

Exhibit R Design Standards and Codes

May 2007

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The Project, including Island, LNG Terminal and Pipeline, will be designed, constructed, tested, operated, and maintained in accordance applicable regulations, design standards and codes. Key federal regulations governing the LNG facilities and natural gas pipeline include:

33 CFR Part 127, Waterfront Facilities Handling LNG and Liquefied Hazardous Gas applies to the marine transfer area for LNG of each new waterfront facility handling LNG and to new construction in the marine transfer area for LNG of each existing waterfront facility handling LNG. These regulations are administered by the U.S. Coast Guard (USCG) and are specifically related to waterfront LNG handling facilities.

49 CFR Part 192, Transportation of Natural and Other Gas by Pipeline is administered by the USDOT. The proposed Pipeline will be designed, constructed, operated, and maintained in accordance with these standards. The regulations are intended to ensure adequate protection for the public from natural gas pipeline failures. Part 192 specifies material selection and qualification, minimum design requirements, and protection from internal, external, and atmospheric corrosion.

49 CFR Part 193, Liquefied Natural Gas Facilities, Federal Safety Standards is administered by the U.S. Department of Transportation. This regulation mandates compliance with standard ANSI/NFPA 59A and the siting, design, construction, equipment, fire protection, operation and maintenance as they apply to LNG facilities placed in service after March 31, 2000.

In addition **NFPA 59A**, developed by the National Fire Protection Association (NFPA), specifies siting, design, construction, equipment, and fire protection requirements that apply to new LNG facilities and to existing facilities that have been replaced, relocated, or significantly altered. The standard covers design, location, construction, and operation of facilities at any location for the liquefaction of natural gas and storage, and for vaporization, transfer, handling, and truck transport of LNG.

Other codes and standards to be used in the design, construction and operation of the LNG facility are listed in Table R-1 of this document. All applicable local codes and standards that have not been included in the list shall be satisfied in the design.

For each code and standard, the current version as of the time of preparation of this document is listed. The version to be used for design of the LNG import terminal is follows:

- If at the time of design the code or standard version is the same as listed below, the design shall be in accordance with the version listed below.
- If at the time of design the code or standard version listed below has been superseded, the appropriate version to be used shall be agreed to by the Owner, to ensure that the design features affected are within the plant design basis.

Where there is a conflict between an international standard and a local one, the most stringent requirements shall apply.

Table R-1 Design Standards and Codes to be Used

Organization	Standard	Title
ABS	ABS	<i>American Bureau of Shipping (ABS)</i>
ABS	ABS	Guidelines for Building and Classing Undersea Pipeline Systems and Risers, 1991
ABS	ABS	Guidelines for Building and Classing Mobile Offshore Drilling Units, 2001
ABS	ABS	Rules for Building and Classing Offshore Installations, 1997
ABS	ABS	Guidance Notes on the Application of Ergonomics to Marine Systems, 1998
ABS	ABS	Guidelines for Building and Classing Facilities on Offshore Installations, June 2000
ABS	ABS	Guidelines for Building and Classing Offshore LNG Terminals, 2002
ABS	ABS	Guidelines for Building & Classing Steel Vessel, July 2003
ACI	ACI	<i>American Concrete Institute (ACI)</i>
ACI	ACI 211.1	Standard Practice for Selecting Proportion for Normal Heavyweight and Mass Concrete, 1991
ACI	ACI 301	Specifications for Structural Concrete, 2005
ACI	ACI 304R	Guide for Measuring, Mixing, Transportation and Placing of Concrete, 2000
ACI	ACI 305R	Hot Weather Concreting, 1999
ACI	ACI 311.4R	Guide for Concrete Inspection, 2005
ACI	ACI 315	Details and Detailing of Concrete Reinforcement"
ACI	ACI 318	Building Code Requirements for Reinforced Concrete, 2005
ACI	ACI 318R	Building Code Requirements for Structural Concrete, Comentary, 2005
ACI	ACI 357R-85	Guide for the Design of Fixed Offshore Concrete Structures, reapproved 1997
ACI	ACI 372R	Design and Construction of Circular Wire- and Strand-Wrapped Prestressed Concrete Structures, 2003
ACI	ACI 373R	Design and Construction of Circular Prestressed Concrete Structures with Circumferential Tendons, 1997
ACI	ACI 506.2	Specifications for Materials, Proportioning, and Application of Shotcrete, 1995
ACI	ACI 506R-05	Guide to Shotcrete, 1995
ACI	ACI SP 66	Detailing Manual, 2004
AGA	AGA	<i>American Gas Association (AGA)</i>
AGA	AGA Rpt No. 3	Orifice Metering of Natural Gas, Parts 1,2,3 &4, 1990-2000
AGA	AGA Rpt No. 5	Fuel Gas Energy Metering,1996
AGA	AGA Rpt No. 7	Measurement of Gas by Turbine Meters,2006
AGA	AGA Rpt No. 8	Compressibility and Super-Compressibility for Natural Gas and Other Hydrocarbon Gases,1994
AGMA	AGMA	<i>American Gear Manufactures Association</i>
AGMA	AGMA 421.06	Practice for High Speed Helical & Herring Bone Gear Units
AISC	AISC	<i>American Institute of Steel Construction (AISC)</i>
AISC	AISC-LRFD	RCSC Specification for Structural Joints Using ASTM A325 and A490 Bolts, June 23, 2000

Table R-1 Design Standards and Codes to be Used		
Organization	Standard	Title
AISC	AISC-MSC	Steel Construction Manual, 13th Edition, 2005
AISI	AISI SG673	American Iron and Steel Institute (AISI)
AISI	AISI SG673	Cold Formed Steel Design Manual
ANSI	ANSI	American National Standards Institute (ANSI)
ANSI	ANSI B16.20	Metallic Gaskets for Pipe Flanges—Ring-Joint, Spiral-Wound and Jacketed, 2000, Reaffirmed 2004
ANSI	ANSI B16.47	Large Diameter Steel Flanges, 1996, with 1998 Addenda
ANSI	ANSI B95.1	Terminology for Pressure Relief Devices
ANSI	ANSI S1.13	Methods for the Measurement of Sound Pressure Levels in Air
ANSI	ANSI S12.34	Engineering Methods for the Determination of Sound Power Levels of Noise Sources for Essentially Free-Field Conditions over a Reflecting Plane
ANSI	ANSI S12.36	Survey Methods for the Determination of Sound Power Levels of Noise Sources
ANSI	ANSI/ASA S3.41	Audible Emergency Evacuation Signal, 1990
API	API	American Petroleum Institute
API	API 11.2.2	Compressibility Requirements for Hydrocarbon 0.350-0-637 Relative Density and -50 Degrees F to 140 Degrees F Metering Temperature, 1986, with Errata June 1996
API	API 2000	Venting Atmospheric and Low Pressure Storage Tanks, 1998, with Errata 1999
API	API 2001	Fire Protection in Refineries, 2005
API	API 2510	Design and Construction of Liquefied Petroleum Gas (LPG) Installations, 2001
API	API 2510A	Fire Protection Considerations for the Design and Operation of Liquefied Petroleum Gas (LPG) Storage Facilities, 2001
API	API 2555	Method for Liquid Calibration of Tanks, 1966, Reaffirmed 2002
API	API 526	Flanged Steel Safety Relief Valves for Flanged Pressure Relief Valves 1 in. or Larger, 2002
API	API 527	Commercial Seat Tightness of Safety Relief Valves with Metal-to-Metal Seats, 1991, Reaffirmed 2002
API	API 560	Fired Heaters for General Refinery Services, 2001, with Errata 2002
API	API 5L	Specification for Line Pipe, 2004 with Errata December 2004
API	API 600	Steel Gate Valves, Flanged and Buttwelding Ends, 2001
API	API 602	Steel Gate, Globe and Check Valves for Sizes DN 100 and Smaller for the Petroleum and Natural Gas Industries, 2005
API	API 610	Centrifugal Pumps for General Refinery Services, 2004
API	API 613	Special-Purpose Gear Units for Petroleum, Chemical and Gas Industry Services, 2003
API	API 614	Lubrication, Shaft-Sealing, and Control-Oil systems and Auxiliaries for Petroleum, Chemical and Gas Industry Services, 1999
API	API 617	Centrifugal Compressors for Petroleum, Chemical, and Gas Industry Services, 2002, with Errata 2003
API	API 618	Reciprocating Compressors for Petroleum, Chemical, and Gas Industry Services, 1995
API	API 619,	Rotary Type Positive Displacement Compressors for Petroleum, Petrochemical and Natural Gas Industries, 2004

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Organization	Standard	Title
API	API 620	Recommended Rules for Design and Construction of Large, Welded, Low-Pressure Storage Tanks, 2002, with Amendment 1 2004
API	API 650	Welded Steel Tanks for Oil Storage, 1998, with Amendment 4/2006
API	API 661	Air Cooled Heat Exchangers for General Refinery Services, 2006
API	API 670	Machinery Protection Systems, 2000, Reaffirmed 2003
API	API 672	Packaged, Integrally Geared, Centrifugal Plant and Instrument Air Compressors for General Refinery Services, 2004
API	API 682	Shaft Sealing Systems for Centrifugal and Rotary Pumps, 2004
API	API 6D	Specification for Pipeline Valves, 1994."
API	API Bull 2U	Stability Design of Cylindrical Shells, 2004
API	API Bull 2V	Design of Flat Plate Structures, 2004
API	API Bulletin 2521	Use of Pressure Vacuum Vent Valves for Atmospheric Pressure Tanks to Reduce Evaporation Loss"
API	API MPMS	Manual of Petroleum Measurement Standards
API	API MPMS	Manual of Petroleum Measurement Standard"
API	API Publ 2201	Procedures for Welding or Hot Tapping on Equipment in Service
API	API RP 1111	Recommended Practice for Design, Construction, Operation and Maintenance of Offshore Hydrocarbon Pipelines (Limit State Design), 1999
API	API RP 1124	Ship, Barge and Terminal Hydrocarbon Vapor Collection Manifolds, 1991, Reaffirmed 1995
API	API RP 1140	Guidelines for Developing Bridge Management Teams, 1991
API	API RP 14B	Design, Installation, Repair and Operation of Subsurface Safety Valve Systems, 2005
API	API RP 14C	Analysis, Design, Installation and Testing of Basic Surface Safety Systems on Offshore Production Platforms, 2001
API	API RP 14E	Offshore Production Platform Piping Systems, 1991, Reaffirmed 2000
API	API RP 14F	Design and Installation of Electrical Systems for Fixed and Floating Offshore Petroleum Facilities for Unclassified and Class 1, Division 1 and Division 2 Locations, 1999
API	API RP 14G	Recommended Practice for Fire Prevention and Control on Open Type Offshore Production Platforms, 1993, Reaffirmed 2000
API	API RP 14J	Design and Hazard Analysis for Offshore Production Facilities, 2001
API	API RP 2001	Fire Protection in Refineries, 2005
API	API RP 2003	Recommended Practice for Protection Against Ignitions Arising Out of Static, Lightning, and Stray Currents, 1998
API	API RP 2350	Overfill Protection for Storage Tanks in Petroleum Facilities
API	API RP 2A-WSD	Recommended Practice for Planning, Designing and Constructing Fixed Offshore Platforms-Working Stress Design, 2000, with Errata and Supplement 2 (2005)
API	API RP 2D	Operation and Maintenance of Offshore Cranes, 2003
API	API RP 2L	Planning, Designing and Constructing Heliports for Fixed Offshore Platforms, 1996
API	API RP 2T	Planning, Designing and Constructing Tension Leg Platforms, 1997
API	API RP 2X	Ultrasonic and Magnetic Examination of Offshore Structural Fabrication and Guidelines for Qualification of Technicians, 2004

Table R-1 Design Standards and Codes to be Used		
Organization	Standard	Title
API	API RP 500	Recommended Practice for Classification of Locations for Electrical Installations at Petroleum Facilities Classified as Class 1, Division 1 and Division 2,, 1997, Reaffirmed 2002
API	API RP 505	Recommended Practice for Classification of Locations for Electrical Installations at Petroleum Facilities Classified as Class 1, 1st Edition, 1997
API	API RP 520	Sizing, Selection and Installation of Pressure—Relieving Devices in Refineries, Part I—Sizing and Selection,2000
API	API RP 520	Sizing, Selection and Installation of Pressure—Relieving Devices in Refineries, Part II—Installation, 2003
API	API RP 521	Guide for Pressure-Relief and Depressuring Systems, 1997, with Errata 1999
API	API RP 540	Recommended Practice for Electrical Installation in Petrochemical Process Plants, 1999, Reaffirmed 2004
API	API RP 546	Form-Wound Brushless Synchronous Motors 500 Horsepower and Larger”
API	API RP 55	Conducting Oil and Gas Producing and Gas Processing Plant Operations Involving Hydrogen Sulfide
API	API RP 550	Manual on Installation of Refinery Instruments and Control Systems, various dates for each section from 1965-1986
API	API RP 551	Process Measurement Instrumentation, 1993, Reaffirmed 2000
API	API RP 556	Instrumentation and Control Systems for Fired Heaters and Steam Generators, 1997
API	API RP 5L1	Railroad Transportation of Line Pipe, 2002
API	API RP 5LW	Recommended Practice for Transportation of Line Pipe on Barges and Marine Vessels, 1996
API	API RP 683	Quality Improvement Manual for Mechanical Equipment in Petroleum, Chemical and Gas Industries, 1993, Reaffirmed 2000
API	API RP 70	Security of Offshore Oil and Natural Gas Operation, 2003
API	API RP 75	Development of Safety and Environmental Management Program for Outer Continental Shelf Operations and Facilities, 2004
API	API RP 945	Avoiding Environmental Cracking in Amine Units, 2003
API	API Spec 12D	Specification for Field Welded Tanks for Storage of Production Liquids, 1994, Reaffirmed 2000
API	API Spec 12F	Specification for Shop Welded Tanks for Storage of Production Liquids, 1994, Reaffirmed 2000
API	API Spec 2B	Specification for the Fabrication of Structural Steel Pipe, 6th Edition, July, 2001
API	API Spec. 5L	Specification for Line Pipe, 2004
API	API Spec. 6D	Specification for Pipeline Valves (Gate, Plug, Ball and Check Valves), , 2002, with Errata from March 1, 2005
API	API Std. 1104	Welding of Pipelines and Related Facilities, 2005
ASCE	ASCE	American Society of Civil Engineers (ASCE)
ASCE	ASCE 7	Minimum Design Loads for Buildings and Other Structures, 2005, with Supplement 1

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Organization	Standard	Title
ASHRAE	ASHRAE	<i>American Society of Heating, Refrigeration and Air Conditioning Engineers (ASHRAE)</i>
ASHRAE	ASHRAE Handbook	Fundamentals, 2005
ASHRAE	ASHRAE Handbook	HVAC Systems & Equipment, 2004
ASHRAE	ASHRAE Handbook	HVAC Applications, 2003
ASIC	ASIC	<i>American Institute of Steel Construction (AISC)</i>
ASIC	ASIC MSC	Manual of Steel Construction
ASIC	ASIC S326	Design, Fabrication, and Erection of Structural Steel for Buildings”, 1978; Now contained in AISC Manual of Steel Construction
ASIC	ASIC SJU	AISC, “Specification for Structural Joints Using ASTM A325 and A490 Bolts”
ASME	ASME	<i>American Society of Mechanical Engineers (ASME)</i>
ASME	ASME B1.20.1	Pipe Threads General Purpose (Inch), 1983
ASME	ASME B16.10	Face to Face and End to End Dimensions of Valves, 2000
ASME	ASME B16.11	Forged Fittings, Socket-Welding and Threaded, 2005
ASME	ASME B16.20	Ring Joint Gaskets and Grooves for Steel Pipe Flanges, 1998
ASME	ASME B16.21	Nonmetallic Flat Gaskets for Pipe Flanges, 2005
ASME	ASME B16.3	Valves-Flanged, Threaded, and Welded, 1998
ASME	ASME B16.5	Pipe Flanges and Flanged Fittings, 2003
ASME	ASME B16.9	Factory-Made Wrought Steel Butt Welding Fittings
ASME	ASME B31.3	Chemical Plant and Petroleum Refinery Piping, 2004
ASME	ASME B31.5	Refrigeration Piping and Heat Transfer Components, 2001
ASME	ASME B31.8	Gas Transmission and Distribution Piping Systems, 2003
ASME	ASME B40.1	Gauges-Pressure Indicating Dial Type-Elastic Element”
ASME	ASME B73.1	Horizontal End Suction Centrifugal Pumps for Chemical Process, 2001
ASME	ASME B73.2	Vertical In-line Centrifugal Pumps for Chemical Process, 2003
ASME	ASME BPVC	ASME Boiler and Pressure Vessel Code including all mandatory addenda, 2004 with 2005 addenda
ASME	ASME BPVC Section I	Section I, “Power Boilers”
ASME	ASME BPVC Section II	Section II, “Material Specifications”
ASME	ASME BPVC Section IIA	Part A - “Ferrous Materials”
ASME	ASME BPVC Section IIB	Part B - “Nonferrous Materials”
ASME	ASME BPVC Section IIC	Part C - “Welding Rods, Electrodes and Filler Materials”
ASME	ASME BPVC Section IV	Section IV, “Heating Boilers”
ASME	ASME BPVC Section IX	Section IX, “Welding and Brazing Qualifications”

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ASME	ASME BPVC Section IX	Section IX: Welding and Brazing Qualifications
ASME	ASME BPVC Section V	Section V, "Nondestructive Examination"
ASME	ASME BPVC Section VIII	Section VIII, "Pressure Vessels, Division 1"
ASME	ASME BPVC Section VIII	Section VIII, "Pressure Vessels, Division 2 -Alternative Rules"
ASME	ASME PTC-10	Test Code on Compressors & Exhausters, 1997, Reaffirmed 2003
ASTM	ASTM	<i>American Society for Testing and Materials (ASTM)</i>
ASTM	ASTM	ASTM material specifications will be used unless otherwise specified. Below is a partial listing of ASTM material specifications that may be used:
ASTM	ASTM A105	Forgings, Carbon Steel, for Piping Components, 2005
ASTM	ASTM A106	Seamless Carbon Steel Pipe for High-Temperature Service, 2005
ASTM	ASTM A123,	Hot Dip Galvanizing,2002
ASTM	ASTM A153	Zinc Coating (Hot Dip) on Iron and Steel Hardware, 2005
ASTM	ASTM A179	Seamless Cold-Drawn Low-Carbon Steel Heat-Exchanger and Condenser Tubes"
ASTM	ASTM A181	Forgings, Carbon Steel, for General Purpose Piping, 2001
ASTM	ASTM A185	Welded Steel Wire Fabric for Concrete Reinforcement, 2006
ASTM	ASTM A194	Carbon and Alloy Steel Nuts for Bolts for High-Pressure and High-Temperature Service,2006
ASTM	ASTM A200	Seamless Intermediate Alloy-Steel Still Tubes for Refinery Service"
ASTM	ASTM A203,	Pressure Vessel Plates, Alloy Steel, Nickel, 1997, Reaffirmed 2003
ASTM	ASTM A204	Pressure Vessel Plates, Alloy Steel, Molybdenum, 2003
ASTM	ASTM A210	Seamless Medium-Carbon Steel Boiler and Superheater Tubes, 2002
ASTM	ASTM A213	Seamless Ferritic and Austenitic Alloy-Steel Boiler, Superheater, and Heat-Exchanger Tubes, 2006, with editorial changes in July 2006
ASTM	ASTM A214	Electric-Resistance-Welded Carbon Steel Heat-Exchanger and Condenser Tubes, 1996, Reaffirmed 2005
ASTM	ASTM A216	Steel Castings, Carbon, Suitable for Fusion Welding for High Temperature Service, 2004
ASTM	ASTM A217	Steel Castings, Martensitic Stainless and Alloy for Pressure Containing Parts Suitable for High Temperature Service, 2004
ASTM	ASTM A234	Piping Fittings of Wrought Carbon Steel and Alloy Steel for Moderate and Elevated Temperatures, 2006
ASTM	ASTM A240	Heat-Resisting Chromium and Chromium-Nickel Stainless Steel Plate, Sheet and Strip for Pressure Vessels, 2006
ASTM	ASTM A242	High-Strength Low-Alloy Structural Steel, 2004, with editorial change October 2005
ASTM	ASTM A249	Welded Austenitic Steel Boiler, Superheater, Heat- Exchanger, and Condenser Tubes, 2004
ASTM	ASTM A269	Seamless and Welded Austenitic Stainless Steel Tubing for General Service, 2004
ASTM	ASTM A276	Stainless and Heat-Resisting Steel Bars and Shapes, 2006
ASTM	ASTM A283	Low and Intermediate Tensile Strength Carbon Steel Plates, Shapes and Bars, 2003

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Organization	Standard	Title
ASTM	ASTM A285	Pressure Vessel Plates, Carbon Steel, Low- and Intermediate Tensile Strength, 2003
ASTM	ASTM A302	Pressure Vessel Plates, Alloy Steel, Manganese- Molybdenum and Manganese-Molybdenum-Nickel, 2003
ASTM	ASTM A307	Carbon Steel Externally Threaded Standard Fasteners, 2004
ASTM	ASTM A312	Seamless and Welded Austenitic Stainless Steel Pipe, 2006
ASTM	ASTM A320	Alloy-Steel Bolting Materials for Low-Temperature Service, 2005
ASTM	ASTM A325	High-Strength Bolts for Structural Steel Joints, 2004
ASTM	ASTM A328	Steel Sheet Piling, 2005
ASTM	ASTM A333	Seamless and Welded Steel Pipe for Low-Temperature Service, 2005
ASTM	ASTM A334	Seamless and Welded Carbon and Alloy-Steel Tubes for Low-Temperature Service, 2004
ASTM	ASTM A335	Seamless Ferritic Alloy-Steel Pipe for High-Temperature Service, 2006
ASTM	ASTM A350	Forgings, Carbon and Low- Alloy Steel, Requiring Notch Toughness Testing for Piping Components, 2004
ASTM	ASTM A351	Austenitic Steel Castings for High-Temperature Service, 2006
ASTM	ASTM A352	Steel Castings, Ferritic and Martensitic, for Pressure Containing Parts Suitable for Low-Temperature Service, 2006
ASTM	ASTM A353	Pressure Vessel Plates, Alloy Steel, 9 Percent Nickel, Double Normalized and Tempered, 2004
ASTM	ASTM A36	Carbon Structural Steel, 2005
ASTM	ASTM A366	Standard Specification for Steel, Sheet, Carbon, Cold-Rolled, Commercial Quality, 1991.”
ASTM	ASTM A387	Pressure Vessel Plates, Alloy Steel, Chromium-Molybdenum, 2006
ASTM	ASTM A388	Practice for Ultrasonic Examination of Heavy Steel Forgings, 2005
ASTM	ASTM A403	Wrought Austenitic Stainless Steel Piping Fittings, 2006
ASTM	ASTM A416	Uncoated Seven Wire Stress-relieved Steel Strand for Prestressed Concrete, 2006
ASTM	ASTM A420	Piping Fittings of Wrought Carbon Steel and Alloy Steel for Low-Temperature Service, 2006
ASTM	ASTM A421	Uncoated Stress Relieved Steel Wire for Prestressed Concrete, 2005
ASTM	ASTM A463	Steel Sheet, Cold-Rolled, Aluminum-Coated Type I and Type 2, 2005
ASTM	ASTM A475	Zinc-Coated Steel Wire Strand, 2003
ASTM	ASTM A48	Gray Iron Castings, 2003
ASTM	ASTM A490	Quenched and Tempered Alloy Bolts for Structural Steel Joints, 2004
ASTM	ASTM A515	Pressure Vessel Plates, Carbon Steel, for Intermediate- and Higher-Temperature Service, 2003
ASTM	ASTM A516	Pressure Vessel Plates, Carbon Steel, for Moderate and Lower-Temperature Service, 2006
ASTM	ASTM A522	Forged or Rolled 8 and 9% Nickel Alloy Steel Flanges, Fittings, Valves, and Parts for Low Temperature Service, 2001
ASTM	ASTM A53	Pipe, Steel, Black and Hot-Dipped Zinc Coated, Welded and Seamless, 2006
ASTM	ASTM A537	Pressure Vessel Plates, Heat Treated, Carbon-Manganese-Silicon Steel, 2006
ASTM	ASTM A541	Steel Forgings, Carbon and Alloy, Quenched and Tempered, for Pressure Vessel Components, 2005

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Organization	Standard	Title
ASTM	ASTM A553	Pressure Vessel Plates, Alloy Steel, Quenched and Tempered 8 and 9 Percent Nickel, 2006
ASTM	ASTM A563	Carbon and Alloy Steel Nuts, 2004
ASTM	ASTM A615	Deformed and Plain Billet-Steel Bars for Concrete Reinforcement, 2006
ASTM	ASTM A616	Standard Specification for Rail Steel Deformed and Plain Bars for Concrete Reinforcement, 1996.”
ASTM	ASTM A633	Normalized High-Strength Low-Alloy Structural Steel, 2006
ASTM	ASTM A645	Pressure Vessel Plates, Five Percent Nickel Alloy Steel, Specially Heat Treated, 2005
ASTM	ASTM A671	Electric-Fusion-Welded Steel Pipe for Atmospheric and Lower Temperatures, 2006
ASTM	ASTM A672	Electric-Fusion-Welded Steel Pipe for High Pressure Service at Moderate Temperatures, 2006
ASTM	ASTM A673	Sampling Procedure for Impact Testing of Structural Steel, 2005
ASTM	ASTM A691	Carbon and Alloy-Steel Pipe, Electric-Fusion-Welded for High Pressure Service at High Temperatures, 1998, Reaffirmed 2002
ASTM	ASTM A722	Standard Specification for Uncoated High-Strength Steel Bar for Prestressing Concrete, 2005
ASTM	ASTM A74	Cast Iron Soil Pipe and Fittings, 2005
ASTM	ASTM A780	Practice for Repair of Damaged Hot Dip Galvanized Coating, 2001
ASTM	ASTM A821	Standard Specification for Steel Wire, Hard Drawn for Prestressing Concrete Tanks, 2005
ASTM	ASTM B166	Nickel-Chromium-Iron Alloy (UNS No6600 and No6690) Rod and Bar”
ASTM	ASTM B167	Nickel-Chromium-Iron Alloy (UNS No6600 and No6690) Seamless Pipe and Tube, 2006
ASTM	ASTM B209	Aluminum and Aluminum Alloy Sheet and Plate, 2004
ASTM	ASTM B26	Specification for Aluminum Alloy Sand Coating, 2005
ASTM	ASTM B407	Nickel-Iron-Chromium Alloy Seamless Pipe and Tube, 2004
ASTM	ASTM B88	Seamless Copper Water Tube, 2003
ASTM	ASTM C150	Specification for Portland Cement, 2005
ASTM	ASTM C260	Air-Entraining Admixtures for Concrete, 2001
ASTM	ASTM C33	Concrete Aggregates, 2003
ASTM	ASTM C450	Prefabrication and Field Fabrication of Thermal Insulating Fitting Covers for NPS Piping, Vessel Lagging, and Dished Head Segments, 2002
ASTM	ASTM C520	Standard Test Methods for Density of Granular Loose Fill Insulations, 2004
ASTM	ASTM C533	Calcium Silicate Block and Pipe Thermal Insulation, 2004
ASTM	ASTM C549	Perlite Loose Fill Insulation, 2006
ASTM	ASTM C585	Inner and Outer Diameters of Rigid Thermal Insulation for Nominal Sizes of Pipe and Tubing (NPS System), 1990, Reaffirmed 2004
ASTM	ASTM C591	Unfaced Preformed Rigid Cellular Polyurethane Thermal Insulation, 2005
ASTM	ASTM C592	Mineral Fiber Blanket Insulation and Blanket-Type Pipe Insulation (Metal-Mesh Covered) (Industrial Type), 2004
ASTM	ASTM C612	Mineral Fiber Block and Board Thermal Insulation, 2004
ASTM	ASTM C871	Chemical Analysis of Thermal Insulation Materials for Leachable Chloride, Silicate, and Sodium Ions, 2004

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Organization	Standard	Title
ASTM	ASTM C90	Hollow Load Bearing Concrete Masonry Units, 2006
ASTM	ASTM C94	Ready-Mixed Concrete, 2005
ASTM	ASTM D1241	Materials for Soil-Aggregate Subbase, Base, and Surface Courses, 2000
ASTM	ASTM D1557	Moisture-Density Relations of Soils, and Soil-Aggregate Mixtures Using 10-lb (4.54-kg) Rammer and 18-in. (457-mm) Drop, 2002
ASTM	ASTM D2665	Poly (Vinyl Chloride) (PVC) Plastic Drain, Waste and Vent Pipe and Fittings, 2004
ASTM	ASTM E380	Standard Practice for Use of the International System of Units [SI], 1993."
ASTM	ASTM SI 10	Standard for the Use of the International System of Units (SI): the Modern Metric System, 2002
AWWA	AWWA	<i>American Water Works Association (AWWA)</i>
AWWA	AWWA D100	Standard for Welded Steel Tanks for Water Storage, 1996
AWS	AWS	<i>American Welding Society (AWS)</i>
AWS	AWS A5.1	Covered Carbon Steel Arc-Welding Electrodes, 2004
AWS	AWS A5.17	Carbon Steel Electrodes and Fluxes for Submerged Arc Welding, 1997
AWS	AWS A5.5	Low-Alloy Steel Covered Arc-Welding Electrodes, 1996
AWS	AWS D1.1	Structural Welding Code, Steel, 2006
AWS	AWS WI, CH 6	Quality Assurance, 2000
AWS	AWS WQAG	Welding Quality Assurance Guideline for Fabricators, 1997
CFR	CFR	<i>Code of Federal Regulations (CFR)</i>
CFR	33 CFR Part 105	USCG, Department of Homeland Security, Maritime Security (Facility) Regulations
CFR	33 CFR Part 126	Handling of Class 1 (Explosive) Materials or Other Dangerous Cargoes Within or Contiguous to Waterfront Facilities
CFR	33 CFR Part 127	Waterfront Facilities Handling LNG and Liquefied Hazardous Gas
CFR	33 CFR Part 149	Deep Water Ports: Design, Construction and Equipment
CFR	33 CFR Part 154	Facilities Transferring Oil or Hazardous Material in Bulk
CFR	33 CFR Part 156	Oil and Hazardous Material Transfer Operations
CFR	49 CFR Part 192	Transportation of Natural and Other Gas by Pipeline
CFR	49 CFR Part 193	Liquefied Natural Gas Facilities: Federal Safety Standards
DnV	DnV	<i>Det Norske Veritas (DnV)</i>
DnV	DnV No. 30.4	Classification Note, Foundations, 1992
DnV	DnV No. 30.5	Classification Note, Environmental Conditions and Environmental Loads, 2000
DnV	DnV OS-F101	Submarine Pipeline Systems, 2000 with Amendment October 2005
DnV	DnV RP B401	Cathodic Protection Design, 2005
DnV	DnV	Rules for Classification of Fixed Offshore Installations, 1999
DnV	DnV	Rules for Planning and Execution of Marine Operations, 2000

Table R-1 Design Standards and Codes to be Used		
Organization	Standard	Title
EEMUA	EEMUA	Engineering Equipment and Materials Users Association (EEMUA)
EEMUA	EEMUA 104	Noise: A Guide to Information required from Equipment Vendors, 1985
EEMUA	EEMUA 140	Noise Procedure Specification, 1988
EEMUA	EEMUA 141	Guide to the Use of Noise Procedure Specification, 1985
EEMUA	EEMUA 161	A Guide to the Selection and Assessment of Silencers and Acoustic Enclosures, 1988
FIP	FIP	Federation Internationale De La Precontrainte (FIP)
FIP	FIP	FIP Recommendations For Acceptance And Application Of Post-Tensioning Systems, 1993
GPA	GPA	Gas Producers Association (GPA)
GPA	GPA 181-86	GPA 181-86, "Tentative Reference Bulletin Heating Values as a Basis for Custody Transfer of Natural Gas"
GPA	GPA 2145	Physical Constants for the Paraffin Hydrocarbons and Other Components of Natural Gas, 2003
GPA	GPA 2166	Methods for Obtaining Natural Gas Samples for Analysis by Gas Chromatography, 2005
GPA	GPA 2172	Method for Calculation of Gross Heating Value, Specific Gravity a Compressibility of Natural Gas Mixtures from Compositional Analysis, 1996
GPA	GPA 2261	Analysis for Natural gas and Similar Gaseous Mixtures by Gas Chromatography, 2000
GRI	GRI	Gas Research Institute
GRI	GRI Report 89/0176,	GRI Report 89/0176, LNGFIRE: A Thermal Radiation Model for LNG Fires, 1989
GRI	GRI Report 89/0242,	GRI Report 89/0242, LNG Vapor Dispersion Prediction with the DEGADIS Dense Gas Dispersion Model, 1989
GRI	GRI Report 96/0396.5,	GRI Report 96/0396.5, Evaluation of Mitigation Methods for Accidental LNG Releases; Volume 5, Using FEM3A for LNG Accident Consequence Analyses, 1997
IALA	IALA	International Association of Lighthouse Authorities (IALA)
IALA	IALA	Aid to Navigation Review, 2005
IALA	NP 735	IALA Maritime Buoyage System, 1980
IBC	IBC	International Conference of Building Officials (ICBO)
IBC	IBC	International Building Code - 2006
IC	IC	Institute of Corrosion
IC	IC	Selection of Test Methods for Laboratory Testing of Aluminum Anodes
ICEA	ICEA	Insulated Cable Engineers Association (ICEA)
ICEA	ICEA	Power & Control Cable Documents
ICS	ICS	International Chamber of Shipping (ICS)
ICS	ICS	Tanker Safety Guide (Liquefied Gas), 2nd edition
IEEE	IEEE	Institute of Electrical and Electronic Engineers (IEEE)
IEEE	IEEE 100	Authoritative Dictionary of IEEE Standards Terms, 2000
IEEE	IEEE 112	Test Procedure for Polyphase Induction Motors and Generators, 2004
IEEE	IEEE 114	Test Procedure for Single Phase Induction Motor, 2001, Withdrawn January 2007
IEEE	IEEE 115	Test Procedures for Synchronous Machines—Part 1: Acceptance and Performance Testing—Part 2: Test Procedures and Parameter Determination for Dynamic Analysis, 1995, Reaffirmed 2002

Table R-1 Design Standards and Codes to be Used		
Organization	Standard	Title
IEEE	IEEE 141	Recommended Practice for Electric Power Distribution for Industrial Plants (Red Book), 1993, corrected page June 1998
IEEE	IEEE 142	Recommended Practice for Grounding of industrial and Commercial Power System (Green Book), 1991 with Errata March 2006
IEEE	IEEE 242	Recommended Practice for Protection and Coordination of Industrial and Commercial Power Systems (Buff Book), 2001 with Errata January 2003
IEEE	IEEE 303	Recommended Practice for Auxiliary Devices for Rotating Electrical Machines in Class I, Division 2 and Zone 2 Locations, 2004
IEEE	IEEE 315	Graphic Symbols for Electrical and Electronics Diagrams, 1975, Reaffirmed 1993
IEEE	IEEE 399	Recommended Practice for Industrial and Commercial Power Systems Analysis (Brown Book), 1997
IEEE	IEEE 446	Recommended Practice for Emergency and Standby Power Systems for Industrial and Commercial Applications (Orange Book), 1995
IEEE	IEEE 45	Recommended Practice for Electric Installations on Shipboard, 2002
IEEE	IEEE 450	Maintenance, Testing, and Replacement of Vented Lead-Acid Batteries For Stationary Applications, 2002
IEEE	IEEE 484	Recommended Practice for Installation Design and Implementation of Vented Lead-Acid Batteries for Stationary Applications, 2002
IEEE	IEEE 485	Recommended Practice for Sizing Lead-Acid Batteries for Stationary Applications, 1997, Reaffirmed 2003
IEEE	IEEE 493	Recommended Practice for Design of Reliable Industrial and Commercial Power Systems (Gold Book), 1997
IEEE	IEEE 515	Testing, Design, Installation and Maintenance of Electrical Resistance Heat Tracing for Industrial Applications, 2004
IEEE	IEEE 730.1	Software Quality Assurance Plans, 1995, Withdrawn with no superseding document
IEEE	IEEE 80	Guide for Safety in AC Substation Grounding, 2000
IEEE	IEEE 828	Software Configuration Management Plans, 2005
IEEE	IEEE 97	Recommended Practice for Specifying Service Condition in Electrical Standards, 1993
IEEE	IEEE C2	National Electrical Safety Code, 2007
IEEE	IEEE C37.	Series for Circuit Breakers, Switchgear, Relays, Substations, and Fuses
IEEE	IEEE C37.010	Application Guide for AC High-Voltage Circuit Breakers Rated on a Symmetrical Current Basis, 1999, Reaffirmed 2005
IEEE	IEEE C37.13	Low-Voltage AC Power Circuit Breakers Used in Enclosures, 1990, Reaffirmed 1995
IEEE	IEEE C37.16	Low-Voltage Power Circuit Breakers and AC Power Circuit Protectors, Preferred Ratings, Related Requirements, and Application Recommendations, 2000
IEEE	IEEE C37.2	Electrical Power System Device Function Numbers and Contact Designations, 1996, Reaffirmed 2001
IEEE	IEEE C37.50 (ANSI)	Low Voltage AC Power Circuit Breakers used in Enclosures—Test Procedures, 1989, Reaffirmed 2000
IEEE	IEEE C37.90	Relays and Relay Systems Associated with Electric Power Apparatus, 2005

Table R-1 Design Standards and Codes to be Used		
Organization	Standard	Title
IEEE	IEEE C37.90.1	Surge Withstand Capability (SWC) Tests for Protective Relays and Relay Systems, 2002
IEEE	IEEE C57	Series for Transformers, Regulators and Reactors
IEEE	IEEE C57.12.00	General Requirements for Liquid Immersed Distribution, Power and Regulating Transformers, 2006
IEEE	IEEE C57.12.01	Dry-Type Distribution and Power Transformers Including Those with Solid Cast and/or Resin-Encapsulated Windings, 2005
IEEE	IEEE C57.12.90	Liquid Immersed Distribution, Power and Regulating Transformers and Guide for Short Circuit Testing of Distribution and Power Transformers, 2006
IEEE	IEEE C57.13	Requirements for Instrument Transformers, 1993, Reaffirmed 2003
IEEE	NESC Handbook	National Electrical Safety Code Handbook Discussion of the NESC, Third Edition
IESNA	IESNA	<i>illuminating Engineers Society of North America (IESNA)</i>
IESNA	IESNA HB-9	IESNA Lighting Handbook, 9th edition, 2005
IESNA	IESNA RP-1	Office Lighting (ANSI Approved), 2004
IESNA	IESNA RP-7	Industrial Lighting, 2001 with Errata July 2004
IMO	IMO	<i>International Maritime Organization (IMO)</i>
IMO	IMO 104E	International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (IGC Code), 1993
IMO	IMO 290E	Recommendations on the Safe Transport of Dangerous Cargoes and Related Activities in Port Areas, 2007
IMO	IMO-520E	Marine Pollution, MARPOL, 1973/78, Consolidated Edition, 2002
IMO	IMO-640E	Marine Pollution, MARPOL, 1994/95, Amendments Edition, 1996
IMO	Marpol 73/78	International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto (MARPOL 73/78), with Amedments through October 2006
IPMCSP	IPMCSP	<i>Institute of Petroleum Model Codes of Safety Practice (IPMCSP)</i>
IPMCSP	Part 3, 1981	Refining Safety Code
IPMCSP	Part 9, and LPG	
IRI	IRI	<i>Industrial Risk Insurers (IRI)</i>
IRI	IRI IM 2.5.2,	Oil and Chemical Plant Layout and Spacing, 2000
ISA	ISA	<i>Instrument Society of America (ISA)</i>
ISA	ISA 12.1	Electrical Instruments in Hazardous Atmospheres, 1960
ISA	ISA 12.13 Part I	Performance Requirements for Combustible Gas Detectors, 1995
ISA	ISA 12.13 Part II	Installation, Operation and Maintenance of Combustible Gas Detectors, 1987
ISA	ISA 18.1	Annunciator Sequences and Specifications, 1979, Reaffirmed 2004
ISA	ISA 20	Specification Forms for Process Measurement and Control Instruments, Primary Elements and Control Valves, 2000
ISA	ISA 5.1	Instrumentation Symbols and Identification, 1984, Reaffirmed 1992
ISA	ISA 5.2	Binary Logic Diagrams for Process Operations, 1976, Reaffirmed 1992
ISA	ISA 5.3	Graphic Symbols for Distributed Control/Shared Display Instrumentation, Logic and Computer Systems, 1983
ISA	ISA 5.4	Instrument Loop Diagrams, 1991

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Organization	Standard	Title
ISA	ISA 5.5	Graphic Symbols for Process Displays, 1985
ISA	ISA 50.02 P2	Fieldbus Standard for use in Industrial Control Systems—Part 2: Physical Layer Specification and Service Definition, 1992
ISA	ISA 50.1	Compatibility of Analog Signals for Electronic Industrial Process Instruments, 1982, Reaffirmed 1992
ISA	ISA 51.1	Process Instrumentation Terminology, 1979, Reaffirmed 1993
ISA	ISA 7.0.01	Quality Standard for Instrument Air, 1996
ISA	ISA 71.04	Environmental Conditions for Process Measurement and Control Systems: Airborne Contaminants, 1985
ISA	ISA 75.01.01	Flow Equations for Sizing Control Valves, 2002, Reprinted 2005
ISA	ISA 75.02	Control Valve Capacity Test Procedures, 1996
ISA	ISA 75.08.01	Face-to-Face Dimensions for Integral Flanged Globe-Style Control Valve Bodies (ANSI Classes 125, 150, 250, 300, and 600), 2002
ISA	ISA 75.15	Face-to-Face Dimensions for Butt-weld-End Globe-Style Control Valves (ANSI Classes 150, 300, 600, 900, 1500 and 2500), 1994
ISA	ISA 84.01	Application of Safety Instrumented Systems for the Process Industries, 1996
ISA	ISA 92.0.01 P1	Performance Requirements for Toxic Gas—Detection Instruments: Hydrogen Sulfide, 1998
ISA	ISA MC96.1	Temperature Measurement Thermocouples, 1982
ISA	ISA RP 12.1	Electrical Instruments in Hazardous Atmospheres, 1960
ISA	ISA RP 12.12	Nonincendive Electrical Equipment for use in Class I and II, Division 2 and Class III, Divisions 1 and 2 Hazardous (Classified) Locations, 1994
ISA	ISA RP 12.12.03	Recommended Practice for Portable Electronic Products Suitable for Use in Class I and II Division 2, Class I, Zone 2 and Class III, Divisions 1 and 2 Hazardous (Classified) Locations, 2002
ISA	ISA RP 12.6	Wiring Practices for Hazardous (Classified) Locations Instrumentation - Part 1: Intrinsic Safety, 1995
ISA	ISA RP 16.1	Terminology, Dimensions and Safety Practices for Indicating Variable Area Meters (Rotameters) - Glass Tube, 1959
ISA	ISA RP 16.2	Terminology, Dimensions and Safety Practices for Indicating Variable Area Meters (Rotameters) - Metal Tube, 1959
ISA	ISA RP 16.3	Terminology, Dimensions and Safety Practices for Indicating Variable Area Meters (Rotameters)—Extension-Type Glass Tube, 1959
ISA	ISA RP 16.4	Nomenclature and Terminology for Extension-Type Variable Area Meters (Rotameters), 1960
ISA	ISA RP 2.1	Manometer Tables, 1978
ISA	ISA RP 2.1	Manometer Tables, 1978
ISA	ISA RP 3.2	Flange Mounted Sharp Edged Orifice Plates for Flow Measurement, 1978
ISA	ISA RP 31.1	Specification, Installation and Calibration of Turbine Flowmeters, 1977
ISA	ISA RP 42.1	Nomenclature for Instrument Tube Fittings, 1992
ISA	ISA RP 60.1	Recommended Practice for Control Center Facilities, 1990
ISA	ISA RP 60.11	Crating Shipping and Handling for Control Centers, 1991
ISA	ISA RP 60.2	Control Center Design Guide and Terminology, 1995
ISA	ISA RP 60.3	Human Engineering for Control Centers, 1985
ISA	ISA RP 60.4	Documentation for Control Centers, 1990

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Organization	Standard	Title
ISA	ISA RP 60.6	Nameplates, Labels, and Tags for Control Centers, 1984
ISA	ISA RP 60.8	Electrical Guide for Control Centers, 1978
ISA	ISA RP 60.9	Piping Guide for Control Centers, 1981
ISA	ISA S18.1	Annunciator Sequences and Specifications, 1979, Reaffirmed 1994
ISA	ISA S20	Specification Forms for Process Measurement and Control Instruments, Primary Elements and Control Valves, 2000 (cannot find correct title but there is some variation on titles for this standard)
ISA	ISA S5.1	Instrumentation Symbols and Identification, 1984, Reaffirmed 1992
ISA	ISA S5.2	Binary Logic Diagrams for Process Operations, 1976, Reaffirmed 1992
ISA	ISA S5.3	Graphic Symbols for Distributed Control/Shared Display Instrumentation, Logic and Computer Systems, 1983
ISA	ISA S5.4	Instrument Loop Diagrams, 1991
ISA	ISA S51.1	Process Instrumentation Terminology, 1979, Reaffirmed 1993
ISA	ISA S7.0.01	Quality Standard for Instrument Air, 1996
ISA	ISA S75.01.01	Flow Equation for Sizing Control Valves, 2002 (see corrected standard number in red)
ISA	ISA S75.05.01	Control Valve Terminology, 2000, Reaffirmed 2005 (see corrected standard number in red)
ISA	ISA S84.01	Application of Safety Instrumented Systems for the Process Industry, 1996
ISO	ISO	<i>International Organization for Standardization (ISO)</i>
ISO	ISO 11546-2	Acoustics—Determination of sound insulation performances of enclosures - Part 2: Measurements in situ (for acceptance and verification purposes), 1995
ISO	ISO 14163	Acoustics—Guidelines for noise control by silencers, 1998
ISO	ISO 1996-1	Acoustics—Description, measurement and assessment of environmental noise - Part 1: Basic quantities and procedures, 2003
ISO	ISO 1996-2	Acoustics—Description and measurement of environmental noise - Part 2: Acquisition of data pertinent to land use, 1987, Amendment 1, 1998
ISO	ISO 1996-3	Acoustics—Description and measurement of environmental noise - Part 3: Application to noise limits, 1987
ISO	ISO 1999	Acoustics—Determination of occupational noise exposure and estimation of noise-induced hearing impairment, 1990
ISO	ISO 2151	Acoustics - Noise Test Code for Compressors and Vacuum Pumps - Engineering Method (Grade 2), 2004
ISO	ISO 2923	Acoustics—Measurement of noise on board vessels, 1996, technical corrigendum 1997
ISO	ISO 3741	Acoustics—Determination of sound power levels of noise sources using sound pressure—Precision methods for reverberation rooms, 1999
ISO	ISO 3744	Acoustics—Determination of sound power levels of noise sources using sound pressure—Engineering method in an essentially Free-Field over a reflecting plane, 1994
ISO	ISO 3746	Acoustics—Determination of sound power levels of noise sources using sound pressure—Survey method using an enveloping measurement surface over a reflecting plane, 1995
ISO	ISO 4871	Acoustics—Declaration and verification of noise emission values of machinery and equipment, 1996

Table R-1 Design Standards and Codes to be Used		
Organization	Standard	Title
ISO	ISO 4872	Acoustics—Measurement of airborne noise emitted by construction equipment intended for outdoor use, 1979
ISO	ISO 6081	Acoustics—Noise emitted by machinery and equipment—Guidelines for the preparation of test codes of engineering grade requiring noise measurements at the operator's or bystander's position, 1986
ISO	ISO 717-1	Acoustics—Rating of sound insulation in buildings and of building elements - Part 1: Airborne Sound Insulation, 2006
ISO	ISO 717-2	Acoustics—Rating of sound insulation in buildings and of building elements - Part 2: Impact Sound Insulation, 2006
ISO	ISO 7235	Acoustics—Measurement procedures for ducted silencers—Insertion loss, flow noise and total pressure loss, 2003
ISO	ISO 8297	Acoustics—Determination of sound power levels of multi-source industrial plants for evaluation of sound pressure levels in the environment—Engineering method, 1994
ISO	ISO 8579-1	Acceptance code for gears - Part 1: Test code for airborne sound, 2002
ISO	ISO 9001	Quality management systems—Requirements, 2000
ISO	ISO 9002	Quality systems model for quality assurance in production, installation and service, 1994
ISO	ISO 9612	Acoustics—Guidelines for the measurement and assessment of exposure to noise in a working environment, 1997
MSS	MSS	<i>Manufacturer's Standardization Society (MSS)</i>
MSS	MSS	Manufacturers Standardization Society:
MSS	MSS SP44	MSS SP44, Steel Pipeline Flanges, 2006
MSS	MSS-SP-44	Steel Pipeline Flanges, 2006 (same as above)
MSS	MSS-SP-75	Specification for High Test Wrought Butt Welding Fittings, 2004
MSS	MSS-SP-97	Integrally Reinforced Forged Branch Outlet Fittings – Socket Welding, Threaded, and Butt Welding Ends, 2006
NACE	NACE	<i>National Association of Corrosion Engineers (NACE)</i>
NACE	NACE MR0175	Petroleum and Natural Gas Industries - Materials for use in H ₂ S-Containing Environments in Oil and Gas Production - ISO 15156 - Part 1, Part 2, and Part 3
NACE	NACE RP0169	Standard Recommended Practice Control of External Corrosion on Underground or Submerged Metallic Piping Systems, 2002
NACE	NACE RP0176	Corrosion Control of Steel, Fixed Offshore Steel Platforms Associated with Petroleum Production, 2003
NACE	NACE RP0178	Fabrication Details, Surface Finish Requirements, and Proper Design Considerations for Tanks and Vessels to be Lined for Immersion Service, 2003
NACE	NACE RP0198	The Control of Corrosion Under Thermal Insulation and Fireproofing Materials - A Systems Approach, 2004
NACE	NACE RP0274	High Voltage Electrical Inspection of Pipeline Coatings, 2004
NACE	NACE RP0387	Metallurgical and Inspection Requirements for Cast Sacrificial Anodes for Offshore Applications, 1999
NACE	NACE RP0394	Application, Performance and Quality Control of Plant Applied, Fusion-Bonded Epoxy External Pipe Coating, 1994
NACE	NACE RP0572	Design, Installation, Operation and Maintenance of Impressed Current Deep Groundbeds

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Organization	Standard	Title
NACE	NACE TM0190	Impressed Current Test Method for Laboratory Testing of Aluminum Anodes, 2006
NACE	NACE TM0284	Evaluation of Pipeline and Pressure Vessel Steels for Resistance to Hydrogen-Induced Cracking, 2003
NAPCA	NAPCA	National Association of Pipe Coating Applicators (NAPCA)
NAPCA	NAPCA Bulletin 1-65-94	Recommended Specification Designations for Coal Tar Enamel Coatings
NEMA	NEMA	National Electrical Manufacturers Association (NEMA)
NEMA	NEMA 250	Enclosures for Electrical Equipment 1000 Volts Maximum, 2003
NEMA	NEMA IA 2.1	Programmable Controllers—General Information, 2005
NEMA	NEMA IBU 1	Busways, 2002
NEMA	NEMA ICS 1	Industrial Control and Systems: General Requirements, 2001
NEMA	NEMA ICS 2	Industrial Control and System Controllers Contactors and Overload Relays Rated 600 Volts, 2005
NEMA	NEMA ICS 3	Industrial Control and Systems: Medium Voltage Controllers Rated 2001 to 7200 Volts AC
NEMA	NEMA ICS 6	Enclosures for Industrial Control and Systems, 2001
NEMA	NEMA MG 1	Motors and Generators, 2004
NEMA	NEMA MG 10	Energy Management Guide for Selection and Use of Polyphase Motors, 2001
NEMA	NEMA MG 2	Safety Standard for Construction and Guide for Selection, Installation, and Use of Electric Motors and Generators, 2001
NEMA	NEMA SG 5	Power Switchgear Assemblies, 1995
NEMA	NEMA TR-1	Transformers, Regulators and Reactors, 1993
NEMA	NEMA TR-27	Commercial, Institutional and Industrial Dry-Type Transformers
NEMA	NEMA WC 27	Protective Coverings for Wire and Cable, 1991
NEMA	NEMA WC 3	Rubber Insulated Wire and Cable, 2006
NEMA	NEMA WC 5	Thermoplastic-Insulated Wire and Cable for the Transmission and Distribution of Electrical Energy, 1992
NFPA	NFPA	National Fire Protection Association (NFPA)
NFPA	NFPA	“Electrical Installations in Hazardous Locations”, by Schram and Earkley
NFPA	NFPA 10	Standard for Portable Fire Extinguishers, 2007
NFPA	NFPA 101	Life Safety Code, 2000
NFPA	NFPA 11	Standard for Low-Expansion Foam, 2005
NFPA	NFPA 11A	Standard for Medium- and High-Expansion Foam Systems, 2005
NFPA	NFPA 12	Standards for Carbon Dioxide Extinguishing System, 2005
NFPA	NFPA 13	Standard for Installation of Sprinkler, Systems, 2007
NFPA	NFPA 14	Standard for the Installation of Standpipe, Private Hydrant, and Hose Systems, 2007
NFPA	NFPA 15	Water Spray Fixed Systems for Fire Protection, 2007
NFPA	NFPA 16	Standard for the Installation of Foam-Water Sprinkler and Foam-Water Spray Systems, 2007
NFPA	NFPA 17	Standard for Dry Chemical Extinguishing Systems, 2002
NFPA	NFPA 20	Standard for the Installation of Stationary Pumps for Fire Protection, 2007
NFPA	NFPA 22	Standard for Water Tanks for Private Fire Protection, 2003

Table R-1 Design Standards and Codes to be Used		
Organization	Standard	Title
NFPA	NFPA 220	Types of Building Connection, 2006
NFPA	NFPA 24	Standard for Installation of Private Fire Service Mains and Their Appurtenances, 2007
NFPA	NFPA 30	Flammable and Combustible Liquids Code, 2003
NFPA	NFPA 325	Guide to Fire Hazard Properties of Flammable Liquids, Gases, and Volatile Solids
NFPA	NFPA 37	Standard for the Installation and Use of Stationary Combustion Engines and Gas Turbines, 2006
NFPA	NFPA 496	Purged and Pressurized Enclosures for Electrical Equipment, 2003
NFPA	NFPA 54	National Fuel Gas Code, 2006
NFPA	NFPA 59A	Standard for Production, Storage and Handling of Liquefied Natural Gas (LNG), 2006
NFPA	NFPA 600	Standard for Industrial Fire Brigades, 2000
NFPA	NFPA 70	National Electrical Code, 2005
NFPA	NFPA 77	Recommended Practice on Static Electricity, 2007
NFPA	NFPA 780	Standard for Installation of Lightning Protection Systems, 2004
NFPA	NFPA 850	Recommended Practice for Fire Protection for Electric Generating Plants and High Voltage Direct Current Converter Stations, 2005
NSC	NSC	National Safety Council
NSC	NSC 2117.1	Safety Requirements for Confined Spaces
OCIMF	OCIMF	Oil Companies International Marine Forum (OCIMF)
OCIMF	OCIMF	Safety Inspection Guidelines and Terminal Safety Checklist for Gas Carriers
OCIMF	OCIMF	Guidelines and Recommendations for the Safe Mooring of Large Ships at Piers and Sea Islands, 1978
OCIMF	OCIMF	Prediction of Wind and Current Loads on VLCCs, 2nd Edition, 1994
OCIMF	OCIMF 10	Guide to Contingency Planning for the Gas Carrier Alongside and Within Port Limits 2nd Edition, 1999
OCIMF	OCIMF 18	ISGOTT, International Safety Guide for Oil Tankers and Terminals, 5th Edition, 2006
OCIMF	OCIMF 20	Mooring Equipment Guidelines, 2nd Edition, 1997
OCIMF	OCIMF 25	Prediction of Wind Loads on Large Liquefied Gas Carriers, 1st Edition, 1995
OCIMF	OCIMF 30	Recommendations for Manifolds for Refrigerated Liquefied Gas Carriers (LNG), 2nd Edition, 1994
OCIMF	OCIMF 31	Safety Guide for Terminals Handling Ships Carrying Liquefied Gases in Bulk, 2nd Ed, 1993
OCIMF	OCIMF 9	Guide on Marine Fire Protection and Emergency Evacuation, 1987
OCIMF	OCIMF12	Guide to Contingency Planning for Marine Terminals Handling Liquefied Gases in Bulk, 2001
PFI	PFI	Pipe Fabrication Institute (PFI)
PFI	PI	Fabricating Tolerances
PI	PI	Perlite Institute (PI)
PI	PI 201	Compacted Density

Table R-1 Design Standards and Codes to be Used		
Organization	Standard	Title
PIANC	PIANC	<i>PIANC and U.S.A.C.E. Standards for Deep Draft Navigation Standards</i>
PIANC	PIANC	Dangerous Goods in Ports: Recommendations for Port Designers and Port Operators, Permanent International Association of Navigation Congresses (PIANC), 1985
PIANC	PIANC	Guidelines for the Design of Fenders Systems, Permanent International Association of Navigation Congresses (PIANC), 2002
PPCI	PPCI	Prestressed Precast Concrete Institute (PPCI)
PPCI	PPCI	General Information
SIGTTO	SIGTTO	<i>Society of International Gas Tanker and Terminal Operators (SIGTTO)</i>
SIGTTO	SIGTTO	Liquefied Gas Handling Principles on Ships and in Terminals, 3rd Edition, 2000
SIGTTO	SIGTTO	Guidelines for Hazard Analysis: Aid to Management of Safe Operations in Port, 1992
SIGTTO	SIGTTO	Guidelines for the Alleviation of Excessive Surge Pressures on ESD, 1987
SIGTTO	SIGTTO	Liquefied Gas Handling Principles on Ships and in Terminals, 3rd Edition, 2000
SIGTTO	SIGTTO IP No. 14	Site Selection & Design for LNG Ports and Jetties, 1st Edition, 1997
SIGTTO	SIGTTO IP No. 16	Ship/Shore Interface—Safe Working Practice for LPG & Liquefied Chemical Gas Cargoes, 1997
SIGTTO	SIGTTO IP No. 4	Accident Prevention: The Use of Hoses and Hard-Arms at Marine Terminals Handling Liquefied Gases, 2nd Ed 1996
SIGTTO	SIGTTO IP No. 5	Ship/Shore Interface—Communications Necessary for Matching Ship to Berth, 1997
SMACNA	SMACNA	<i>Sheet Metal and Air Conditioning Contractors National Association (SMACNA)</i>
SMACNA	SMACNA 1	HVAC Duct Construction Standards - Metal and Flexible, 2005
SSPC	SSPC	<i>Steel Structures Painting Council (SSPC)</i>
SSPC	SSPC PA 1	Shop, Field and Maintenance Painting, 2004
SSPC	SSPC PA 2	Measurement of Dry Coating Thickness with Magnetic Gages, 2004
SSPC	SSPC PA 3	A Guide to Safety in Paint Application, 1982, editorial changes 1995
SSPC	SSPC PS 8.00	Guide to Topcoating Zinc-Rich Primers, 2002
SSPC	SSPC PS 8.01	Rust Preventive Compounds (Thick Film), 1064
SSPC	SSPC PT 3	Basic Zinc Chromate - Vinyl Butyral Washcoat, 2004
SSPC	SSPC SP 1	Solvent Cleaning, 1982
SSPC	SSPC SP 10	Near-White Blast Cleaning, 2004
SSPC	SSPC SP 11	Power Tool Cleaning to Bare Metal
SSPC	SSPC SP 2	Hand Tool Cleaning, 2004
SSPC	SSPC SP 3	Power Tool Cleaning, 2004
SSPC	SSPC SP 4	Flame Cleaning of New Steel, 2004
SSPC	SSPC SP 5	White Metal Blast Cleaning, 2004
SSPC	SSPC SP 6	Commercial Blast Cleaning, 2004
SSPC	SSPC SP 8	Pickling, 1985

Table R-1 Design Standards and Codes to be Used		
Organization	Standard	Title
SSPC	SSPC Vis 1	Guide and Reference Photographs for Steel Surfaces Prepared by Dry Abrasive Blast Cleaning, 2002
TEMA	TEMA	<i>Tubular Exchanger Manufacturers Association (TEMA)</i>
TEMA	TEMA 1	Standards of the Tubular Exchanger Manufacturers Association, 1999
UL	UL	<i>Underwriters Laboratory (UL)</i>
UL	UL 1	Flexible Metal Electrical Conduit, 2005
UL	UL 1604	Electrical Equipment for Use in Class I and II, Division 2, and Class III Hazardous (Classified) Locations, 1994 pages revised in 2004
UL	UL 1709	Rapid Rise Fire Tests of Protection Materials for Structural Steel, 2005
UL	UL 4	Armored Cable, 2004
UL	UL 404	Gauges, Indicating Pressure, for compressed gas service, 2005 pages revised in 2006
UL	UL 44	Rubber Insulated Wire and Cables, 2005
UL	UL 464	Audible Signal Appliances, 2005
UL	UL 467	Electrical Grounding and Bonding Equipment, 2004
UL	UL 498	Attachment Plugs and Receptacles, 2006
UL	UL 5	Safety Requirements for Surface Metal Raceways and Fittings, 2004
UL	UL 50	Electric Cabinets and Boxes, 2006
UL	UL 508	Electrical Industrial Control Equipment, 2005
UL	UL 514	Fittings for Conduit and Outlet Boxes, 2005
UL	UL 595	Marine-Type Electric Lighting Fixtures, 1985, announcement sheet in 1996
UL	UL 6	Rigid Metal Conduit, 2004
UL	UL 67	Electric Panelboards 2006
UL	UL 674	Electric Motors and Generators for use in Division I Hazardous (Classified) Locations, 2003, pages revised in 2006
UL	UL 698	Industrial Control Equipment for use in Hazardous (Classified) Locations, 1999
UL	UL 719	Non-metallic Sheathed Cables, 2006, pages revised in 2007
UL	UL 783	Electrical Flashlights & Lanterns for use in Hazardous Locations, Class I, Group C & D, 2003
UL	UL 823	Electrical Heaters for Use in Hazardous (Classified) Locations, 2006
UL	UL 844	Electric Lighting Fixtures for Use in Hazardous (Classified) Locations, 2006
UL	UL 870	Wireways, Auxiliary Gutters, and Associated Fittings for Surface Metal Raceways and Fittings, 2003
UL	UL 886	Outlet Boxes and Fittings for use in Hazardous (Classified) Locations, 2005
UL	UL 913	Intrinsically Safe Apparatus and Associated Apparatus for use in Class I, II, and III, Division 1 Hazardous (Classified) Locations, 2006
UL	UL 924	Emergency Lighting and Power Equipment, 2006
UL	UL 94	Tests for Flamibility of Plastic Materials for Parts in Devices and Appliances, 1996, pages revised in 2006
USCG	USCG	<i>United States Coast Guard</i>
USCG	USCG	Modified U.S.C.G. Regulations for LNG Navigation Regulations
USDOD	USDOD	<i>United States Department of Defense</i>
USDOD	USDOD	Military Handbook, Piers and Wharfs, MIL-HDBK-1025/1, June 1994