18 Mar 91 Tri-Service Memorandum
 of Agreement on Criteria/Standards for EA/LCC for MILCON Design.
 Data Based on Discount Rate of 3.1% and DOE Projections of Future Price Level Changes
 for Industrial Sector (NIST Annual Supplement to Handbook 135, Oct 1993).

Table E-3-SC-5. Present Worth Factors--Steam Coal

| Number of Payments | Beneficial Occupancy Date | | | | | | | | | | | | | | |
|--------------------|---------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|--|--|--|--|--|
| | Oct 1994 | Oct 1995 | Oct 1996 | Oct 1997 | Oct 1998 | Oct 1999 | Oct 2000 | Oct 2001 | Oct 2002 | Oct 2003 | | | | | |
| 1 | 0.9861 | 0.9752 | 0.9611 | 0.9411 | 0.9242 | 0.9158 | 0.9045 | 0.8877 | 0.8712 | 0.8548 | | | | | |
| 2 | 1.9613 | 1.9364 | 1.9023 | 1.8653 | 1.8401 | 1.8203 | 1.7923 | 1.7589 | 1.7260 | 1.6935 | | | | | |
| 3 | 2.9225 | 2.8775 | 2.8265 | 2.7812 | 2.7446 | 2.7081 | 2.6634 | 2.6138 | 2.5647 | 2.5230 | | | | | |
| 4 | 3.8636 | 3.8017 | 3.7423 | 3.6857 | 3.6323 | 3.5793 | 3.5183 | 3.4524 | 3.3942 | 3.3434 | | | | | |
| 5 | 4.7878 | 4.7176 | 4.6468 | 4.5734 | 4.5035 | 4.4341 | 4.3569 | 4.2819 | 4.2145 | 4.1499 | | | | | |
| 6 | 5.7036 | 5.6221 | 5.5346 | 5.4446 | 5.3583 | 5.2727 | 5.1864 | 5.1023 | 5.0211 | 4.9469 | | | | | |
| 7 | 6.6081 | 6.5098 | 6.4058 | 6.2994 | 6.1970 | 6.1023 | 6.0068 | 5.9088 | 5.8181 | 5.7343 | | | | | |
| 8 | 7.4959 | 7.3810 | 7.2606 | 7.1381 | 7.0265 | 6.9226 | 6.8133 | 6.7059 | 6.6055 | 6.5100 | | | | | |
| 9 | 8.3671 | 8.2358 | 8.0992 | 7.9676 | 7.8469 | 7.7292 | 7.6104 | 7.4933 | 7.3811 | 7.2738 | | | | | |
| 10 | 9.2219 | 9.0745 | 8.9288 | 8.7880 | 8.6534 | 8.5262 | 8.3978 | 8.2689 | 8.1450 | 8.0259 | | | | | |
| 11 | 10.0605 | 9.9040 | 9.7491 | 9.5945 | 9.4504 | 9.3136 | 9.1734 | 9.0328 | 8.8971 | 8.7644 | | | | | |
| 12 | 10.8901 | 10.7244 | 10.5557 | 10.3915 | 10.2378 | 10.0892 | 9.9373 | 9.7848 | 9.6356 | 9.4895 | | | | | |
| 13 | 11.7104 | 11.5309 | 11.3527 | 11.1789 | 11.0135 | 10.8531 | 10.6893 | 10.5234 | 10.3607 | 10.2030 | | | | | |
| 14 | 12.5170 | 12.3279 | 12.1401 | 11.9546 | 11.7773 | 11.6052 | 11.4279 | 11.2485 | 11.0742 | 10.9050 | | | | | |
| 15 | 13.3140 | 13.1153 | 12.9157 | 12.7184 | 12.5294 | 12.3437 | 12.1530 | 11.9620 | 11.7762 | 11.5955 | | | | | |
| 16 | 14.1014 | 13.8910 | 13.6796 | 13.4705 | 13.2679 | 13.0688 | 12.8665 | 12.6639 | 12.4667 | 12.2745 | | | | | |
| 17 | 14.8770 | 14.6548 | 14.4317 | 14.2090 | 13.9930 | 13.7823 | 13.5684 | 13.3544 | 13.1457 | 12.9422 | | | | | |
| 18 | 15.6409 | 15.4069 | 15.1702 | 14.9341 | 14.7065 | 14.4843 | 14.2589 | 14.0335 | 13.8134 | 13.5985 | | | | | |
| 19 | 16.3930 | 16.1454 | 15.8953 | 15.6477 | 15.4085 | 15.1748 | 14.9380 | 14.7011 | 14.4697 | 14.2437 | | | | | |
| 20 | 17.1315 | 16.8705 | 16.6088 | 16.3496 | 16.0990 | 15.8538 | 15.6056 | 15.3575 | 15.1149 | 14.8777 | | | | | |
| 21 | 17.8566 | 17.5840 | 17.3108 | 17.0401 | 16.7780 | 16.5215 | 16.2620 | 16.0026 | 15.7488 | 15.5006 | | | | | |
| 22 | 18.5701 | 18.2860 | 18.0012 | 17.7191 | 17.4457 | 17.1778 | 16.9071 | 16.6366 | 16.3718 | 16.1138 | | | | | |
| 23 | 19.2721 | 18.9765 | 18.6803 | 18.3868 | 18.1020 | 17.8229 | 17.5411 | 17.2595 | 16.9850 | 16.7174 | | | | | |
| 24 | 19.9626 | 19.6555 | 19.3479 | 19.0432 | 18.7472 | 18.4569 | 18.1640 | 17.8728 | 17.5886 | 17.3102 | | | | | |
| 25 | 20.6416 | 20.3232 | 20.0043 | 19.6883 | 19.3812 | 19.0799 | 18.7773 | 18.4764 | 18.1814 | 17.8934 | | | | | |
| 30 | 23.8677 | 23.4948 | 23.1232 | 22.7548 | 22.3969 | 22.0463 | 21.6947 | 21.3450 | 21.0030 | 20.6685 | | | | | |
| 35 | 26.8341 | 26.4122 | 25.9919 | 25.5764 | 25.1720 | 24.7755 | 24.3788 | 23.9848 | 23.5991 | 23.2217 | | | | | |
| 40 | 29.5633 | 29.0963 | 28.6316 | 28.1725 | 27.7252 | 27.2866 | 26.8483 | 26.4135 | 25.9876 | 25.5707 | | | | | |
| 45 | 32.0744 | 31.5659 | 31.0603 | 30.5611 | 30.0742 | 29.5968 | 29.1203 | 28.6480 | 28.1852 | 27.7320 | | | | | |
| 50 | 34.3846 | 33.8379 | 33.2948 | 32.7586 | 32.2355 | 31.7223 | 31.2107 | 30.7038 | 30.2071 | 29.7204 | | | | | |

Notes: <1> Data Based on Assumed DOS of Apr 1994.

<2> Authorized Period of Use of Table is Oct 1993 through Sep 1994.
 Tabulated Data Based on Criteria Contained in 18 Mar 91 Tri-Service Memorandum of Agreement on Criteria/Standards for EA/LCC for MILCON Design.
 Data Based on Discount Rate of 3.1% and DOE Projections of Future Price Level Changes for Industrial Sector (NIST Annual Supplement to Handbook 135, Oct 1993).

Table E-3-LP-5. Present Worth Factors--Liquefied Petroleum Gas (LPG)

| Number Of Payments | Beneficial Occupancy Date | | | | | | | | | | | | | |
|--------------------------|---------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | Oct 1994 | Oct 1995 | Oct 1996 | Oct 1997 | Oct 1998 | Oct 1999 | Oct 2000 | Oct 2001 | Oct 2002 | Oct 2003 | Oct 2004 | Oct 2005 | Oct 2006 | Oct 2007 |
| 1 | 0.9571 | 0.9250 | 0.9055 | 0.8900 | 0.8781 | 0.8687 | 0.8594 | 0.8507 | 0.8411 | 0.8263 | | | | |
| 2 | 1.8820 | 1.8305 | 1.7955 | 1.7681 | 1.7468 | 1.7281 | 1.7102 | 1.6918 | 1.6674 | 1.6354 | | | | |
| 3 | 2.7875 | 2.7205 | 2.6736 | 2.6368 | 2.6062 | 2.5788 | 2.5512 | 2.5181 | 2.4765 | 2.4287 | | | | |
| 4 | 3.6775 | 3.5986 | 3.5423 | 3.4962 | 3.4569 | 3.4199 | 3.3775 | 3.3272 | 3.2697 | 3.2077 | | | | |
| 5 | 4.5556 | 4.4672 | 4.4017 | 4.3469 | 4.2980 | 4.2462 | 4.1866 | 4.1205 | 4.0487 | 3.9739 | | | | |
| 6 | 5.4243 | 5.3267 | 5.2524 | 5.1880 | 5.1243 | 5.0553 | 4.9799 | 4.8995 | 4.8149 | 4.7280 | | | | |
| 7 | 6.2837 | 6.1774 | 6.0935 | 6.0143 | 5.9334 | 5.8486 | 5.7589 | 5.6657 | 5.5691 | 5.4701 | | | | |
| 8 | 7.1345 | 7.0185 | 6.9198 | 6.8234 | 6.7267 | 6.6276 | 6.5251 | 6.4198 | 6.3112 | 6.1963 | | | | |
| 9 | 7.9755 | 7.8448 | 7.7289 | 7.6167 | 7.5057 | 7.3938 | 7.2792 | 7.1619 | 7.0373 | 6.9030 | | | | |
| 10 | 8.8018 | 8.6539 | 8.5222 | 8.3957 | 8.2719 | 8.1479 | 8.0213 | 7.8881 | 7.7440 | 7.5907 | | | | |
| 11 | 9.6109 | 9.4471 | 9.3012 | 9.1619 | 9.0260 | 8.8900 | 8.7475 | 8.5948 | 8.4317 | 8.2599 | | | | |
| 12 | 10.4042 | 10.2261 | 10.0674 | 9.9160 | 9.7681 | 9.6162 | 9.4542 | 9.2825 | 9.1010 | 8.9112 | | | | |
| 13 | 11.1832 | 10.9923 | 10.8215 | 10.6581 | 10.4943 | 10.3228 | 10.1419 | 9.9517 | 9.7523 | 9.5450 | | | | |
| 14 | 11.9494 | 11.7465 | 11.5636 | 11.3843 | 11.2009 | 11.0106 | 10.8112 | 10.6030 | 10.3860 | 10.1617 | | | | |
| 15 | 12.7035 | 12.4886 | 12.2898 | 12.0909 | 11.8887 | 11.6798 | 11.4624 | 11.2368 | 11.0028 | 10.7619 | | | | |
| 16 | 13.4456 | 13.2147 | 12.9965 | 12.7787 | 12.5579 | 12.3311 | 12.0962 | 11.8535 | 11.6029 | 11.3459 | | | | |
| 17 | 14.1718 | 13.9214 | 13.6842 | 13.4479 | 13.2092 | 12.9649 | 12.7130 | 12.4537 | 12.1870 | 11.9142 | | | | |
| 18 | 14.8785 | 14.6091 | 14.3534 | 14.0992 | 13.8430 | 13.5816 | 13.3131 | 13.0377 | 12.7553 | 12.4672 | | | | |
| 19 | 15.5662 | 15.2784 | 15.0047 | 14.7330 | 14.4597 | 14.1818 | 13.8971 | 13.6060 | 13.3083 | 13.0053 | | | | |
| 20 | 16.2355 | 15.9297 | 15.6385 | 15.3497 | 15.0599 | 14.7658 | 14.4654 | 14.1590 | 13.8464 | 13.5289 | | | | |
| 21 | 16.8867 | 16.5634 | 16.2552 | 15.9499 | 15.6439 | 15.3341 | 15.0184 | 14.6971 | 14.3700 | 14.0384 | | | | |
| 22 | 17.5205 | 17.1802 | 16.8554 | 16.5339 | 16.2122 | 15.8871 | 15.5565 | 15.2207 | 14.8795 | 14.5342 | | | | |
| 23 | 18.1373 | 17.7803 | 17.4394 | 17.1022 | 16.7652 | 16.4252 | 16.0801 | 15.7302 | 15.3752 | 15.0166 | | | | |
| 24 | 18.7374 | 18.3644 | 18.0077 | 17.6552 | 17.3033 | 16.9488 | 16.5896 | 16.2260 | 15.8576 | 15.4859 | | | | |
| 25 | 19.3214 | 18.9327 | 18.5607 | 18.1933 | 17.8269 | 17.4583 | 17.0854 | 16.7084 | 16.3270 | 15.9428 | | | | |
| 30 | 22.0139 | 21.5526 | 21.1101 | 20.6739 | 20.2408 | 19.8074 | 19.3715 | 18.9331 | 18.4920 | 18.0495 | | | | |
| 35 | 24.3631 | 23.8387 | 23.3348 | 22.8389 | 22.3475 | 21.8572 | 21.3659 | 20.8736 | 20.3801 | 19.8866 | | | | |
| 40 | 26.4128 | 25.8331 | 25.2753 | 24.7270 | 24.1846 | 23.6447 | 23.1051 | 22.5658 | 22.0266 | 21.4886 | | | | |
| 45 | 28.2003 | 27.5723 | 26.9675 | 26.3735 | 25.7866 | 25.2034 | 24.6217 | 24.0415 | 23.4624 | 22.8857 | | | | |
| 50 | 29.7591 | 29.0889 | 28.4432 | 27.8093 | 27.1836 | 26.5627 | 25.9443 | 25.3283 | 24.7145 | 24.1039 | | | | |

Notes: <1> Data Based on Assumed DOS of Apr 1994.

Authorized Period of Use of Table is Oct 1993 through Sep 1994.

<2> Tabulated Data Based on Criteria Contained in 18 Mar 91 Tri-Service Memorandum of Agreement on Criteria/Standards for EA/LCC for MILCON Design.

Data Based on Discount Rate of 3.1% and DOE Projections of Future Price Level Changes for Residential Sector (NIST Annual Supplement to Handbook 135, Oct 1993).

Part II. Tables of Present Worth Factors for Non-Energy Studies

Part II contains tables of present worth factors for use in computing the life-cycle costs of the competing alternatives in a non-energy study, where energy costs are either nonexistent or equal among all alternatives, in accordance with the provisions of governing DoD criteria (see Appendix A). The discount rates used to compute these present worth factors were taken from Appendix C of OMB Circular A-94 (March 1993). See the Preface of this report for the rationale for using a 4.0% discount rate for studies with short-term total study periods (10 years or less) and a 4.5% discount rate for studies with long-term total study periods (longer than 10 years).

Tables NE-1-1-ST, "Present Worth Factors--One-Time Costs, Zero Differential Escalation (Short Term Studies)" and NE-1-1-LT, "Present Worth Factors--One-Time Costs, Zero Differential Escalation (Long-Term Studies)" provide factors for costs which occur one time or at irregular time intervals throughout the study period and which increase at approximately the rate of general inflation (hence the term "zero differential escalation"). These costs may include construction/acquisition costs, non-annually recurring maintenance costs, major repair and replacement costs, and retention/salvage value or disposal cost. These factors are called "single present worth" (SPW) factors. The present worth of each cost occurrence is found by multiplying that cost, in Date-of-Study (DOS) prices, by the SPW factor corresponding to the time of occurrence (years after DOS). Interpolation is encouraged for non-integer time periods.

Table NE-1-1-ST should be used for short-term LCC studies, i.e., studies with a total study period of 10 years or less. This table is based on a 4.0% (real) discount rate. Table NE-1-1-LT should be used for long-term LCC studies, i.e., studies with a total study period longer than 10 years. This table is based on a 4.5% (real) discount rate. Note that the total length of the study period determines which table to use, not the time that a one-time cost is incurred. Thus, for a non-routine maintenance cost that occurs in the fifth year after the Beneficial Occupancy Date (BOD), in a LCC analysis with 30 years of beneficial occupancy (i.e., occupancy or usage), use the 5-year factor from table NE-1-1-LT (0.8025).

Tables NE-1-2-ST, "Present Worth Factors--One-Time Costs, Non-Zero Differential Escalation (Short-Term Studies)" and NE-1-2-LT, "Present Worth Factors--One-Time Costs, Non-Zero Differential Escalation (Long-Term Studies)" provide present worth factors for costs which occur one time or at irregular intervals throughout the study period and which change faster or more slowly than general price inflation. The "differential escalation rate" is the difference between the rate of increase in the particular type of cost under consideration and general price inflation¹. Present worth factors are shown for differential escalation rates ranging from -5% to +5% in 1% increments. These factors are sometimes called "modified single present worth" (SPW*) factors. The present worth of each cost occurrence is found by multiplying that cost, in DOS prices, by the SPW* factor corresponding to the time of occurrence (years after DOS) and the differential

¹ A more accurate way of calculating the differential escalation rate for a project-related cost is:

$$e = (1+E)/(1+I) - 1$$

where e = the differential escalation rate,
 E = the actual escalation rate, and
 I = the rate of general inflation.

escalation rate. Interpolation is encouraged for time periods and escalation rates other than those shown on the table.

Table NE-1-2-ST should be used for short-term LCC studies, i.e., studies with a total study period of 10 years or less. This table is based on a 4.0% (real) discount rate. Table NE-1-2-LT should be used for long-term LCC studies, i.e., studies with a total study period longer than 10 years. This table is based on a 4.5% (real) discount rate. Note that the total length of the study period determines which table to use, not the time that a one-time cost is incurred. Thus, for a non-routine maintenance cost that is expected to occur in the fifth year after BOD and is expected to increase at an average annual rate of 2% above inflation, in a LCC analysis with a 30 year beneficial occupancy period, use the 5-year factor from table NE-1-2-LT (0.8860).

Table NE-2-1 provides present worth factors for costs which are incurred annually throughout the study period, such as routine maintenance and repair costs, and which are not expected to change faster or more slowly than the rate of general inflation. These factors are called "uniform present worth" (UPW) factors. The factors in this table are based on the assumption that the DOS is in April 1994, the BOD is in October of the same year or a future year, and that the annual cost occurs approximately at mid-year during each year of occupancy, or represents the sum of several costs distributed relatively uniformly throughout the year. The present worth of a cost recurring annually over the study period is found by multiplying the annual amount, in DOS prices, by the appropriate UPW factor. The number of payments generally corresponds to the number of years in the study period after BOD. Interpolation is encouraged for study periods and for BODs other than those shown on the tables.

Tables NE-2-2 through NE-2-11 provide present worth factors for costs which are incurred annually throughout the study period and which are expected to change faster or more slowly than the rate of general inflation. The differential rate of escalation is included in the table title; these differential rates range from -5% to +5% in 1% increments. Present worth factors which include escalation are sometimes called "modified uniform present worth" (UPW*) factors. The UPW* factors in this table are based on the assumption that the DOS is in April 1994, the BOD is in October of the same year or a future year, and that the annual cost occurs approximately at mid-year during each year of occupancy, or represents the sum of several costs distributed relatively uniformly throughout the year. The present worth of a cost recurring annually over the study period is found by multiplying the annual amount, in DOS prices, by the appropriate UPW* factor. The number of payments generally corresponds to the number of years in the study period after BOD. Interpolation is encouraged for study periods and escalation rates and BODs other than those shown on the tables.

As noted in the Preface, the tables for annually recurring costs (NE-2-1 through NE-2-11) are based on the assumption that the Date of Study is April, 1994, and that the BOD occurs in October of 1994 (or October of a subsequent year, through 2003). Therefore, for an LCC analysis covering a 10-year beneficial occupancy period beginning in October 1994, the total study period would be 10.5 years (April 1994 through October 2004). Accordingly, the present worth factor for beneficial occupancy periods of 10 years or longer are computed using the 4.5% discount rate for a long-term project.

NON-ENERGY STUDIES

NON-ENERGY STUDIES

Table NE-1-1-ST. Present Worth Factors--One-Time Costs,
Zero Differential Escalation (Short-term Studies)

| Time Cost Incurred (Years after DOS) | SPW Factor |
|---|------------|
| 0.00 | 1.0000 |
| 0.25 | 0.9902 |
| 0.50 | 0.9806 |
| 0.75 | 0.9710 |
| 1 | 0.9615 |
| 2 | 0.9246 |
| 3 | 0.8890 |
| 4 | 0.8548 |
| 5 | 0.8219 |
| 6 | 0.7903 |
| 7 | 0.7599 |
| 8 | 0.7307 |
| 9 | 0.7026 |
| 10 | 0.6756 |

- Notes: <1> Authorized Period of Use of Table is Oct 1993 through Sep 1994.
 <2> Tabulated Data Based on Criteria Contained in 18 Mar 91 Tri-Service Memorandum
 of Agreement on Criteria/Standards for EA/LCC for MILCON Design. (Discount Rate = 4.0%)
 <3> Covers Costs such as Construction, Procurement, Replacement, Disposal.

NON-ENERGY STUDIES

NON-ENERGY STUDIES

Table NE-1-1-LT. Present Worth Factors--One-Time Costs, Zero Differential Escalation (Long-Term Studies)

| Time Cost Incurred (Years after DOS) | SPW Factor | Time Cost Incurred (Years after DOS) | SPW Factor |
|--------------------------------------|------------|--------------------------------------|------------|
| 0.00 | 1.0000 | 16 | 0.4945 |
| 0.25 | 0.9891 | 17 | 0.4732 |
| 0.50 | 0.9782 | 18 | 0.4528 |
| 0.75 | 0.9675 | 19 | 0.4333 |
| | | 20 | 0.4146 |
| 1 | 0.9569 | 21 | 0.3968 |
| 2 | 0.9157 | 22 | 0.3797 |
| 3 | 0.8763 | 23 | 0.3634 |
| 4 | 0.8386 | 24 | 0.3477 |
| 5 | 0.8025 | 25 | 0.3327 |
| 6 | 0.7679 | 26 | 0.3184 |
| 7 | 0.7348 | 27 | 0.3047 |
| 8 | 0.7032 | 28 | 0.2916 |
| 9 | 0.6729 | 29 | 0.2790 |
| 10 | 0.6439 | 30 | 0.2670 |
| 11 | 0.6162 | 35 | 0.2143 |
| 12 | 0.5897 | 40 | 0.1719 |
| 13 | 0.5643 | 45 | 0.1380 |
| 14 | 0.5400 | 50 | 0.1107 |
| 15 | 0.5167 | | |

Notes: <1> Authorized Period of Use of Table is Oct 1993 through Sep 1994.
 <2> Tabulated Data Based on Criteria Contained in 18 Mar 91 Tri-Service Memorandum of Agreement on Criteria/Standards for EA/LCC for MILCON Design. (Discount Rate = 4.5%)
 <3> Covers Costs such as Construction, Procurement, Replacement, Disposal.

NON-ENERGY STUDIES

NON-ENERGY STUDIES

Table NE-1-2-ST. Present Worth Factors--One-Time Costs, Non-Zero Differential Escalation (Short-Term Studies)

| Time Cost Incurred (Years after DOS) | Differential Escalation Rate | | | | | | | | | |
|---|------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| | -5% | -4% | -3% | -2% | -1% | 1% | 2% | 3% | 4% | 5% |
| 0.00 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| 0.25 | 0.9776 | 0.9802 | 0.9827 | 0.9853 | 0.9878 | 0.9927 | 0.9952 | 0.9976 | 1.0000 | 1.0024 |
| 0.50 | 0.9558 | 0.9608 | 0.9658 | 0.9707 | 0.9757 | 0.9855 | 0.9903 | 0.9952 | 1.0000 | 1.0048 |
| 0.75 | 0.9344 | 0.9417 | 0.9491 | 0.9564 | 0.9637 | 0.9783 | 0.9855 | 0.9928 | 1.0000 | 1.0072 |
| 1 | 0.9135 | 0.9231 | 0.9327 | 0.9423 | 0.9519 | 0.9712 | 0.9808 | 0.9904 | 1.0000 | 1.0096 |
| 2 | 0.8344 | 0.8521 | 0.8699 | 0.8879 | 0.9062 | 0.9431 | 0.9619 | 0.9809 | 1.0000 | 1.0193 |
| 3 | 0.7622 | 0.7865 | 0.8114 | 0.8367 | 0.8626 | 0.9159 | 0.9434 | 0.9714 | 1.0000 | 1.0291 |
| 4 | 0.6962 | 0.7260 | 0.7568 | 0.7884 | 0.8211 | 0.8895 | 0.9253 | 0.9621 | 1.0000 | 1.0390 |
| 5 | 0.6360 | 0.6702 | 0.7058 | 0.7430 | 0.7816 | 0.8639 | 0.9075 | 0.9528 | 1.0000 | 1.0490 |
| 6 | 0.5810 | 0.6186 | 0.6583 | 0.7001 | 0.7441 | 0.8389 | 0.8900 | 0.9437 | 1.0000 | 1.0591 |
| 7 | 0.5307 | 0.5710 | 0.6140 | 0.6597 | 0.7083 | 0.8147 | 0.8729 | 0.9346 | 1.0000 | 1.0693 |
| 8 | 0.4848 | 0.5271 | 0.5727 | 0.6216 | 0.6742 | 0.7912 | 0.8561 | 0.9256 | 1.0000 | 1.0796 |
| 9 | 0.4428 | 0.4866 | 0.5341 | 0.5858 | 0.6418 | 0.7684 | 0.8397 | 0.9167 | 1.0000 | 1.0899 |
| 10 | 0.4045 | 0.4491 | 0.4982 | 0.5520 | 0.6110 | 0.7462 | 0.8235 | 0.9079 | 1.0000 | 1.1004 |

Notes: <1> Authorized Period of Use of Table is Oct 1993 through Sep 1994.
 <2> Tabulated Data Based on Criteria Contained in 18 Mar 91 Tri-Service Memorandum
 of Agreement on Criteria/Standards for EA/LCC for MILCON Design (Discount Rate = 4.0%).
 <3> Covers Costs such as Construction, Procurement, Replacement, Disposal

Table NE-1-2-LT. Present Worth Factors--One-Time Costs, Non-Zero Differential Escalation (Long-Term Studies)

| Time Cost Incurred (Years after DOS) | Differential Escalation Rate | | | | | | | | | |
|---|------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| | -5% | -4% | -3% | -2% | -1% | 1% | 2% | 3% | 4% | 5% |
| 0.00 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| 0.25 | 0.9765 | 0.9790 | 0.9816 | 0.9841 | 0.9866 | 0.9915 | 0.9940 | 0.9964 | 0.9988 | 1.0012 |
| 0.50 | 0.9535 | 0.9585 | 0.9634 | 0.9684 | 0.9733 | 0.9831 | 0.9880 | 0.9928 | 0.9976 | 1.0024 |
| 0.75 | 0.9310 | 0.9384 | 0.9457 | 0.9530 | 0.9603 | 0.9748 | 0.9820 | 0.9892 | 0.9964 | 1.0036 |
| 1 | 0.9091 | 0.9187 | 0.9282 | 0.9378 | 0.9474 | 0.9665 | 0.9761 | 0.9856 | 0.9952 | 1.0048 |
| 2 | 0.8264 | 0.8439 | 0.8616 | 0.8795 | 0.8975 | 0.9341 | 0.9527 | 0.9715 | 0.9905 | 1.0096 |
| 3 | 0.7513 | 0.7753 | 0.7998 | 0.8248 | 0.8503 | 0.9028 | 0.9299 | 0.9576 | 0.9857 | 1.0144 |
| 4 | 0.6830 | 0.7122 | 0.7424 | 0.7735 | 0.8055 | 0.8726 | 0.9077 | 0.9438 | 0.9810 | 1.0193 |
| 5 | 0.6209 | 0.6543 | 0.6891 | 0.7254 | 0.7631 | 0.8434 | 0.8860 | 0.9303 | 0.9763 | 1.0242 |
| 6 | 0.5645 | 0.6011 | 0.6396 | 0.6802 | 0.7230 | 0.8151 | 0.8648 | 0.9169 | 0.9716 | 1.0291 |
| 7 | 0.5132 | 0.5522 | 0.5937 | 0.6379 | 0.6849 | 0.7878 | 0.8441 | 0.9037 | 0.9670 | 1.0340 |
| 8 | 0.4665 | 0.5073 | 0.5511 | 0.5982 | 0.6489 | 0.7614 | 0.8239 | 0.8908 | 0.9624 | 1.0389 |
| 9 | 0.4241 | 0.4660 | 0.5116 | 0.5610 | 0.6147 | 0.7359 | 0.8042 | 0.8780 | 0.9578 | 1.0439 |
| 10 | 0.3855 | 0.4281 | 0.4748 | 0.5261 | 0.5824 | 0.7113 | 0.7849 | 0.8654 | 0.9532 | 1.0489 |
| 11 | 0.3505 | 0.3933 | 0.4408 | 0.4934 | 0.5517 | 0.6875 | 0.7662 | 0.8530 | 0.9486 | 1.0539 |
| 12 | 0.3186 | 0.3613 | 0.4091 | 0.4627 | 0.5227 | 0.6644 | 0.7478 | 0.8407 | 0.9441 | 1.0590 |
| 13 | 0.2897 | 0.3319 | 0.3798 | 0.4339 | 0.4952 | 0.6422 | 0.7299 | 0.8287 | 0.9396 | 1.0640 |
| 14 | 0.2633 | 0.3049 | 0.3525 | 0.4069 | 0.4691 | 0.6207 | 0.7125 | 0.8168 | 0.9351 | 1.0691 |
| 15 | 0.2394 | 0.2801 | 0.3272 | 0.3816 | 0.4444 | 0.5999 | 0.6954 | 0.8050 | 0.9306 | 1.0742 |
| 16 | 0.2176 | 0.2573 | 0.3037 | 0.3579 | 0.4210 | 0.5798 | 0.6788 | 0.7935 | 0.9261 | 1.0794 |
| 17 | 0.1978 | 0.2364 | 0.2819 | 0.3356 | 0.3989 | 0.5604 | 0.6626 | 0.7821 | 0.9217 | 1.0845 |
| 18 | 0.1799 | 0.2172 | 0.2617 | 0.3148 | 0.3779 | 0.5416 | 0.6467 | 0.7709 | 0.9173 | 1.0897 |
| 19 | 0.1635 | 0.1995 | 0.2429 | 0.2952 | 0.3580 | 0.5235 | 0.6312 | 0.7598 | 0.9129 | 1.0949 |
| 20 | 0.1486 | 0.1833 | 0.2255 | 0.2768 | 0.3391 | 0.5059 | 0.6161 | 0.7489 | 0.9085 | 1.1002 |
| 21 | 0.1351 | 0.1684 | 0.2093 | 0.2596 | 0.3213 | 0.4890 | 0.6014 | 0.7381 | 0.9042 | 1.1054 |
| 22 | 0.1228 | 0.1547 | 0.1943 | 0.2435 | 0.3044 | 0.4726 | 0.5870 | 0.7275 | 0.8999 | 1.1107 |
| 23 | 0.1117 | 0.1421 | 0.1803 | 0.2283 | 0.2884 | 0.4568 | 0.5730 | 0.7171 | 0.8956 | 1.1160 |
| 24 | 0.1015 | 0.1305 | 0.1674 | 0.2141 | 0.2732 | 0.4415 | 0.5593 | 0.7068 | 0.8913 | 1.1214 |
| 25 | 0.0923 | 0.1199 | 0.1554 | 0.2008 | 0.2588 | 0.4267 | 0.5459 | 0.6967 | 0.8870 | 1.1267 |
| 26 | 0.0839 | 0.1102 | 0.1442 | 0.1883 | 0.2452 | 0.4124 | 0.5328 | 0.6867 | 0.8828 | 1.1321 |
| 27 | 0.0763 | 0.1012 | 0.1339 | 0.1766 | 0.2323 | 0.3986 | 0.5201 | 0.6768 | 0.8785 | 1.1376 |
| 28 | 0.0693 | 0.0930 | 0.1243 | 0.1656 | 0.2201 | 0.3852 | 0.5076 | 0.6671 | 0.8743 | 1.1430 |
| 29 | 0.0630 | 0.0854 | 0.1153 | 0.1553 | 0.2085 | 0.3723 | 0.4955 | 0.6575 | 0.8702 | 1.1485 |
| 30 | 0.0573 | 0.0785 | 0.1071 | 0.1456 | 0.1975 | 0.3599 | 0.4836 | 0.6481 | 0.8660 | 1.1540 |
| 35 | 0.0356 | 0.0513 | 0.0738 | 0.1056 | 0.1507 | 0.3035 | 0.4285 | 0.6029 | 0.8455 | 1.1818 |
| 40 | 0.0221 | 0.0336 | 0.0508 | 0.0766 | 0.1150 | 0.2560 | 0.3796 | 0.5608 | 0.8254 | 1.2104 |
| 45 | 0.0137 | 0.0220 | 0.0350 | 0.0556 | 0.0878 | 0.2159 | 0.3363 | 0.5217 | 0.8059 | 1.2396 |
| 50 | 0.0085 | 0.0144 | 0.0241 | 0.0403 | 0.0670 | 0.1821 | 0.2980 | 0.4853 | 0.7868 | 1.2696 |

Notes: <1> Authorized Period of Use of Table is Oct 1993 through Sep 1994.
 <2> Tabulated Data Based on Criteria Contained in 18 Mar 91 Tri-Service Memorandum
 of Agreement on Criteria/Standards for EA/LCC for MILCON Design (Discount Rate = 4.5%).
 <3> Covers Costs such as Construction, Procurement, Replacement, Disposal

Table NE-2-1. Present Worth Factors--Annually Recurring Costs,
Zero Differential Escalation (e = 0%)

| Number of Payments | Beneficial Occupancy Date | | | | | | | | | | | | | | |
|--------------------------|---------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|--|--|--|--|--|
| | Oct 1994 | Oct 1995 | Oct 1996 | Oct 1997 | Oct 1998 | Oct 1999 | Oct 2000 | Oct 2001 | Oct 2002 | Oct 2003 | | | | | |
| 1 | 0.9615 | 0.9246 | 0.8890 | 0.8548 | 0.8219 | 0.7903 | 0.7599 | 0.7307 | 0.7026 | 0.6439 | | | | | |
| 2 | 1.8861 | 1.8136 | 1.7438 | 1.6767 | 1.6122 | 1.5502 | 1.4906 | 1.4333 | 1.3168 | 1.2601 | | | | | |
| 3 | 2.7751 | 2.6684 | 2.5657 | 2.4670 | 2.3722 | 2.2809 | 2.1932 | 2.0200 | 1.9330 | 1.8498 | | | | | |
| 4 | 3.6299 | 3.4903 | 3.3560 | 3.2270 | 3.1028 | 2.9835 | 2.7548 | 2.6362 | 2.5227 | 2.4141 | | | | | |
| 5 | 4.4518 | 4.2806 | 4.1160 | 3.9577 | 3.8054 | 3.5227 | 3.3710 | 3.2259 | 3.0870 | 2.9540 | | | | | |
| 6 | 5.2421 | 5.0405 | 4.8467 | 4.6602 | 4.3252 | 4.1389 | 3.9607 | 3.7902 | 3.6269 | 3.4708 | | | | | |
| 7 | 6.0021 | 5.7712 | 5.5492 | 5.1638 | 4.9414 | 4.7286 | 4.5250 | 4.3301 | 4.1437 | 3.9652 | | | | | |
| 8 | 6.7327 | 6.4738 | 6.0401 | 5.7800 | 5.5311 | 5.2929 | 5.0650 | 4.8468 | 4.6381 | 4.4384 | | | | | |
| 9 | 7.4353 | 6.9558 | 6.6562 | 6.3696 | 6.0953 | 5.8328 | 5.5817 | 5.3413 | 5.1113 | 4.8912 | | | | | |
| 10 | 7.9127 | 7.5720 | 7.2459 | 6.9339 | 6.6353 | 6.3496 | 6.0761 | 5.8145 | 5.5641 | 5.3245 | | | | | |
| 11 | 8.5289 | 8.1616 | 7.8102 | 7.4739 | 7.1520 | 6.8440 | 6.5493 | 6.2673 | 5.9974 | 5.7391 | | | | | |
| 12 | 9.1186 | 8.7259 | 8.3502 | 7.9906 | 7.6465 | 7.3172 | 7.0021 | 6.7006 | 6.4121 | 6.1359 | | | | | |
| 13 | 9.6829 | 9.2659 | 8.8669 | 8.4851 | 8.1197 | 7.7700 | 7.4354 | 7.1152 | 6.8088 | 6.5156 | | | | | |
| 14 | 10.2228 | 9.7826 | 9.3613 | 8.9582 | 8.5725 | 8.2033 | 7.8501 | 7.5120 | 7.1885 | 6.8790 | | | | | |
| 15 | 10.7395 | 10.2771 | 9.8345 | 9.4110 | 9.0058 | 8.6180 | 8.2469 | 7.8917 | 7.5519 | 7.2267 | | | | | |
| 16 | 11.2340 | 10.7503 | 10.2873 | 9.8443 | 9.4204 | 9.0147 | 8.6266 | 8.2551 | 7.8996 | 7.5594 | | | | | |
| 17 | 11.7072 | 11.2031 | 10.7206 | 10.2590 | 9.8172 | 9.3944 | 8.9899 | 8.6028 | 8.2323 | 7.8778 | | | | | |
| 18 | 12.1600 | 11.6364 | 11.1353 | 10.6558 | 10.1969 | 9.7578 | 9.3376 | 8.9355 | 8.5507 | 8.1825 | | | | | |
| 19 | 12.5933 | 12.0510 | 11.5321 | 11.0355 | 10.5602 | 10.1055 | 9.6703 | 9.2539 | 8.8554 | 8.4741 | | | | | |
| 20 | 13.0079 | 12.4478 | 11.9118 | 11.3988 | 10.9080 | 10.4382 | 9.9887 | 9.5586 | 9.1470 | 8.7531 | | | | | |
| 21 | 13.4047 | 12.8275 | 12.2751 | 11.7465 | 11.2407 | 10.7566 | 10.2934 | 9.8502 | 9.4260 | 9.0201 | | | | | |
| 22 | 13.7844 | 13.1908 | 12.6228 | 12.0792 | 11.5591 | 11.0613 | 10.5850 | 10.1292 | 9.6930 | 9.2756 | | | | | |
| 23 | 14.1478 | 13.5385 | 12.9555 | 12.3976 | 11.8638 | 11.3529 | 10.8640 | 10.3962 | 9.9485 | 9.5201 | | | | | |
| 24 | 14.4955 | 13.8713 | 13.2739 | 12.7023 | 12.1553 | 11.6319 | 11.1310 | 10.6517 | 10.1930 | 9.7541 | | | | | |
| 25 | 14.8282 | 14.1897 | 13.5786 | 12.9939 | 12.4344 | 11.8989 | 11.3865 | 10.8962 | 10.4270 | 9.9780 | | | | | |
| 30 | 16.2889 | 15.5875 | 14.9162 | 14.2739 | 13.6592 | 13.0710 | 12.5082 | 11.9695 | 11.4541 | 10.9609 | | | | | |
| 35 | 17.4610 | 16.7091 | 15.9896 | 15.3010 | 14.6421 | 14.0116 | 13.4082 | 12.8308 | 12.2783 | 11.7496 | | | | | |
| 40 | 18.4016 | 17.6092 | 16.8509 | 16.1252 | 15.4309 | 14.7654 | 14.1305 | 13.5220 | 12.9397 | 12.3825 | | | | | |
| 45 | 19.1563 | 18.3314 | 17.5420 | 16.7866 | 16.0638 | 15.3720 | 14.7101 | 14.0766 | 13.4705 | 12.8904 | | | | | |
| 50 | 19.7620 | 18.9110 | 18.0967 | 17.3174 | 16.5717 | 15.8580 | 15.1752 | 14.5217 | 13.8963 | 13.2979 | | | | | |

Notes: <1> Data Based on Assumed DOS of Apr 1994.

<2> Authorized Period of Use of Table is Oct 1993 through Sep 1994.

Tabulated Data Based on Criteria Contained in 18 Mar 91 Tri-Service Memorandum
of Agreement on Criteria/Standards for EA/ICC for MILCON Design

(Discount rate = 4.0% for total study periods of 10 years or less;

discount rate = 4.5% for total study periods greater than 10 years.)
<3> Covers Costs such as Routine Maintenance & Repair and Custodial.

Table NE-2-2. Present Worth Factors--Annually Recurring Costs,
Non-Zero Differential Escalation (e = -5%)

| Number of Payments | Beneficial Occupancy Date | | | | | | | | | | | | | | |
|--------------------|---------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|--|--|--|--|--|
| | Oct 1994 | Oct 1995 | Oct 1996 | Oct 1997 | Oct 1998 | Oct 1999 | Oct 2000 | Oct 2001 | Oct 2002 | Oct 2003 | | | | | |
| 1 | 0.9135 | 0.8344 | 0.7622 | 0.6962 | 0.6360 | 0.5810 | 0.5307 | 0.4848 | 0.4428 | 0.3855 | | | | | |
| 2 | 1.7479 | 1.5966 | 1.4584 | 1.3322 | 1.2169 | 1.1116 | 1.0154 | 0.9276 | 0.8096 | 0.7360 | | | | | |
| 3 | 2.5101 | 2.2929 | 2.0944 | 1.9132 | 1.7476 | 1.5964 | 1.4582 | 1.2761 | 1.1601 | 1.0547 | | | | | |
| 4 | 3.2063 | 2.9288 | 2.6754 | 2.4324 | 2.2324 | 2.0392 | 1.7893 | 1.6266 | 1.4788 | 1.3443 | | | | | |
| 5 | 3.8423 | 3.5098 | 3.2061 | 2.9286 | 2.6752 | 2.3538 | 2.1398 | 1.9453 | 1.7684 | 1.6077 | | | | | |
| 6 | 4.4233 | 4.0405 | 3.6908 | 3.3714 | 2.9747 | 2.7043 | 2.4584 | 2.2349 | 2.0318 | 1.8471 | | | | | |
| 7 | 4.9539 | 4.5252 | 4.1336 | 3.6577 | 3.3252 | 3.0229 | 2.7481 | 2.4983 | 2.2712 | 2.0647 | | | | | |
| 8 | 5.4387 | 4.9680 | 4.4090 | 4.0082 | 3.6438 | 3.3126 | 3.0114 | 2.7377 | 2.4888 | 2.2625 | | | | | |
| 9 | 5.8815 | 5.2355 | 4.7595 | 4.3268 | 3.9335 | 3.5759 | 3.2508 | 2.9553 | 2.6866 | 2.4424 | | | | | |
| 10 | 6.1446 | 5.5860 | 5.0782 | 4.6165 | 4.1968 | 3.8153 | 3.4684 | 3.1531 | 2.8665 | 2.6059 | | | | | |
| 11 | 6.4951 | 5.9046 | 5.3678 | 4.8798 | 4.4362 | 4.0329 | 3.6663 | 3.3330 | 3.0300 | 2.7545 | | | | | |
| 12 | 6.8137 | 6.1943 | 5.6312 | 5.1192 | 4.6538 | 4.2308 | 3.8462 | 3.4965 | 3.1786 | 2.8897 | | | | | |
| 13 | 7.1034 | 6.4576 | 5.8705 | 5.3369 | 4.8517 | 4.4106 | 4.0097 | 3.6451 | 3.3138 | 3.0125 | | | | | |
| 14 | 7.3667 | 6.6970 | 6.0882 | 5.5347 | 5.0315 | 4.5741 | 4.1583 | 3.7803 | 3.4366 | 3.1242 | | | | | |
| 15 | 7.6061 | 6.9146 | 6.2860 | 5.7146 | 5.1951 | 4.7228 | 4.2934 | 3.9031 | 3.5483 | 3.2257 | | | | | |
| 16 | 7.8237 | 7.1125 | 6.4659 | 5.8781 | 5.3437 | 4.8579 | 4.4163 | 4.0148 | 3.6498 | 3.3180 | | | | | |
| 17 | 8.0216 | 7.2923 | 6.6294 | 6.0262 | 5.4788 | 4.9808 | 4.5280 | 4.1163 | 3.7421 | 3.4019 | | | | | |
| 18 | 8.2014 | 7.4558 | 6.7780 | 6.1618 | 5.6017 | 5.0924 | 4.6295 | 4.2086 | 3.8260 | 3.4782 | | | | | |
| 19 | 8.3649 | 7.6045 | 6.9132 | 6.2847 | 5.7134 | 5.1940 | 4.7218 | 4.2925 | 3.9023 | 3.5475 | | | | | |
| 20 | 8.5136 | 7.7396 | 7.0360 | 6.3964 | 5.8149 | 5.2863 | 4.8057 | 4.3688 | 3.9716 | 3.6106 | | | | | |
| 21 | 8.6487 | 7.8624 | 7.1477 | 6.4979 | 5.9072 | 5.3702 | 4.8820 | 4.4381 | 4.0347 | 3.6679 | | | | | |
| 22 | 8.7715 | 7.9741 | 7.2492 | 6.5902 | 5.9911 | 5.4464 | 4.9513 | 4.5012 | 4.0920 | 3.7200 | | | | | |
| 23 | 8.8832 | 8.0757 | 7.3415 | 6.6741 | 6.0674 | 5.5158 | 5.0143 | 4.5585 | 4.1441 | 3.7674 | | | | | |
| 24 | 8.9847 | 8.1679 | 7.4254 | 6.7504 | 6.1367 | 5.5788 | 5.0717 | 4.6106 | 4.1914 | 3.8104 | | | | | |
| 25 | 9.0770 | 8.2519 | 7.5017 | 6.8197 | 6.1997 | 5.6361 | 5.1238 | 4.6580 | 4.2345 | 3.8496 | | | | | |
| 30 | 9.4269 | 8.5699 | 7.7908 | 7.0826 | 6.4387 | 5.8534 | 5.3212 | 4.8375 | 4.3977 | 3.9979 | | | | | |
| 35 | 9.6442 | 8.7674 | 7.9704 | 7.2458 | 6.5871 | 5.9883 | 5.4439 | 4.9490 | 4.4991 | 4.0901 | | | | | |
| 40 | 9.7791 | 8.8900 | 8.0819 | 7.3471 | 6.6792 | 6.0720 | 5.5200 | 5.0182 | 4.5620 | 4.1473 | | | | | |
| 45 | 9.8628 | 8.9662 | 8.1511 | 7.4101 | 6.7364 | 6.1240 | 5.5673 | 5.0612 | 4.6011 | 4.1828 | | | | | |
| 50 | 9.9148 | 9.0135 | 8.1941 | 7.4491 | 6.7720 | 6.1563 | 5.5967 | 5.0879 | 4.6253 | 4.2048 | | | | | |

Notes: <1> Data Based on Assumed DOS of Apr 1994.

<2> Authorized Period of Use of Table is Oct 1993 through Sep 1994.
 Tabulated Data Based on Criteria Contained in 18 Mar 91 Tri-Service Memorandum
 of Agreement on Criteria/Standards for EA/LCC for MILCON Design
 (Discount rate = 4.0% for total study periods of 10 years or less;
 discount rate = 4.5% for total study periods greater than 10 years.)

<3> Covers Costs such as Routine Maintenance & Repair and Custodial.

Table NE-2-3. Present Worth Factors--Annually Recurring Costs,
Non-Zero Differential Escalation (e = -4%)

| Number Of Payments | Beneficial Occupancy Date | | | | | | | | | | | |
|--------------------------|---------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|--|--|
| | Oct 1994 | Oct 1995 | Oct 1996 | Oct 1997 | Oct 1998 | Oct 1999 | Oct 2000 | Oct 2001 | Oct 2002 | Oct 2003 | | |
| 1 | 0.9231 | 0.8521 | 0.7865 | 0.7260 | 0.6702 | 0.6186 | 0.5710 | 0.5271 | 0.4866 | 0.4281 | | |
| 2 | 1.7751 | 1.6386 | 1.5126 | 1.3962 | 1.2888 | 1.1897 | 1.0982 | 1.0137 | 0.8941 | 0.8214 | | |
| 3 | 2.5617 | 2.3646 | 2.1827 | 2.0148 | 1.8598 | 1.7168 | 1.5847 | 1.4014 | 1.2874 | 1.1827 | | |
| 4 | 3.2877 | 3.0348 | 2.8014 | 2.5859 | 2.3870 | 2.2033 | 1.9536 | 1.7947 | 1.6487 | 1.5146 | | |
| 5 | 3.9579 | 3.6534 | 3.3724 | 3.1130 | 2.8735 | 2.5546 | 2.3469 | 2.1560 | 1.9806 | 1.8195 | | |
| 6 | 4.5765 | 4.2245 | 3.8995 | 3.5995 | 3.2089 | 2.9479 | 2.7081 | 2.4879 | 2.2855 | 2.0996 | | |
| 7 | 5.1475 | 4.7516 | 4.3861 | 3.9212 | 3.6022 | 3.3092 | 3.0400 | 2.7928 | 2.5656 | 2.3569 | | |
| 8 | 5.6747 | 5.2381 | 4.8965 | 4.3145 | 3.9635 | 3.6411 | 3.3450 | 3.0729 | 2.8229 | 2.5933 | | |
| 9 | 6.1612 | 5.5404 | 5.0897 | 4.6757 | 4.2954 | 3.9460 | 3.6251 | 3.3302 | 3.0593 | 2.8105 | | |
| 10 | 6.4591 | 5.9337 | 5.4510 | 5.0077 | 4.6003 | 4.2261 | 3.8824 | 3.5666 | 3.2765 | 3.0100 | | |
| 11 | 6.8523 | 6.2950 | 5.7829 | 5.3126 | 4.8804 | 4.4835 | 4.1188 | 3.7838 | 3.4760 | 3.1933 | | |
| 12 | 7.2136 | 6.6269 | 6.0879 | 5.5927 | 5.1378 | 4.7199 | 4.3359 | 3.9833 | 3.6593 | 3.3616 | | |
| 13 | 7.5455 | 6.9318 | 6.3680 | 5.8500 | 5.3742 | 4.9370 | 4.5354 | 4.1665 | 3.8276 | 3.5163 | | |
| 14 | 7.8504 | 7.2119 | 6.6253 | 6.0864 | 5.5913 | 5.1365 | 4.7187 | 4.3349 | 3.9823 | 3.6584 | | |
| 15 | 8.1306 | 7.4692 | 6.8617 | 6.3035 | 5.7908 | 5.3198 | 4.8871 | 4.4896 | 4.1244 | 3.7889 | | |
| 16 | 8.3879 | 7.7056 | 7.0788 | 6.5030 | 5.9741 | 5.4882 | 5.0418 | 4.6317 | 4.2549 | 3.9088 | | |
| 17 | 8.6243 | 7.9228 | 7.2783 | 6.6863 | 6.1425 | 5.6428 | 5.1838 | 4.7622 | 4.3748 | 4.0190 | | |
| 18 | 8.8414 | 8.1223 | 7.4616 | 6.8547 | 6.2971 | 5.7849 | 5.3144 | 4.8821 | 4.4850 | 4.1202 | | |
| 19 | 9.0409 | 8.3055 | 7.6300 | 7.0094 | 6.4392 | 5.9155 | 5.4343 | 4.9923 | 4.5862 | 4.2132 | | |
| 20 | 9.2242 | 8.4739 | 7.7846 | 7.1514 | 6.5698 | 6.0354 | 5.5445 | 5.0935 | 4.6792 | 4.2986 | | |
| 21 | 9.3926 | 8.6286 | 7.9267 | 7.2820 | 6.6897 | 6.1455 | 5.6457 | 5.1864 | 4.7646 | 4.3770 | | |
| 22 | 9.5472 | 8.7707 | 8.0573 | 7.4019 | 6.7998 | 6.2467 | 5.7386 | 5.2718 | 4.8430 | 4.4491 | | |
| 23 | 9.6893 | 8.9012 | 8.1772 | 7.5121 | 6.9010 | 6.3397 | 5.8240 | 5.3503 | 4.9151 | 4.5153 | | |
| 24 | 9.8199 | 9.0211 | 8.2873 | 7.6133 | 6.9940 | 6.4251 | 5.9025 | 5.4224 | 4.9813 | 4.5761 | | |
| 25 | 9.9398 | 9.1313 | 8.3885 | 7.7062 | 7.0794 | 6.5036 | 5.9746 | 5.4886 | 5.0422 | 4.6320 | | |
| 30 | 10.4080 | 9.5614 | 8.7837 | 8.0692 | 7.4129 | 6.8099 | 6.2560 | 5.7471 | 5.2797 | 4.8502 | | |
| 35 | 10.7143 | 9.8428 | 9.0422 | 8.3067 | 7.6311 | 7.0103 | 6.4401 | 5.9163 | 5.4351 | 4.9930 | | |
| 40 | 10.9148 | 10.0270 | 9.2114 | 8.4621 | 7.7738 | 7.1415 | 6.5606 | 6.0270 | 5.5367 | 5.0864 | | |
| 45 | 11.0459 | 10.1474 | 9.3220 | 8.5638 | 7.8672 | 7.2273 | 6.6394 | 6.0994 | 5.6033 | 5.1475 | | |
| 50 | 11.1317 | 10.2263 | 9.3945 | 8.6303 | 7.9283 | 7.2834 | 6.6910 | 6.1468 | 5.6468 | 5.1875 | | |

Notes: <1> Data Based on Assumed DOS of Apr 1994.

<2> Authorized Period of Use of Table is Oct 1993 through Sep 1994.

Tabulated Data Based on Criteria Contained in 18 Mar 91 Tri-Service Memorandum

of Agreement on Criteria/Standards for EA/ICC for MILCON Design

(Discount rate = 4.0% for total study periods of 10 years or less;

discount rate = 4.5% for total study periods greater than 10 years.)

<3> Covers Costs such as Routine Maintenance & Repair and Custodial.

Table NE-2-4. Present Worth Factors--Annually Recurring Costs, Non-Zero Differential Escalation (e = -3%)

| Number of Payments | Beneficial Occupancy Date | | | | | | | | | | | |
|--------------------|---------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|--|--|
| | Oct 1994 | Oct 1995 | Oct 1996 | Oct 1997 | Oct 1998 | Oct 1999 | Oct 2000 | Oct 2001 | Oct 2002 | Oct 2003 | | |
| 1 | 0.9327 | 0.8699 | 0.8114 | 0.7568 | 0.7058 | 0.6583 | 0.6140 | 0.5727 | 0.5341 | 0.4748 | | |
| 2 | 1.8026 | 1.6813 | 1.5681 | 1.4626 | 1.3641 | 1.2723 | 1.1867 | 1.1068 | 0.9864 | 0.9156 | | |
| 3 | 2.6140 | 2.4380 | 2.2739 | 2.1209 | 1.9781 | 1.8450 | 1.7208 | 1.5375 | 1.4272 | 1.3247 | | |
| 4 | 3.3707 | 3.1438 | 2.9322 | 2.7349 | 2.5508 | 2.3791 | 2.1313 | 1.9783 | 1.8363 | 1.7045 | | |
| 5 | 4.0765 | 3.8022 | 3.5462 | 3.3076 | 3.0849 | 2.7709 | 2.5720 | 2.3874 | 2.2161 | 2.0570 | | |
| 6 | 4.7348 | 4.4162 | 4.1189 | 3.8417 | 3.4600 | 3.2117 | 2.9812 | 2.7672 | 2.5686 | 2.3842 | | |
| 7 | 5.3488 | 4.9888 | 4.6530 | 4.2024 | 3.9008 | 3.6208 | 3.3609 | 3.1197 | 2.8958 | 2.6880 | | |
| 8 | 5.9215 | 5.5230 | 5.0021 | 4.6431 | 4.3099 | 4.0006 | 3.7134 | 3.4469 | 3.1995 | 2.9699 | | |
| 9 | 6.4557 | 5.8637 | 5.4429 | 5.0523 | 4.6897 | 4.3531 | 4.0407 | 3.7507 | 3.4815 | 3.2316 | | |
| 10 | 6.7920 | 6.3045 | 5.8520 | 5.4320 | 5.0422 | 4.6803 | 4.3444 | 4.0326 | 3.7432 | 3.4745 | | |
| 11 | 7.2327 | 6.7136 | 6.2318 | 5.7845 | 5.3694 | 4.9840 | 4.6263 | 4.2943 | 3.9861 | 3.7000 | | |
| 12 | 7.6419 | 7.0934 | 6.5843 | 6.1118 | 5.6731 | 5.2660 | 4.8880 | 4.5372 | 4.2116 | 3.9093 | | |
| 13 | 8.0216 | 7.4459 | 6.9115 | 6.4155 | 5.9550 | 5.5276 | 5.1309 | 4.7627 | 4.4209 | 4.1036 | | |
| 14 | 8.3742 | 7.7731 | 7.2153 | 6.6974 | 6.2167 | 5.7706 | 5.3564 | 4.9720 | 4.6151 | 4.2839 | | |
| 15 | 8.7014 | 8.0769 | 7.4972 | 6.9591 | 6.4597 | 5.9960 | 5.5657 | 5.1663 | 4.7955 | 4.4513 | | |
| 16 | 9.0051 | 8.3588 | 7.7589 | 7.2020 | 6.6851 | 6.2053 | 5.7600 | 5.3466 | 4.9629 | 4.6067 | | |
| 17 | 9.2870 | 8.6205 | 8.0018 | 7.4275 | 6.8944 | 6.3996 | 5.9403 | 5.5182 | 5.1182 | 4.7509 | | |
| 18 | 9.5487 | 8.8634 | 8.2273 | 7.6368 | 7.0887 | 6.5799 | 6.1077 | 5.6694 | 5.2625 | 4.8848 | | |
| 19 | 9.7916 | 9.0889 | 8.4366 | 7.8311 | 7.2690 | 6.7473 | 6.2631 | 5.8136 | 5.3963 | 5.0090 | | |
| 20 | 10.0171 | 9.2982 | 8.6309 | 8.0114 | 7.4364 | 6.9027 | 6.4073 | 5.9475 | 5.5206 | 5.1244 | | |
| 21 | 10.2264 | 9.4925 | 8.8112 | 8.1788 | 7.5918 | 7.0469 | 6.5412 | 6.0717 | 5.6359 | 5.2315 | | |
| 22 | 10.4207 | 9.6728 | 8.9786 | 8.3342 | 7.7360 | 7.1808 | 6.6654 | 6.1871 | 5.7430 | 5.3308 | | |
| 23 | 10.6010 | 9.8402 | 9.1340 | 8.4784 | 7.8699 | 7.3051 | 6.7808 | 6.2941 | 5.8424 | 5.4231 | | |
| 24 | 10.7684 | 9.9956 | 9.2782 | 8.6123 | 7.9942 | 7.4204 | 6.8879 | 6.3935 | 5.9347 | 5.5087 | | |
| 25 | 10.9238 | 10.1398 | 9.4121 | 8.7365 | 8.1095 | 7.5275 | 6.9872 | 6.4858 | 6.0203 | 5.5882 | | |
| 30 | 11.5486 | 10.7197 | 9.9504 | 9.2362 | 8.5733 | 7.9580 | 7.3869 | 6.8567 | 6.3646 | 5.9078 | | |
| 35 | 11.9791 | 11.1194 | 10.3213 | 9.5806 | 8.8930 | 8.2547 | 7.6623 | 7.1123 | 6.6019 | 6.1281 | | |
| 40 | 12.2758 | 11.3947 | 10.5769 | 9.8178 | 9.1132 | 8.4591 | 7.8520 | 7.2885 | 6.7654 | 6.2798 | | |
| 45 | 12.4802 | 11.5845 | 10.7531 | 9.9813 | 9.2650 | 8.6000 | 7.9828 | 7.4099 | 6.8781 | 6.3844 | | |
| 50 | 12.6211 | 11.7153 | 10.8745 | 10.0940 | 9.3696 | 8.6971 | 8.0729 | 7.4935 | 6.9557 | 6.4565 | | |

Notes: <1> Data Based on Assumed DOS of Apr 1994.
 Authorized Period of Use of Table is Oct 1993 through Sep 1994.
 <2> Tabulated Data Based on Criteria Contained in 18 Mar 91 Tri-Service Memorandum of Agreement on Criteria/Standards for EA/LCC for MILCON Design (Discount rate = 4.0% for total study periods of 10 years or less; discount rate = 4.5% for total study periods greater than 10 years.)
 <3> Covers Costs such as Routine Maintenance & Repair and Custodial.

Table NE-2-5. Present Worth Factors--Annually Recurring Costs,
Non-Zero Differential Escalation (e = -2%)

| Number of Payments | Beneficial Occupancy Date | | | | | | | | | | | | | | |
|--------------------------|---------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|--|--|--|--|--|
| | Oct 1994 | Oct 1995 | Oct 1996 | Oct 1997 | Oct 1998 | Oct 1999 | Oct 2000 | Oct 2001 | Oct 2002 | Oct 2003 | | | | | |
| 1 | 0.9423 | 0.8879 | 0.8367 | 0.7884 | 0.7430 | 0.7001 | 0.6597 | 0.6216 | 0.5858 | 0.5261 | | | | | |
| 2 | 1.8303 | 1.7247 | 1.6252 | 1.5314 | 1.4431 | 1.3598 | 1.2813 | 1.2074 | 1.0872 | 1.0195 | | | | | |
| 3 | 2.6670 | 2.5131 | 2.3681 | 2.2315 | 2.1028 | 1.9814 | 1.8671 | 1.6854 | 1.5806 | 1.4823 | | | | | |
| 4 | 3.4554 | 3.2561 | 3.0682 | 2.8912 | 2.7244 | 2.5672 | 2.3233 | 2.1788 | 2.0433 | 1.9162 | | | | | |
| 5 | 4.1984 | 3.9562 | 3.7279 | 3.5128 | 3.3102 | 3.0036 | 2.8167 | 2.6415 | 2.4772 | 2.3231 | | | | | |
| 6 | 4.8985 | 4.6159 | 4.3496 | 4.0986 | 3.7289 | 3.4970 | 3.2795 | 3.0755 | 2.8842 | 2.7048 | | | | | |
| 7 | 5.5582 | 5.2375 | 4.9353 | 4.5024 | 4.2223 | 3.9597 | 3.7134 | 3.4824 | 3.2658 | 3.0627 | | | | | |
| 8 | 6.1798 | 5.8233 | 5.3271 | 4.9958 | 4.6851 | 4.3936 | 4.1203 | 3.8641 | 3.6237 | 3.3983 | | | | | |
| 9 | 6.7656 | 6.2066 | 5.8206 | 5.4585 | 5.1190 | 4.8006 | 4.5020 | 4.2220 | 3.9593 | 3.7131 | | | | | |
| 10 | 7.1444 | 6.7000 | 6.2833 | 5.8925 | 5.5259 | 5.1822 | 4.8599 | 4.5576 | 4.2741 | 4.0082 | | | | | |
| 11 | 7.6378 | 7.1627 | 6.7172 | 6.2994 | 5.9076 | 5.5401 | 5.1955 | 4.8723 | 4.5693 | 4.2851 | | | | | |
| 12 | 8.1005 | 7.5967 | 7.1242 | 6.6810 | 6.2655 | 5.8757 | 5.5103 | 5.1675 | 4.8461 | 4.5447 | | | | | |
| 13 | 8.5345 | 8.0036 | 7.5058 | 7.0389 | 6.6011 | 6.1905 | 5.8054 | 5.4443 | 5.1057 | 4.7881 | | | | | |
| 14 | 8.9414 | 8.3853 | 7.8637 | 7.3746 | 6.9159 | 6.4857 | 6.0823 | 5.7039 | 5.3492 | 5.0164 | | | | | |
| 15 | 9.3231 | 8.7432 | 8.1993 | 7.6893 | 7.2110 | 6.7625 | 6.3419 | 5.9474 | 5.5775 | 5.2305 | | | | | |
| 16 | 9.6810 | 9.0788 | 8.5141 | 7.9845 | 7.4879 | 7.0221 | 6.5853 | 6.1757 | 5.7916 | 5.4313 | | | | | |
| 17 | 10.0166 | 9.3935 | 8.8093 | 8.2613 | 7.7475 | 7.2656 | 6.8136 | 6.3898 | 5.9924 | 5.6196 | | | | | |
| 18 | 10.3313 | 9.6887 | 9.0861 | 8.5209 | 7.9909 | 7.4939 | 7.0277 | 6.5906 | 6.1807 | 5.7962 | | | | | |
| 19 | 10.6265 | 9.9655 | 9.3457 | 8.7644 | 8.2192 | 7.7080 | 7.2285 | 6.7789 | 6.3573 | 5.9618 | | | | | |
| 20 | 10.9033 | 10.2251 | 9.5891 | 8.9927 | 8.4333 | 7.9088 | 7.4168 | 6.9555 | 6.5229 | 6.1171 | | | | | |
| 21 | 11.1629 | 10.4686 | 9.8174 | 9.2068 | 8.6341 | 8.0971 | 7.5934 | 7.1211 | 6.6782 | 6.2628 | | | | | |
| 22 | 11.4064 | 10.6969 | 10.0316 | 9.4076 | 8.8224 | 8.2737 | 7.7590 | 7.2764 | 6.8238 | 6.3994 | | | | | |
| 23 | 11.6347 | 10.9110 | 10.2323 | 9.5959 | 8.9990 | 8.4393 | 7.9143 | 7.4221 | 6.9604 | 6.5275 | | | | | |
| 24 | 11.8488 | 11.1118 | 10.4206 | 9.7725 | 9.1646 | 8.5946 | 8.0600 | 7.5586 | 7.0885 | 6.6476 | | | | | |
| 25 | 12.0496 | 11.3001 | 10.5972 | 9.9381 | 9.3199 | 8.7402 | 8.1966 | 7.6867 | 7.2086 | 6.7602 | | | | | |
| 30 | 12.8811 | 12.0798 | 11.3285 | 10.6238 | 9.9630 | 9.3433 | 8.7621 | 8.2171 | 7.7060 | 7.2267 | | | | | |
| 35 | 13.4841 | 12.6454 | 11.8589 | 11.1212 | 10.4295 | 9.7808 | 9.1724 | 8.6019 | 8.0668 | 7.5650 | | | | | |
| 40 | 13.9216 | 13.0557 | 12.2436 | 11.4820 | 10.7678 | 10.0981 | 9.4700 | 8.8809 | 8.3285 | 7.8105 | | | | | |
| 45 | 14.2389 | 13.3532 | 12.5226 | 11.7437 | 11.0133 | 10.3282 | 9.6858 | 9.0833 | 8.5183 | 7.9885 | | | | | |
| 50 | 14.4691 | 13.5691 | 12.7251 | 11.9336 | 11.1913 | 10.4952 | 9.8424 | 9.2302 | 8.6560 | 8.1176 | | | | | |

Notes: <1> Data Based on Assumed DOS of Apr 1994.

<2> Authorized Period of Use of Table is Oct 1993 through Sep 1994.
 Tabulated Data Based on Criteria Contained in 18 Mar 91 Tri-Service Memorandum
 of Agreement on Criteria/Standards for EA/LCC for MILCON Design
 (Discount rate = 4.0% for total study periods of 10 years or less;
 discount rate = 4.5% for total study periods greater than 10 years.)

<3> Covers Costs such as Routine Maintenance & Repair and Custodial.

Table NE-2-6. Present Worth Factors--Annually Recurring Costs,
Non-Zero Differential Escalation (e = -1%)

| Number of Payments | Beneficial Occupancy Date | | | | | | | | | | | | | | |
|--------------------------|---------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|--|--|--|--|--|
| | Oct 1994 | Oct 1995 | Oct 1996 | Oct 1997 | Oct 1998 | Oct 1999 | Oct 2000 | Oct 2001 | Oct 2002 | Oct 2003 | | | | | |
| 1 | 0.9519 | 0.9062 | 0.8626 | 0.8211 | 0.7816 | 0.7441 | 0.7083 | 0.6742 | 0.6418 | 0.5824 | | | | | |
| 2 | 1.8581 | 1.7687 | 1.6837 | 1.6028 | 1.5257 | 1.4524 | 1.3825 | 1.3161 | 1.1971 | 1.1341 | | | | | |
| 3 | 2.7207 | 2.5899 | 2.4654 | 2.3468 | 2.2340 | 2.1266 | 2.0244 | 1.8459 | 1.7488 | 1.6567 | | | | | |
| 4 | 3.5418 | 3.3715 | 3.2094 | 3.0551 | 2.9082 | 2.7684 | 2.5308 | 2.3976 | 2.2714 | 2.1519 | | | | | |
| 5 | 4.3234 | 4.1156 | 3.9177 | 3.7294 | 3.5501 | 3.2538 | 3.0825 | 2.9203 | 2.7666 | 2.6210 | | | | | |
| 6 | 5.0675 | 4.8239 | 4.5920 | 4.3712 | 4.1699 | 3.8055 | 3.6052 | 3.4155 | 3.2357 | 3.0654 | | | | | |
| 7 | 5.7758 | 5.4981 | 5.2338 | 4.8224 | 4.5686 | 4.3282 | 4.1004 | 3.8846 | 3.6801 | 3.4864 | | | | | |
| 8 | 6.4500 | 6.1399 | 5.6727 | 5.3741 | 5.0913 | 4.8233 | 4.5695 | 4.3290 | 4.1011 | 3.8853 | | | | | |
| 9 | 7.0919 | 6.5702 | 6.2244 | 5.8968 | 5.5865 | 5.2924 | 5.0139 | 4.7500 | 4.5000 | 4.2631 | | | | | |
| 10 | 7.5176 | 7.1219 | 6.7471 | 6.3920 | 6.0556 | 5.7368 | 5.4349 | 5.1489 | 4.8779 | 4.6211 | | | | | |
| 11 | 8.0693 | 7.6446 | 7.2422 | 6.8611 | 6.5000 | 6.1579 | 5.8338 | 5.5267 | 5.2358 | 4.9603 | | | | | |
| 12 | 8.5920 | 8.1397 | 7.7113 | 7.3055 | 6.9210 | 6.5567 | 6.2116 | 5.8847 | 5.5750 | 5.2816 | | | | | |
| 13 | 9.0871 | 8.6088 | 8.1557 | 7.7265 | 7.3198 | 6.9346 | 6.5696 | 6.2238 | 5.8963 | 5.5859 | | | | | |
| 14 | 9.5562 | 9.0533 | 8.5768 | 8.1254 | 7.6977 | 7.2926 | 6.9087 | 6.5451 | 6.2006 | 5.8743 | | | | | |
| 15 | 10.0006 | 9.4743 | 8.9756 | 8.5032 | 8.0557 | 7.6317 | 7.2300 | 6.8495 | 6.4890 | 6.1475 | | | | | |
| 16 | 10.4216 | 9.8731 | 9.3535 | 8.8612 | 8.3948 | 7.9530 | 7.5344 | 7.1379 | 6.7622 | 6.4063 | | | | | |
| 17 | 10.8205 | 10.2510 | 9.7115 | 9.2003 | 8.7161 | 8.2574 | 7.8228 | 7.4111 | 7.0210 | 6.6515 | | | | | |
| 18 | 11.1984 | 10.6090 | 10.0506 | 9.5216 | 9.0205 | 8.5457 | 8.0960 | 7.6699 | 7.2662 | 6.8837 | | | | | |
| 19 | 11.5564 | 10.9481 | 10.3719 | 9.8260 | 9.3089 | 8.8189 | 8.3548 | 7.9150 | 7.4985 | 7.1038 | | | | | |
| 20 | 11.8955 | 11.2694 | 10.6763 | 10.1144 | 9.5820 | 9.0777 | 8.5999 | 8.1473 | 7.7185 | 7.3123 | | | | | |
| 21 | 12.2168 | 11.5738 | 10.9646 | 10.3876 | 9.8408 | 9.3229 | 8.8322 | 8.3674 | 7.9270 | 7.5098 | | | | | |
| 22 | 12.5212 | 11.8622 | 11.2378 | 10.6464 | 10.0860 | 9.5552 | 9.0523 | 8.5758 | 8.1245 | 7.6969 | | | | | |
| 23 | 12.8095 | 12.1353 | 11.4966 | 10.8915 | 10.3183 | 9.7752 | 9.2608 | 8.7733 | 8.3116 | 7.8741 | | | | | |
| 24 | 13.0827 | 12.3941 | 11.7418 | 11.1238 | 10.5384 | 9.9837 | 9.4583 | 8.9605 | 8.4888 | 8.0421 | | | | | |
| 25 | 13.3415 | 12.6393 | 11.9741 | 11.3439 | 10.7468 | 10.1812 | 9.6454 | 9.1377 | 8.6568 | 8.2012 | | | | | |
| 30 | 14.4450 | 13.6847 | 12.9645 | 12.2821 | 11.6357 | 11.0233 | 10.4431 | 9.8935 | 9.3728 | 8.8795 | | | | | |
| 35 | 15.2871 | 14.4825 | 13.7203 | 12.9982 | 12.3140 | 11.6659 | 11.0519 | 10.4703 | 9.9192 | 9.3971 | | | | | |
| 40 | 15.9297 | 15.0913 | 14.2970 | 13.5446 | 12.8317 | 12.1563 | 11.5165 | 10.9104 | 10.3362 | 9.7922 | | | | | |
| 45 | 16.4201 | 15.5559 | 14.7372 | 13.9615 | 13.2267 | 12.5306 | 11.8711 | 11.2463 | 10.6544 | 10.0936 | | | | | |
| 50 | 16.7944 | 15.9104 | 15.0731 | 14.2797 | 13.5282 | 12.8162 | 12.1416 | 11.5026 | 10.8972 | 10.3237 | | | | | |

Notes: <1> Data Based on Assumed DOS of Apr 1994.

<2> Authenticated Period of Use of Table is Oct 1993 through Sep 1994.
 Tabulated Data Based on Criteria Contained in 18 Mar 91 Tri-Service Memorandum
 of Agreement on Criteria/Standards for EA/LCC for MILCON Design
 (Discount rate = 4.0% for total study periods of 10 years or less;
 discount rate = 4.5% for total study periods greater than 10 years.)

<3> Covers Costs such as Routine Maintenance & Repair and Custodial.

Table NE-2-7. Present Worth Factors--Annually Recurring Costs,
Non-Zero Differential Escalation (e = 1%)

| Number of Payments | Beneficial Occupancy Date | | | | | | | | | | | | | | | | | | | | |
|--------------------------|---------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|---------|
| | Oct 1994 | Oct 1995 | Oct 1996 | Oct 1997 | Oct 1998 | Oct 1999 | Oct 2000 | Oct 2001 | Oct 2002 | Oct 2003 | Oct 2004 | Oct 2005 | Oct 2006 | Oct 2007 | Oct 2008 | Oct 2009 | Oct 2010 | Oct 2011 | Oct 2012 | Oct 2013 | |
| 1 | 0.9712 | 0.9431 | 0.9159 | 0.8895 | 0.8639 | 0.8389 | 0.8147 | 0.7912 | 0.7684 | 0.7456 | 0.7233 | 0.7014 | 0.6800 | 0.6591 | 0.6387 | 0.6187 | 0.5991 | 0.5799 | 0.5611 | 0.5427 | 0.5246 |
| 2 | 1.9143 | 1.8591 | 1.8054 | 1.7534 | 1.7028 | 1.6537 | 1.6060 | 1.5596 | 1.4472 | 1.4472 | 1.4472 | 1.4472 | 1.4472 | 1.4472 | 1.4472 | 1.4472 | 1.4472 | 1.4472 | 1.4472 | 1.4472 | 1.4472 |
| 3 | 2.8302 | 2.7486 | 2.6693 | 2.5923 | 2.5175 | 2.4449 | 2.3744 | 2.2087 | 2.1347 | 2.1347 | 2.1347 | 2.1347 | 2.1347 | 2.1347 | 2.1347 | 2.1347 | 2.1347 | 2.1347 | 2.1347 | 2.1347 | 2.1347 |
| 4 | 3.7197 | 3.6124 | 3.5082 | 3.4070 | 3.3088 | 3.2133 | 2.9965 | 2.8962 | 2.7992 | 2.7992 | 2.7992 | 2.7992 | 2.7992 | 2.7992 | 2.7992 | 2.7992 | 2.7992 | 2.7992 | 2.7992 | 2.7992 | 2.7992 |
| 5 | 4.5836 | 4.4514 | 4.3230 | 4.1983 | 4.0772 | 3.8117 | 3.6840 | 3.5606 | 3.4414 | 3.4414 | 3.4414 | 3.4414 | 3.4414 | 3.4414 | 3.4414 | 3.4414 | 3.4414 | 3.4414 | 3.4414 | 3.4414 | 3.4414 |
| 6 | 5.4225 | 5.2661 | 5.1142 | 4.9667 | 4.8250 | 4.6891 | 4.5584 | 4.4330 | 4.3076 | 4.3076 | 4.3076 | 4.3076 | 4.3076 | 4.3076 | 4.3076 | 4.3076 | 4.3076 | 4.3076 | 4.3076 | 4.3076 | 4.3076 |
| 7 | 6.2373 | 6.0573 | 5.8826 | 5.7277 | 5.5782 | 5.4341 | 5.2954 | 5.1620 | 5.0338 | 5.0338 | 5.0338 | 5.0338 | 5.0338 | 5.0338 | 5.0338 | 5.0338 | 5.0338 | 5.0338 | 5.0338 | 5.0338 | 5.0338 |
| 8 | 7.0285 | 6.8258 | 6.6305 | 6.4426 | 6.2607 | 6.0848 | 5.9140 | 5.7483 | 5.5827 | 5.5827 | 5.5827 | 5.5827 | 5.5827 | 5.5827 | 5.5827 | 5.5827 | 5.5827 | 5.5827 | 5.5827 | 5.5827 | 5.5827 |
| 9 | 7.7969 | 7.5646 | 7.3430 | 7.1319 | 6.9312 | 6.7407 | 6.5507 | 6.3611 | 6.1719 | 6.1719 | 6.1719 | 6.1719 | 6.1719 | 6.1719 | 6.1719 | 6.1719 | 6.1719 | 6.1719 | 6.1719 | 6.1719 | 6.1719 |
| 10 | 8.5312 | 8.2621 | 7.9984 | 7.7501 | 7.5070 | 7.2691 | 7.0363 | 6.8086 | 6.5860 | 6.5860 | 6.5860 | 6.5860 | 6.5860 | 6.5860 | 6.5860 | 6.5860 | 6.5860 | 6.5860 | 6.5860 | 6.5860 | 6.5860 |
| 11 | 9.0186 | 8.7166 | 8.4246 | 8.1425 | 7.8697 | 7.6062 | 7.3514 | 7.1052 | 6.8672 | 6.8672 | 6.8672 | 6.8672 | 6.8672 | 6.8672 | 6.8672 | 6.8672 | 6.8672 | 6.8672 | 6.8672 | 6.8672 | 6.8672 |
| 12 | 9.6831 | 9.3588 | 9.0453 | 8.7424 | 8.4495 | 8.1665 | 7.8930 | 7.6287 | 7.3732 | 7.3732 | 7.3732 | 7.3732 | 7.3732 | 7.3732 | 7.3732 | 7.3732 | 7.3732 | 7.3732 | 7.3732 | 7.3732 | 7.3732 |
| 13 | 10.3253 | 9.9794 | 9.6452 | 9.3222 | 9.0099 | 8.7082 | 8.4165 | 8.1346 | 7.8622 | 7.8622 | 7.8622 | 7.8622 | 7.8622 | 7.8622 | 7.8622 | 7.8622 | 7.8622 | 7.8622 | 7.8622 | 7.8622 | 7.8622 |
| 14 | 10.9460 | 10.5793 | 10.2250 | 9.8825 | 9.5515 | 9.2316 | 8.9224 | 8.6236 | 8.3348 | 8.3348 | 8.3348 | 8.3348 | 8.3348 | 8.3348 | 8.3348 | 8.3348 | 8.3348 | 8.3348 | 8.3348 | 8.3348 | 8.3348 |
| 15 | 11.5458 | 11.1591 | 10.7854 | 10.4242 | 10.0750 | 9.7376 | 9.4114 | 9.0962 | 8.7916 | 8.7916 | 8.7916 | 8.7916 | 8.7916 | 8.7916 | 8.7916 | 8.7916 | 8.7916 | 8.7916 | 8.7916 | 8.7916 | 8.7916 |
| 16 | 12.1257 | 11.7195 | 11.3270 | 10.9476 | 10.5810 | 10.2266 | 9.8841 | 9.5530 | 9.2331 | 9.2331 | 9.2331 | 9.2331 | 9.2331 | 9.2331 | 9.2331 | 9.2331 | 9.2331 | 9.2331 | 9.2331 | 9.2331 | 9.2331 |
| 17 | 12.6860 | 12.2611 | 11.8505 | 11.4536 | 11.0700 | 10.6992 | 10.3409 | 9.9945 | 9.6598 | 9.6598 | 9.6598 | 9.6598 | 9.6598 | 9.6598 | 9.6598 | 9.6598 | 9.6598 | 9.6598 | 9.6598 | 9.6598 | 9.6598 |
| 18 | 13.2277 | 12.7846 | 12.3564 | 11.9426 | 11.5426 | 11.1560 | 10.7823 | 10.4212 | 10.0722 | 10.0722 | 10.0722 | 10.0722 | 10.0722 | 10.0722 | 10.0722 | 10.0722 | 10.0722 | 10.0722 | 10.0722 | 10.0722 | 10.0722 |
| 19 | 13.7511 | 13.2906 | 12.8454 | 12.4152 | 11.9994 | 11.5975 | 11.2091 | 10.8336 | 10.4708 | 10.4708 | 10.4708 | 10.4708 | 10.4708 | 10.4708 | 10.4708 | 10.4708 | 10.4708 | 10.4708 | 10.4708 | 10.4708 | 10.4708 |
| 20 | 14.2571 | 13.7796 | 13.3180 | 12.8720 | 12.4409 | 12.0242 | 11.6215 | 11.2322 | 10.8560 | 10.8560 | 10.8560 | 10.8560 | 10.8560 | 10.8560 | 10.8560 | 10.8560 | 10.8560 | 10.8560 | 10.8560 | 10.8560 | 10.8560 |
| 21 | 14.7461 | 14.2522 | 13.7748 | 13.3135 | 12.8676 | 12.4366 | 12.0201 | 11.6175 | 11.2284 | 11.2284 | 11.2284 | 11.2284 | 11.2284 | 11.2284 | 11.2284 | 11.2284 | 11.2284 | 11.2284 | 11.2284 | 11.2284 | 11.2284 |
| 22 | 15.2187 | 14.7090 | 14.2163 | 13.7402 | 13.2800 | 12.8352 | 12.4053 | 11.9898 | 11.5883 | 11.5883 | 11.5883 | 11.5883 | 11.5883 | 11.5883 | 11.5883 | 11.5883 | 11.5883 | 11.5883 | 11.5883 | 11.5883 | 11.5883 |
| 23 | 15.6755 | 15.1505 | 14.6430 | 14.1526 | 13.6786 | 13.2204 | 12.7777 | 12.3497 | 11.9361 | 11.9361 | 11.9361 | 11.9361 | 11.9361 | 11.9361 | 11.9361 | 11.9361 | 11.9361 | 11.9361 | 11.9361 | 11.9361 | 11.9361 |
| 24 | 16.1170 | 15.5772 | 15.0554 | 14.5512 | 14.0638 | 13.5928 | 13.1375 | 12.6975 | 12.2722 | 12.2722 | 12.2722 | 12.2722 | 12.2722 | 12.2722 | 12.2722 | 12.2722 | 12.2722 | 12.2722 | 12.2722 | 12.2722 | 12.2722 |
| 25 | 16.5437 | 15.9896 | 15.4540 | 14.9364 | 14.4362 | 13.9527 | 13.4854 | 13.0337 | 12.5972 | 12.5972 | 12.5972 | 12.5972 | 12.5972 | 12.5972 | 12.5972 | 12.5972 | 12.5972 | 12.5972 | 12.5972 | 12.5972 | 12.5972 |
| 30 | 18.4722 | 17.8535 | 17.2555 | 16.6776 | 16.1190 | 15.5791 | 15.0573 | 14.5530 | 14.0656 | 14.0656 | 14.0656 | 14.0656 | 14.0656 | 14.0656 | 14.0656 | 14.0656 | 14.0656 | 14.0656 | 14.0656 | 14.0656 | 14.0656 |
| 35 | 20.0986 | 19.4255 | 18.7748 | 18.1460 | 17.5383 | 16.9508 | 16.3831 | 15.8344 | 15.3041 | 15.3041 | 15.3041 | 15.3041 | 15.3041 | 15.3041 | 15.3041 | 15.3041 | 15.3041 | 15.3041 | 15.3041 | 15.3041 | 15.3041 |
| 40 | 21.4703 | 20.7512 | 20.0562 | 19.3845 | 18.7352 | 18.1077 | 17.5013 | 16.9151 | 16.3486 | 16.3486 | 16.3486 | 16.3486 | 16.3486 | 16.3486 | 16.3486 | 16.3486 | 16.3486 | 16.3486 | 16.3486 | 16.3486 | 16.3486 |
| 45 | 22.6272 | 21.8694 | 21.1369 | 20.4290 | 19.7448 | 19.0834 | 18.4443 | 17.8265 | 17.2295 | 17.2295 | 17.2295 | 17.2295 | 17.2295 | 17.2295 | 17.2295 | 17.2295 | 17.2295 | 17.2295 | 17.2295 | 17.2295 | 17.2295 |
| 50 | 23.6029 | 22.8124 | 22.0484 | 21.3099 | 20.5962 | 19.9063 | 19.2396 | 18.5952 | 17.9724 | 17.9724 | 17.9724 | 17.9724 | 17.9724 | 17.9724 | 17.9724 | 17.9724 | 17.9724 | 17.9724 | 17.9724 | 17.9724 | 17.9724 |

Notes: <1> Data Based on Assumed DOS of Apr 1994.

<2> Authorized Period of Use of Table is Oct 1993 through Sep 1994.
Tabulated Data Based on Criteria Contained in 18 Mar 91 Tri-Service Memorandum
of Agreement on Criteria/Standards for EA/LCC for MILCON Design
(Discount rate = 4.0% for total study periods of 10 years or less;
discount rate = 4.5% for total study periods greater than 10 years.)

<3> Covers Costs such as Routine Maintenance & Repair and Custodial.

Table NE-2-8. Present Worth Factors--Annually Recurring Costs,
Non-Zero Differential Escalation (e = 2%)

| Number of Payments | Beneficial Occupancy Date | | | | | | | | | | | |
|--------------------------|---------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|---------|--|
| | Oct 1994 | Oct 1995 | Oct 1996 | Oct 1997 | Oct 1998 | Oct 1999 | Oct 2000 | Oct 2001 | Oct 2002 | Oct 2003 | | |
| 1 | 0.9808 | 0.9619 | 0.9434 | 0.9253 | 0.9075 | 0.8900 | 0.8729 | 0.8561 | 0.8397 | 0.8239 | 0.8084 | |
| 2 | 1.9427 | 1.9053 | 1.8687 | 1.8327 | 1.7975 | 1.7629 | 1.7290 | 1.6958 | 1.5891 | 1.5511 | 1.5156 | |
| 3 | 2.8861 | 2.8306 | 2.7762 | 2.7228 | 2.6704 | 2.6190 | 2.5687 | 2.4130 | 2.3553 | 2.2989 | 2.2436 | |
| 4 | 3.8114 | 3.7381 | 3.6662 | 3.5957 | 3.5265 | 3.4587 | 3.2571 | 3.1792 | 3.1031 | 3.0289 | 2.9557 | |
| 5 | 4.7188 | 4.6281 | 4.5391 | 4.4518 | 4.3662 | 4.2819 | 4.0233 | 3.9270 | 3.8331 | 3.7414 | 3.6507 | |
| 6 | 5.6089 | 5.5010 | 5.3952 | 5.2914 | 5.0079 | 4.8880 | 4.7711 | 4.6570 | 4.5456 | 4.4368 | 4.3300 | |
| 7 | 6.4818 | 6.3571 | 6.2349 | 6.1155 | 5.7740 | 5.6359 | 5.5011 | 5.3695 | 5.2410 | 5.1156 | 5.0000 | |
| 8 | 7.3379 | 7.1968 | 7.0485 | 6.8817 | 6.5219 | 6.3658 | 6.2135 | 6.0649 | 5.9198 | 5.7782 | 5.6400 | |
| 9 | 8.1775 | 7.9982 | 7.8116 | 7.6176 | 7.2518 | 7.0783 | 6.9090 | 6.7437 | 6.5824 | 6.4249 | 6.2700 | |
| 10 | 8.7743 | 8.5644 | 8.3595 | 8.1595 | 7.9643 | 7.7738 | 7.5878 | 7.4063 | 7.2291 | 7.0561 | 6.8875 | |
| 11 | 9.5404 | 9.3122 | 9.0894 | 8.8720 | 8.6597 | 8.4526 | 8.2503 | 8.0530 | 7.8603 | 7.6723 | 7.4890 | |
| 12 | 10.2883 | 10.0421 | 9.8019 | 9.5674 | 9.3385 | 9.1151 | 8.8970 | 8.6842 | 8.4764 | 8.2737 | 8.0760 | |
| 13 | 11.0182 | 10.7546 | 10.4973 | 10.2462 | 10.0011 | 9.7618 | 9.5283 | 9.3003 | 9.0778 | 8.8607 | 8.6480 | |
| 14 | 11.7307 | 11.4501 | 11.1761 | 10.9088 | 10.6478 | 10.3931 | 10.1444 | 9.9017 | 9.6649 | 9.4336 | 9.2070 | |
| 15 | 12.4261 | 12.1289 | 11.8387 | 11.5555 | 11.2790 | 11.0092 | 10.7458 | 10.4887 | 10.2378 | 9.9929 | 9.7500 | |
| 16 | 13.1049 | 12.7914 | 12.4854 | 12.1867 | 11.8952 | 11.6106 | 11.3328 | 11.0617 | 10.7971 | 10.5388 | 10.2860 | |
| 17 | 13.7675 | 13.4381 | 13.1167 | 12.8029 | 12.4966 | 12.1976 | 11.9058 | 11.6210 | 11.3430 | 11.0716 | 10.8060 | |
| 18 | 14.4142 | 14.0694 | 13.7328 | 13.4043 | 13.0836 | 12.7706 | 12.4651 | 12.1668 | 11.8758 | 11.5917 | 11.3130 | |
| 19 | 15.0455 | 14.6855 | 14.3342 | 13.9913 | 13.6565 | 13.3298 | 13.0109 | 12.6997 | 12.3959 | 12.0993 | 11.8100 | |
| 20 | 15.6616 | 15.2869 | 14.9212 | 14.5642 | 14.2158 | 13.8757 | 13.5438 | 13.2197 | 12.9035 | 12.5948 | 12.2920 | |
| 21 | 16.2630 | 15.8739 | 15.4942 | 15.1235 | 14.7617 | 14.4085 | 14.0638 | 13.7274 | 13.3990 | 13.0784 | 12.7650 | |
| 22 | 16.8500 | 16.4469 | 16.0534 | 15.6694 | 15.2945 | 14.9286 | 14.5715 | 14.2229 | 13.8826 | 13.5505 | 13.2260 | |
| 23 | 17.4230 | 17.0061 | 16.5993 | 16.2022 | 15.8146 | 15.4362 | 15.0669 | 14.7065 | 14.3547 | 14.0113 | 13.6760 | |
| 24 | 17.9822 | 17.5520 | 17.1321 | 16.7223 | 16.3222 | 15.9317 | 15.5506 | 15.1786 | 14.8154 | 14.4610 | 14.1150 | |
| 25 | 18.5281 | 18.0848 | 17.6522 | 17.2299 | 16.8177 | 16.4154 | 16.0226 | 15.6393 | 15.2652 | 14.9000 | 14.5440 | |
| 30 | 21.0677 | 20.5637 | 20.0718 | 19.5916 | 19.1229 | 18.6654 | 18.2189 | 17.7830 | 17.3576 | 16.9423 | 16.5370 | |
| 35 | 23.3178 | 22.7600 | 22.2155 | 21.6840 | 21.1652 | 20.6589 | 20.1647 | 19.6823 | 19.2114 | 18.7518 | 18.3020 | |
| 40 | 25.3113 | 24.7057 | 24.1147 | 23.5378 | 22.9747 | 22.4251 | 21.8886 | 21.3649 | 20.8538 | 20.3549 | 19.8670 | |
| 45 | 27.0774 | 26.4297 | 25.7974 | 25.1802 | 24.5778 | 23.9898 | 23.4159 | 22.8557 | 22.3089 | 21.7752 | 21.2520 | |
| 50 | 28.6422 | 27.9570 | 27.2882 | 26.6353 | 25.9981 | 25.3762 | 24.7691 | 24.1765 | 23.5981 | 23.0336 | 22.4800 | |

Notes: <1> Data Based on Assumed DOS of Apr 1994.

<2> Authorized Period of Use of Table is Oct 1993 through Sep 1994.
 Tabulated Data Based on Criteria Contained in 18 Mar 91 Tri-Service Memorandum
 of Agreement on Criteria/Standards for EA/LCC for MILCON Design
 (Discount rate = 4.0% for total study periods of 10 years or less;
 discount rate = 4.5% for total study periods greater than 10 years.)

<3> Covers Costs such as Routine Maintenance & Repair and Custodial.

Table NE-2-9. Present Worth Factors--Annually Recurring Costs,
Non-Zero Differential Escalation (e = 3%)

| Number of Payments | Beneficial Occupancy Date | | | | | | | | | | | | | | |
|--------------------|---------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|--|--|--|--|--|
| | Oct 1994 | Oct 1995 | Oct 1996 | Oct 1997 | Oct 1998 | Oct 1999 | Oct 2000 | Oct 2001 | Oct 2002 | Oct 2003 | | | | | |
| 1 | 0.9904 | 0.9809 | 0.9714 | 0.9621 | 0.9528 | 0.9437 | 0.9346 | 0.9256 | 0.9167 | 0.8654 | | | | | |
| 2 | 1.9712 | 1.9523 | 1.9335 | 1.9149 | 1.8965 | 1.8783 | 1.8602 | 1.8423 | 1.7434 | 1.7183 | | | | | |
| 3 | 2.9427 | 2.9144 | 2.8864 | 2.8586 | 2.8311 | 2.8039 | 2.7769 | 2.6341 | 2.5963 | 2.5591 | | | | | |
| 4 | 3.9048 | 3.8672 | 3.8300 | 3.7932 | 3.7567 | 3.7206 | 3.5379 | 3.4871 | 3.4371 | 3.3877 | | | | | |
| 5 | 4.8576 | 4.8109 | 4.7646 | 4.7188 | 4.6735 | 4.4548 | 4.3909 | 4.3278 | 4.2657 | 4.2045 | | | | | |
| 6 | 5.8013 | 5.7455 | 5.6903 | 5.6355 | 5.5811 | 5.3078 | 5.2316 | 5.1565 | 5.0825 | 5.0095 | | | | | |
| 7 | 6.7359 | 6.6711 | 6.6070 | 6.5432 | 6.4800 | 6.1485 | 6.0602 | 5.9732 | 5.8875 | 5.8030 | | | | | |
| 8 | 7.6615 | 7.5878 | 7.5148 | 7.4426 | 7.3711 | 7.0399 | 6.9482 | 6.8620 | 6.7770 | 6.6810 | | | | | |
| 9 | 8.5782 | 8.4959 | 8.4144 | 8.3337 | 8.2538 | 7.9233 | 7.8282 | 7.7432 | 7.6582 | 7.5632 | | | | | |
| 10 | 9.4849 | 9.3936 | 9.3033 | 9.2139 | 9.1254 | 8.7955 | 8.6960 | 8.6120 | 8.5280 | 8.4340 | | | | | |
| 11 | 10.3916 | 10.2913 | 10.1920 | 10.0936 | 9.9961 | 9.6668 | 9.5673 | 9.4833 | 9.3993 | 9.3053 | | | | | |
| 12 | 11.2983 | 11.1880 | 11.0800 | 10.9733 | 10.8678 | 10.5389 | 10.4394 | 10.3554 | 10.2714 | 10.1774 | | | | | |
| 13 | 12.2050 | 12.0847 | 11.9757 | 11.8680 | 11.7615 | 11.4326 | 11.3331 | 11.2491 | 11.1651 | 11.0711 | | | | | |
| 14 | 13.1117 | 12.9814 | 12.8724 | 12.7657 | 12.6602 | 12.3313 | 12.2318 | 12.1478 | 12.0638 | 11.9698 | | | | | |
| 15 | 14.0184 | 13.8881 | 13.7791 | 13.6724 | 13.5669 | 13.2380 | 13.1385 | 13.0545 | 12.9705 | 12.8765 | | | | | |
| 16 | 14.9251 | 14.7948 | 14.6858 | 14.5801 | 14.4746 | 14.1457 | 14.0462 | 13.9622 | 13.8782 | 13.7842 | | | | | |
| 17 | 15.8318 | 15.7015 | 15.5925 | 15.4868 | 15.3813 | 15.0524 | 14.9529 | 14.8689 | 14.7849 | 14.6909 | | | | | |
| 18 | 16.7385 | 16.6082 | 16.4992 | 16.3935 | 16.2880 | 15.9591 | 15.8596 | 15.7756 | 15.6916 | 15.5976 | | | | | |
| 19 | 17.6452 | 17.5149 | 17.4059 | 17.3002 | 17.1947 | 16.8658 | 16.7663 | 16.6823 | 16.5983 | 16.5043 | | | | | |
| 20 | 18.5519 | 18.4216 | 18.3126 | 18.2069 | 18.1014 | 17.7725 | 17.6730 | 17.5890 | 17.5050 | 17.4110 | | | | | |
| 21 | 19.4586 | 19.3283 | 19.2193 | 19.1136 | 19.0081 | 18.6792 | 18.5797 | 18.4957 | 18.4117 | 18.3177 | | | | | |
| 22 | 20.3653 | 20.2350 | 20.1260 | 20.0203 | 19.9148 | 19.5859 | 19.4864 | 19.4024 | 19.3184 | 19.2244 | | | | | |
| 23 | 21.2720 | 21.1417 | 21.0327 | 20.9270 | 20.8215 | 20.4926 | 20.3931 | 20.3091 | 20.2251 | 20.1311 | | | | | |
| 24 | 22.1787 | 22.0484 | 21.9394 | 21.8337 | 21.7282 | 21.3993 | 21.2998 | 21.2158 | 21.1318 | 21.0378 | | | | | |
| 25 | 23.0854 | 22.9551 | 22.8461 | 22.7404 | 22.6349 | 22.3060 | 22.2065 | 22.1225 | 22.0385 | 21.9445 | | | | | |
| 30 | 28.5117 | 28.3814 | 28.2724 | 28.1667 | 28.0612 | 27.7323 | 27.6328 | 27.5488 | 27.4648 | 27.3708 | | | | | |
| 35 | 33.9380 | 33.8077 | 33.6987 | 33.5930 | 33.4875 | 33.1586 | 33.0591 | 32.9751 | 32.8911 | 32.7971 | | | | | |
| 40 | 39.3643 | 39.2340 | 39.1250 | 39.0193 | 38.9138 | 38.5849 | 38.4854 | 38.4014 | 38.3174 | 38.2234 | | | | | |
| 45 | 44.7906 | 44.6603 | 44.5513 | 44.4456 | 44.3401 | 43.9112 | 43.8117 | 43.7277 | 43.6437 | 43.5497 | | | | | |
| 50 | 50.2169 | 50.0866 | 49.9776 | 49.8719 | 49.7664 | 49.3375 | 49.2380 | 49.1540 | 49.0700 | 48.9760 | | | | | |

Notes: <1> Data Based on Assumed DOS of Apr 1994.

<2> Authorized Period of Use of Table is Oct 1993 through Sep 1994.

<3> Tabulated Data Based on Criteria Contained in 18 Mar 91 Tri-Service Memorandum

of Agreement on Criteria/Standards for EA/LCC for MILCON Design

(Discount rate = 4.0% for total study periods of 10 years or less;

discount rate = 4.5% for total study periods greater than 10 years.)

<4> Covers Costs such as Routine Maintenance & Repair and Custodial.

Table NE-2-10. Present Worth Factors--Annually Recurring Costs,
Non-Zero Differential Escalation (e = 4%)

| Number of Payments | Beneficial Occupancy Date | | | | | | | | | | | | | | | | | | | | |
|--------------------|---------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|---------|
| | Oct 1994 | Oct 1995 | Oct 1996 | Oct 1997 | Oct 1998 | Oct 1999 | Oct 2000 | Oct 2001 | Oct 2002 | Oct 2003 | Oct 2004 | Oct 2005 | Oct 2006 | Oct 2007 | Oct 2008 | Oct 2009 | Oct 2010 | Oct 2011 | Oct 2012 | Oct 2013 | |
| 1 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| 2 | 2.0000 | 2.0000 | 2.0000 | 2.0000 | 2.0000 | 2.0000 | 2.0000 | 2.0000 | 2.0000 | 2.0000 | 2.0000 | 2.0000 | 2.0000 | 2.0000 | 2.0000 | 2.0000 | 2.0000 | 2.0000 | 2.0000 | 2.0000 | 2.0000 |
| 3 | 3.0000 | 3.0000 | 3.0000 | 3.0000 | 3.0000 | 3.0000 | 3.0000 | 3.0000 | 3.0000 | 3.0000 | 3.0000 | 3.0000 | 3.0000 | 3.0000 | 3.0000 | 3.0000 | 3.0000 | 3.0000 | 3.0000 | 3.0000 | 3.0000 |
| 4 | 4.0000 | 4.0000 | 4.0000 | 4.0000 | 4.0000 | 4.0000 | 4.0000 | 4.0000 | 4.0000 | 4.0000 | 4.0000 | 4.0000 | 4.0000 | 4.0000 | 4.0000 | 4.0000 | 4.0000 | 4.0000 | 4.0000 | 4.0000 | 4.0000 |
| 5 | 5.0000 | 5.0000 | 5.0000 | 5.0000 | 5.0000 | 5.0000 | 5.0000 | 5.0000 | 5.0000 | 5.0000 | 5.0000 | 5.0000 | 5.0000 | 5.0000 | 5.0000 | 5.0000 | 5.0000 | 5.0000 | 5.0000 | 5.0000 | 5.0000 |
| 6 | 6.0000 | 6.0000 | 6.0000 | 6.0000 | 6.0000 | 6.0000 | 6.0000 | 6.0000 | 6.0000 | 6.0000 | 6.0000 | 6.0000 | 6.0000 | 6.0000 | 6.0000 | 6.0000 | 6.0000 | 6.0000 | 6.0000 | 6.0000 | 6.0000 |
| 7 | 7.0000 | 7.0000 | 7.0000 | 7.0000 | 7.0000 | 7.0000 | 7.0000 | 7.0000 | 7.0000 | 7.0000 | 7.0000 | 7.0000 | 7.0000 | 7.0000 | 7.0000 | 7.0000 | 7.0000 | 7.0000 | 7.0000 | 7.0000 | 7.0000 |
| 8 | 8.0000 | 8.0000 | 8.0000 | 8.0000 | 8.0000 | 8.0000 | 8.0000 | 8.0000 | 8.0000 | 8.0000 | 8.0000 | 8.0000 | 8.0000 | 8.0000 | 8.0000 | 8.0000 | 8.0000 | 8.0000 | 8.0000 | 8.0000 | 8.0000 |
| 9 | 9.0000 | 8.7454 | 8.7035 | 8.6619 | 8.6204 | 8.5792 | 8.5381 | 8.4973 | 8.4566 | 8.4162 | 8.3759 | 8.3357 | 8.2956 | 8.2556 | 8.2156 | 8.1756 | 8.1356 | 8.0956 | 8.0556 | 8.0156 | 7.9756 |
| 10 | 9.7406 | 9.6940 | 9.6476 | 9.6014 | 9.5555 | 9.5098 | 9.4643 | 9.4190 | 9.3739 | 9.3291 | 9.2843 | 9.2395 | 9.1947 | 9.1500 | 9.1052 | 9.0604 | 9.0156 | 8.9708 | 8.9260 | 8.8812 | 8.8364 |
| 11 | 10.6892 | 10.6380 | 10.5871 | 10.5365 | 10.4861 | 10.4359 | 10.3860 | 10.3363 | 10.2868 | 10.2376 | 10.1884 | 10.1392 | 10.0900 | 10.0408 | 9.9916 | 9.9424 | 9.8932 | 9.8440 | 9.7948 | 9.7456 | 9.6964 |
| 12 | 11.6333 | 11.5776 | 11.5222 | 11.4671 | 11.4122 | 11.3576 | 11.3033 | 11.2492 | 11.1954 | 11.1418 | 11.0881 | 11.0344 | 10.9807 | 10.9270 | 10.8733 | 10.8196 | 10.7659 | 10.7122 | 10.6585 | 10.6048 | 10.5511 |
| 13 | 12.5728 | 12.5127 | 12.4528 | 12.3932 | 12.3339 | 12.2749 | 12.2162 | 12.1577 | 12.0995 | 12.0417 | 11.9839 | 11.9261 | 11.8683 | 11.8105 | 11.7527 | 11.6949 | 11.6371 | 11.5793 | 11.5215 | 11.4637 | 11.4059 |
| 14 | 13.5079 | 13.4432 | 13.3789 | 13.3149 | 13.2512 | 13.1878 | 13.1247 | 13.0619 | 12.9994 | 12.9372 | 12.8750 | 12.8128 | 12.7506 | 12.6884 | 12.6262 | 12.5640 | 12.5018 | 12.4396 | 12.3774 | 12.3152 | 12.2530 |
| 15 | 14.4385 | 14.3694 | 14.3006 | 14.2322 | 14.1641 | 14.0963 | 14.0289 | 13.9618 | 13.8950 | 13.8285 | 13.7620 | 13.6955 | 13.6290 | 13.5625 | 13.4960 | 13.4295 | 13.3630 | 13.2965 | 13.2300 | 13.1635 | 13.0970 |
| 16 | 15.3646 | 15.2911 | 15.2179 | 15.1451 | 15.0726 | 15.0005 | 14.9287 | 14.8573 | 14.7862 | 14.7155 | 14.6448 | 14.5741 | 14.5034 | 14.4327 | 14.3620 | 14.2913 | 14.2206 | 14.1499 | 14.0792 | 14.0085 | 13.9378 |
| 17 | 16.2863 | 16.2084 | 16.1308 | 16.0536 | 15.9768 | 15.9004 | 15.8243 | 15.7486 | 15.6732 | 15.5982 | 15.5231 | 15.4480 | 15.3729 | 15.2978 | 15.2227 | 15.1476 | 15.0725 | 14.9974 | 14.9223 | 14.8472 | 14.7721 |
| 18 | 17.2036 | 17.1213 | 17.0393 | 16.9578 | 16.8767 | 16.7959 | 16.7156 | 16.6356 | 16.5560 | 16.4768 | 16.3976 | 16.3184 | 16.2392 | 16.1600 | 16.0808 | 16.0016 | 15.9224 | 15.8432 | 15.7640 | 15.6848 | 15.6056 |
| 19 | 18.1165 | 18.0298 | 17.9435 | 17.8577 | 17.7722 | 17.6872 | 17.6026 | 17.5184 | 17.4345 | 17.3511 | 17.2681 | 17.1851 | 17.1021 | 17.0191 | 16.9361 | 16.8531 | 16.7701 | 16.6871 | 16.6041 | 16.5211 | 16.4381 |
| 20 | 19.0250 | 18.9340 | 18.8434 | 18.7532 | 18.6635 | 18.5742 | 18.4853 | 18.3969 | 18.3089 | 18.2213 | 18.1337 | 18.0461 | 17.9585 | 17.8709 | 17.7833 | 17.6957 | 17.6081 | 17.5205 | 17.4329 | 17.3453 | 17.2577 |
| 21 | 19.9292 | 19.8338 | 19.7390 | 19.6445 | 19.5505 | 19.4570 | 19.3639 | 19.2712 | 19.1790 | 19.0873 | 19.0000 | 18.9127 | 18.8254 | 18.7381 | 18.6508 | 18.5635 | 18.4762 | 18.3889 | 18.3016 | 18.2143 | 18.1270 |
| 22 | 20.8291 | 20.7294 | 20.6302 | 20.5315 | 20.4333 | 20.3355 | 20.2382 | 20.1414 | 20.0450 | 19.9491 | 19.8532 | 19.7573 | 19.6614 | 19.5655 | 19.4696 | 19.3737 | 19.2778 | 19.1819 | 19.0860 | 18.9901 | 18.8942 |
| 23 | 21.7246 | 21.6207 | 21.5172 | 21.4143 | 21.3118 | 21.2098 | 21.1084 | 21.0074 | 20.9068 | 20.8068 | 20.7068 | 20.6068 | 20.5068 | 20.4068 | 20.3068 | 20.2068 | 20.1068 | 20.0068 | 19.9068 | 19.8068 | 19.7068 |
| 24 | 22.6159 | 22.5077 | 22.4000 | 22.2928 | 22.1861 | 22.0800 | 21.9743 | 21.8692 | 21.7646 | 21.6604 | 21.5562 | 21.4520 | 21.3478 | 21.2436 | 21.1394 | 21.0352 | 20.9310 | 20.8268 | 20.7226 | 20.6184 | 20.5142 |
| 25 | 23.5029 | 23.3904 | 23.2785 | 23.1671 | 23.0563 | 22.9460 | 22.8362 | 22.7269 | 22.6182 | 22.5100 | 22.4018 | 22.2936 | 22.1854 | 22.0772 | 21.9690 | 21.8608 | 21.7526 | 21.6444 | 21.5362 | 21.4280 | 21.3198 |
| 30 | 27.8747 | 27.7413 | 27.6086 | 27.4765 | 27.3450 | 27.2142 | 27.0839 | 26.9544 | 26.8254 | 26.6970 | 26.5685 | 26.4400 | 26.3115 | 26.1830 | 26.0545 | 25.9260 | 25.7975 | 25.6690 | 25.5405 | 25.4120 | 25.2835 |
| 35 | 32.1428 | 31.9890 | 31.8360 | 31.6837 | 31.5321 | 31.3812 | 31.2310 | 31.0816 | 30.9329 | 30.7849 | 30.6368 | 30.4887 | 30.3406 | 30.1925 | 30.0444 | 29.8963 | 29.7482 | 29.6001 | 29.4520 | 29.3039 | 29.1558 |
| 40 | 36.3099 | 36.1362 | 35.9633 | 35.7912 | 35.6199 | 35.4495 | 35.2799 | 35.1111 | 34.9431 | 34.7759 | 34.6087 | 34.4415 | 34.2743 | 34.1071 | 33.9400 | 33.7728 | 33.6056 | 33.4384 | 33.2712 | 33.1040 | 32.9368 |
| 45 | 40.3782 | 40.1850 | 39.9927 | 39.8014 | 39.6109 | 39.4214 | 39.2328 | 39.0451 | 38.8582 | 38.6723 | 38.4864 | 38.3005 | 38.1146 | 37.9287 | 37.7428 | 37.5569 | 37.3710 | 37.1851 | 37.0000 | 36.8149 | 36.6298 |
| 50 | 44.3501 | 44.1379 | 43.9267 | 43.7165 | 43.5074 | 43.2992 | 43.0920 | 42.8858 | 42.6806 | 42.4764 | 42.2722 | 42.0680 | 41.8638 | 41.6596 | 41.4554 | 41.2512 | 41.0470 | 40.8428 | 40.6386 | 40.4344 | 40.2302 |

Notes: <1> Data Based on Assumed DOS of Apr 1994.
 <2> Authorized Period of Use of Table is Oct 1993 through Sep 1994.
 Tabulated Data Based on Criteria Contained in 18 Mar 91 Tri-Service Memorandum of Agreement on Criteria/Standards for EA/LCC for MILCON Design
 (Discount rate = 4.0% for total study periods of 10 years or less;
 discount rate = 4.5% for total study periods greater than 10 years.)
 <3> Covers Costs such as Routine Maintenance & Repair and Custodial.

Table NE-2-11. Present Worth Factors--Annually Recurring Costs,
Non-Zero Differential Escalation (e = 5%)

| Number of Payments | Beneficial Occupancy Date | | | | | | | | | | | | | | | | | | | |
|--------------------------|---------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|--|--|--|--|--|--|--|--|--|--|
| | Oct 1994 | Oct 1995 | Oct 1996 | Oct 1997 | Oct 1998 | Oct 1999 | Oct 2000 | Oct 2001 | Oct 2002 | Oct 2003 | | | | | | | | | | |
| 1 | 1.0096 | 1.0193 | 1.0291 | 1.0390 | 1.0490 | 1.0591 | 1.0693 | 1.0796 | 1.0899 | 1.0489 | | | | | | | | | | |
| 2 | 2.0289 | 2.0484 | 2.0681 | 2.0880 | 2.1081 | 2.1284 | 2.1488 | 2.1695 | 2.0928 | 2.1028 | | | | | | | | | | |
| 3 | 3.0581 | 3.0875 | 3.1172 | 3.1471 | 3.1774 | 3.2079 | 3.2388 | 3.1317 | 3.1467 | 3.1618 | | | | | | | | | | |
| 4 | 4.0971 | 4.1365 | 4.1763 | 4.2164 | 4.2570 | 4.2979 | 4.1657 | 4.1856 | 4.2056 | 4.2258 | | | | | | | | | | |
| 5 | 5.1461 | 5.1956 | 5.2455 | 5.2960 | 5.3469 | 5.1947 | 5.2196 | 5.2446 | 5.2697 | 5.2949 | | | | | | | | | | |
| 6 | 6.2052 | 6.2649 | 6.3251 | 6.3859 | 6.2189 | 6.2487 | 6.2785 | 6.3086 | 6.3388 | 6.3691 | | | | | | | | | | |
| 7 | 7.2745 | 7.3444 | 7.4150 | 7.2382 | 7.2728 | 7.3076 | 7.3426 | 7.3777 | 7.4130 | 7.4485 | | | | | | | | | | |
| 8 | 8.3540 | 8.4344 | 8.2526 | 8.2921 | 8.3318 | 8.3716 | 8.4117 | 8.4519 | 8.4924 | 8.5330 | | | | | | | | | | |
| 9 | 9.4440 | 9.2622 | 9.3065 | 9.3510 | 9.3958 | 9.4407 | 9.4859 | 9.5313 | 9.5769 | 9.6227 | | | | | | | | | | |
| 10 | 10.2670 | 10.3161 | 10.3655 | 10.4151 | 10.4649 | 10.5150 | 10.5653 | 10.6158 | 10.6666 | 10.7176 | | | | | | | | | | |
| 11 | 11.3209 | 11.3750 | 11.4295 | 11.4842 | 11.5391 | 11.5943 | 11.6498 | 11.7055 | 11.7615 | 11.8178 | | | | | | | | | | |
| 12 | 12.3798 | 12.4391 | 12.4986 | 12.5584 | 12.6185 | 12.6788 | 12.7395 | 12.8005 | 12.8617 | 12.9233 | | | | | | | | | | |
| 13 | 13.4439 | 13.5082 | 13.5728 | 13.6377 | 13.7030 | 13.7686 | 13.8344 | 13.9006 | 13.9671 | 14.0340 | | | | | | | | | | |
| 14 | 14.5130 | 14.5824 | 14.6522 | 14.7223 | 14.7927 | 14.8635 | 14.9346 | 15.0061 | 15.0779 | 15.1500 | | | | | | | | | | |
| 15 | 15.5872 | 15.6618 | 15.7367 | 15.8120 | 15.8877 | 15.9637 | 16.0401 | 16.1168 | 16.1939 | 16.2714 | | | | | | | | | | |
| 16 | 16.6665 | 16.7463 | 16.8264 | 16.9069 | 16.9878 | 17.0691 | 17.1508 | 17.2328 | 17.3153 | 17.3981 | | | | | | | | | | |
| 17 | 17.7511 | 17.8360 | 17.9214 | 18.0071 | 18.0933 | 18.1798 | 18.2668 | 18.3542 | 18.4420 | 18.5303 | | | | | | | | | | |
| 18 | 18.8408 | 18.9309 | 19.0215 | 19.1125 | 19.2040 | 19.2959 | 19.3882 | 19.4810 | 19.5742 | 19.6678 | | | | | | | | | | |
| 19 | 19.9357 | 20.0311 | 20.1270 | 20.2233 | 20.3200 | 20.4172 | 20.5149 | 20.6131 | 20.7117 | 20.8108 | | | | | | | | | | |
| 20 | 21.0359 | 21.1365 | 21.2377 | 21.3393 | 21.4414 | 21.5440 | 21.6471 | 21.7506 | 21.8547 | 21.9593 | | | | | | | | | | |
| 21 | 22.1413 | 22.2473 | 22.3537 | 22.4607 | 22.5681 | 22.6761 | 22.7846 | 22.8936 | 23.0032 | 23.1132 | | | | | | | | | | |
| 22 | 23.2521 | 23.3633 | 23.4751 | 23.5874 | 23.7003 | 23.8137 | 23.9276 | 24.0421 | 24.1571 | 24.2727 | | | | | | | | | | |
| 23 | 24.3681 | 24.4847 | 24.6018 | 24.7196 | 24.8378 | 24.9567 | 25.0761 | 25.1961 | 25.3166 | 25.4377 | | | | | | | | | | |
| 24 | 25.4895 | 25.6114 | 25.7340 | 25.8571 | 25.9808 | 26.1051 | 26.2300 | 26.3555 | 26.4816 | 26.6084 | | | | | | | | | | |
| 25 | 26.6162 | 26.7436 | 26.8715 | 27.0001 | 27.1293 | 27.2591 | 27.3895 | 27.5206 | 27.6522 | 27.7846 | | | | | | | | | | |
| 30 | 32.3313 | 32.4860 | 32.6415 | 32.7976 | 32.9546 | 33.1122 | 33.2707 | 33.4299 | 33.5898 | 33.7505 | | | | | | | | | | |
| 35 | 38.1845 | 38.3672 | 38.5507 | 38.7352 | 38.9205 | 39.1068 | 39.2939 | 39.4819 | 39.6708 | 39.8606 | | | | | | | | | | |
| 40 | 44.1790 | 44.3904 | 44.6028 | 44.8162 | 45.0306 | 45.2461 | 45.4625 | 45.6801 | 45.8986 | 46.1182 | | | | | | | | | | |
| 45 | 50.3183 | 50.5590 | 50.8010 | 51.0440 | 51.2882 | 51.5336 | 51.7802 | 52.0280 | 52.2769 | 52.5270 | | | | | | | | | | |
| 50 | 56.6059 | 56.8767 | 57.1489 | 57.4223 | 57.6970 | 57.9731 | 58.2505 | 58.5292 | 58.8092 | 59.0906 | | | | | | | | | | |

Notes: <1> Data Based on Assumed DOS of Apr 1994.

<2> Authorized Period of Use of Table is Oct 1993 through Sep 1994.
 Tabulated Data Based on Criteria Contained in 18 Mar 91 Tri-Service Memorandum
 of Agreement on Criteria/Standards for EA/LCC for MILCON Design
 (Discount rate = 4.0% for total study periods of 10 years or less;
 discount rate = 4.5% for total study periods greater than 10 years.)

<3> Covers Costs such as Routine Maintenance & Repair and Custodial.

MEMORANDUM OF AGREEMENT
ON
CRITERIA/STANDARDS FOR ECONOMIC ANALYSES/LIFE CYCLE COSTING FOR MILCON DESIGN

1. Purpose. The purpose of this Memorandum of Agreement (MOA) is to establish criteria and standards for performing economic analyses and life cycle cost studies used in support of design decisions for projects in the Military Construction (MILCON) Program, i.e., to support the selection from various alternatives of components/systems being considered as elements in facilities design. These criteria and standards apply to all design decisions regardless of when they are made in the planning, programming, design, and procurement process. This agreement does not apply to economic analyses and life cycle studies used to make project-justification decisions during the planning and programming process.

2. General. Economic analyses shall be conducted as part of the design process to ensure that the selection/rejection of design alternatives is not based solely on construction costs, but also on least life cycle costs (LCC), that is, lowest total cost of ownership. The depth and degree of formality of these analyses shall be determined on a case-by-case basis to ensure that the cost of performing an analysis is clearly outweighed by the potential benefits derived. Results of generic studies or results of previous analyses of alternatives similar to those currently under consideration may be used in lieu of performing a new study provided the previous study was based on similar design conditions, criteria, and methods. Previous studies should be updated only as required to reflect changes of conditions significant enough to impact the design decision. All economic analyses and other justification for the selection of a design alternative, whether a previous study or a new one, shall be clearly documented in the appropriate section of the project design analysis.

3. Methods. All analyses shall consider the total LCC for design alternatives, where the LCC includes all costs and benefits associated with an alternative over its expected life, including but not limited to construction/procurement, energy, maintenance, operation, repair, replacement, alteration, disposal costs, and retention values. The present value discounting approach shall be used to adjust for the differences in timing of costs and benefits unless otherwise specified by other directives or by public law. The basic discount factor for finding the present value of a future amount is calculated as follows:

$$\text{Discount Factor} = \frac{1}{(1 + d)^n}$$

where: d = appropriate discount rate, and
n = the time period over which the discounting is done.

Discounting should be applied to all costs and benefits over the appropriate analysis period. Specific criteria are as follows:

a. Discount Rates. The discount rates are expressed in "real" terms, i.e., over-and-above the rate of inflation for the economy as a whole.

(1) Non-energy related studies: An annual "real" discount rate of 10% should be used in evaluating all non-energy related economic studies.

(2) Energy related studies: All energy related economic studies (studies in which energy costs are relevant, regardless of their magnitude relative to other costs) shall use the current discount rate published by the National Institute of Standards and Technology (NIST) in their annual supplement to NIST Handbook 135, and disseminated by the appropriate Service Headquarters Office.

b. Analysis Period: The analysis period shall be the date of the study (DOS) through the economic life of the facility as a whole. The economic life shall not be taken beyond 25 years from the scheduled beneficial occupancy date (BOD) for the project unless specifically approved by the appropriate Service Headquarters Office. Such approval cannot be granted for energy related studies as it is precluded by statute.

c. Cash Flow: In general, cash flow used in the analysis will be based on the estimated calendar dates on which the events and costs/benefits are projected/scheduled to occur. Construction/procurement costs may be assumed to be incurred as a single lump sum, preferably at the time corresponding to the midpoint of the construction/procurement process. Other cash flows that occur periodically throughout the year (e.g., cost of fuel, electricity, water, maintenance, etc.) may be assumed to be incurred as a single lump sum, preferably at midyear. In circumstances where the above assumptions add unnecessarily to the complexity of the calculations, all cash flows may be assumed to occur at the end of the year in which they are actually scheduled/projected to occur.

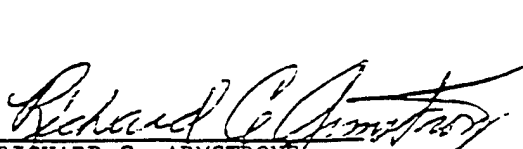
d. Benefits and Costs: All benefits and costs will be expressed in terms of constant dollars that reflect the purchasing power of the dollar on the DOS (i.e., constant DOS dollars). The rate of inflation of the economy as a whole will be excluded from all LCC calculations. (The rate of inflation is irrelevant to the LCC analysis results since all benefits and costs are expressed in terms of constant DOS dollars and discounted using a "real" discount rate which reflects the time value of money over-and-above the general rate of inflation.)

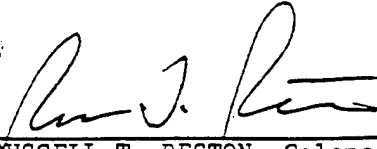
e. Future Benefits and Costs: In projecting future benefits and costs, an allowance for future price-level changes will be made only for particular benefits and costs expected to change at rates higher or lower than the general rate of inflation. In such cases, the rates of change used in the analysis will be the "differential" rates, i.e., the anticipated differences between the actual projected rates of change and the general inflation rate.

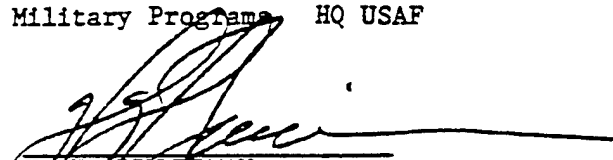
(1) Non-energy studies: For non-energy studies, the differential rate of future price-level change shall generally be assumed to be zero, except in those cases where there is reliable information/data to the contrary.

(2) Energy studies: Fuel/energy costs shall have differential escalation rates as published by NIST in Handbook 135 and disseminated as indicated in paragraph 3.a(2) above. All non-energy costs shall have a zero differential escalation rate.

4. Computer Aided Calculations. All computer aided calculations for MILCON design economic studies will be accomplished using the Life Cycle Cost In Design (LCCID), a computer program for economic analysis developed by the U.S. Army Corps of Engineers Construction Engineering Research Laboratory (CERL) or a version thereof which has been certified by CERL as equivalent.


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