

1.0 PURPOSE

- To control the design and development of new products.
- To define the checks and balances applied to the design and development activity.
- To control and verify the design of the products, assign design function responsibilities to qualified personnel, define technical interfaces, ensure that the product meets the specified requirements, verify that the design output meets the design input requirements and ensure that design changes are properly reviewed before being implemented into production.
- To expose the product design to persons with viewpoints and opinions other than those of product design and development engineers.
- To reevaluate distributed products.
- To maximize protection against oversight that might adversely affect product quality, safety, and efficiency.
- To establish a standard format for all engineering drawings and subsequent engineering documentation as referenced in MIL-STD-100 and superseding ASME/SAE/ANSI and ASTM standards. This extends to MIL-DTL-31000 Technical Data Packages, General, Specification for; MIL-STD-973 Configuration Management and MIL-HDBK-831 Preparation of Test Reports.

2.0 SCOPE

This procedure applies to the development of all new products from the initial design to the release for manufacturing. This procedure also applies to design changes to existing product.

This QAP does not cover in-house design of tooling, jigs, fixtures or production aids which are not used as a media of product acceptance.

Tools used as a media of acceptance as defined in MIL-STD-45662 and superseding ISO 10012-1 will be considered source procured as all other instruments used for product acceptance. Such items will be controlled per QAP 11.0 - Inspection, Measuring, and Test Equipment and as such, shall be calibrated and controlled per WI-10.0 Calibration Master Schedule Log, Use of.

3.0 RESPONSIBILITIES

The Engineering Manager or designee with appropriate authority approves the product specification for major new products, product revisions, and accessories.

Engineering evaluates performance, durability, safety, reliability, and maintainability of the design under expected storage and operational conditions; verifies that all design features are as intended and that all authorized design changes have been accomplished and recorded; and, validates computer systems and software.

A Project Manager via customer request provides initial product requirements, performance target values, and market utility assessments.

Engineering with the help from Manufacturing and Quality ensures the availability of products and services required for the manufacturing and testing of the product. The QE/Quality Manager, Engineering Manager or qualified designee monitors the tests for schedule and performance requirements conformance.

The Engineering Manager or designee with appropriate authority advises and reviews necessary testing, inspection requirements, and manages subcontractor testing.

Human Resources ensure that sufficient personnel are available and suitable for the production of the product, and that an appropriate training program is instituted.

Manufacturing and Quality ensures that the facilities, instrumentation, machinery, equipment, and services are available for the efficient production of the product.

The Engineering Manager with support from Quality and the Project Manager, tracks revision levels and changes to preliminary drawings. The Engineering Manager or designee with appropriate authority approves revisions to preliminary drawings.

The Engineering Manager or designee with appropriate authority manages CAD/CAE activities and assures that the CAD/CAE system is capable of interfacing with the customer's CAD/CAE system.

The Project manager with support from Engineering and Quality monitor subcontractor's performance during prototype.

The Engineering Manager or designee with appropriate authority and request support from additional functions as needed, coordinates:

- the design and production of sketches, drawings, and layouts
- the building and testing of models, prototypes, and pilots, including the acquisition of materials
- the collection and recording of test data
- any modifications to the product specification, if necessary
- the review of requirements for completeness and clarity

At all stages of development, the Product Review Team, representing Engineering, Manufacturing, Quality and if required, the customer, may determine whether to modify the product specification or change the design of the product based on test results.

The Engineering Manager, Project Manager or designee with appropriate authority coordinates the appropriate customer approvals for design changes.

4.0 PROCEDURE

4.1 Product Review Team

QAP 3.0 - Contract Review and QAP 23.0 - New Product Design and Development Procedure are the base documents for this QAP.

The Project Manager, Engineering Manager and/or designee translates the customer's needs into technical specifications or a (TDP) Technical Data Package.

The Product Review Team (PRT) is composed of senior management from Engineering, Quality, Manufacturing, Sales and Project Management and may include a customer representative and reviews the specification and ensures it is producible, verifiable, and controllable.

The PRT generates a design plan identifying activities and assigning responsibility to the activities. Those assigned to perform design activities meet company qualifications. All records of meeting minutes and qualification testing and subsequent follow-up reviews are stored per QAP 16.0 - Quality Records.

The Product Review Team is chaired by the most senior-qualified representative (normally Engineering) and meets at predetermined intervals as defined and established by the PRT.

4.2 Market Review

Any company employee, customer or supplier can initiate a concept for a new product. Features of a new product are based upon market need and in-house manufacturability to be profitable.

There are two elements of Market Review.

- First is the pre-development, benchmarking then profitability/ROI research and definition. From the collected data, an initial PRT will be called by the Engineering Manager or a Project Manager to perform a baseline study to determine if the profit potential warrants the development of a full business plan with 5-year projection and Performa. It is the Project Managers responsibility for the development of the Business Plan in standard industry format and presenting the plan to senior management. If the proposed project is rejected, the Project Manager shall notify the initial submitter of the like.
- Post-Development Benchmarking. This normally occurs after the product has been released to the open market and has 6 to 12 months of service. At that time, the Project Manager will perform a benchmarking-market analysis to determine pros and cons of product and determine if changes are needed to better meet customer needs. Once the Project Manager has completed his analysis, a report in industry format, shall be presented to the PRT. This is the make or break point of the project. If the product needs improvement, the suggested changes will be forwarded to the Engineering Manager for further review and determination of a proper course of action. If it is determined that the product is not a good company manufacturing fit or if the market sales do not support continued production, the suggested action shall be presented to senior management for disposition.

All records including qualification testing and subsequent follow-up reviews are stored per QAP 16.0 - Quality Records.

4.3 Product Definition

In the course of a products life cycle, Engineering established all fundamentals with regards to defining such elements as:

- Full product configuration
- Use of and non-use of
- Liability concerns
- Product design changes
- Product life cycle
- Fit, Form and Functionality
- Training requirements including the development of a user manual, if needed

All of the above elements shall be recorded and documented as defined per QAP 5.0 - Document and Data Control.

Likewise, if special training is required, Engineering with the assistance of Manufacturing, Quality and the customer, if needed, shall define and develop such training as defined per QAP 18.0 – Training.

The Engineering Manager or Designee assures that qualified personnel perform design activities. Records of employees' qualifications are maintained by a Human Resources Representative and as per QAP 18.0 – Training.

A member of the engineering team or a design agent develops preliminary drawings. The Engineering Manager or an authorized assigned designee approves preliminary drawings.

Customer requirements are incorporated into the design via the PRT and the Project Manager. The PRT communicates the requirements to the design team through the Engineering Manager or Project Manager. The PRT, chaired by the Engineering Manager, assures that these requirements are clear and complete.

The Engineering Manager ensures that the product design adheres to the applicable statutory and regulatory requirements of the country of manufacture and countries of sale.

NOTE: If Patent rights are in question, Legal Council will be retained for full compliance under Federal Law USC Title 35.

Computer Aided Design and Engineering (CAD/CAE) are utilized when appropriate by qualified personnel. The Engineering Manager assures that subcontracted CAD/CAE activities are monitored by the PRT and controlled by

- Engineering
- Project Management

The company CAD/CAE system at is maintained by the Engineering Manager or a qualified IT/Engineering staff member to ensure two-way interface with the customer's system.

The Engineering Manager through the PRT generates required documentation to support the design. The documents are controlled and maintained by Engineering per QAP 5.0 - Document and Data Control.

4.4 Qualify and Verify

All activity related to Quality Control shall be maintained and recorded per QAP 16.0 - Quality Records.

All purchasing activity through prototype development and into production shall be per QAP 6.0 - Purchasing.

Prototype programs include comprehensive design verification activities. Engineering with support from other functions as needed will be responsible for testing/analyzing the design and records test results on in the Master Job Folder as defined in WI-1.0 Master Job Folder Setup. When appropriate, product life, reliability, and durability testing shall be part of the test program. The on-line Master Job File is maintained by the Quality department, but can be edited and updated by Engineering or the controlling Project Manager. All records are maintained as defined in QAP 16.0 - Quality Records.

The Engineering and Quality Manager track and monitor the testing to ensure schedule and performance requirements are met. During pre-production, the PRT has all authority for approvals and/or in-process changes to testing procedures.

The Engineering Manager with approval from the PRT reviews the test results and, if required, the preliminary design drawings are returned to engineering design to be revised.

When possible, the same subcontractors that provided material and services for prototype are used for pilot runs and production. The Quality Manager or assigned designee tracks the performance of the subcontractor as defined per WI-11.0 Approved Supplier List.

The preliminary drawings are released for a pilot run. Quality records results and the PRT evaluates the pilot run.

Engineering defines the test procedures and specifies the expected outcome and acceptance criteria which as required and defined by the PRT, includes types of analysis and conclusion for PRT final review.

Quality and/or engineering records the test results on Master Job File located in the Master Job Folder as defined in WI-1.0 Master Job Folder Setup. The Master Job File is primarily maintained by the quality department per QAP 16.0 - Quality Records.

4.5 Final Review

A final review to determine if the product meets the requirements of the product specification is held by the PRT.

Engineering with the support of quality qualifies the pilot run determining if the product meets the requirements of the product specification.

Subcontracted, suitably qualified facilities may be used for specialized testing.

The final PRT review includes review of define test procedures and adherence to specific expected outcomes including acceptance criteria.

Per WI-1.0 Master Job Folder Setup, the Project Manager releases the design to production.

4.6 Requalification

Periodically, the product is reevaluated to ensure that the design is still valid with respect to all specified requirements. The review includes base lining current test results to the initial test and acceptance criteria. This information is collected, reviewed and submitted to the PRT for final analysis and direction, if needed.

Records of the requalification tests are maintained on-line on the Master Job File. The PRT with engineering concurrence approves the requalification review acceptance. The Master Job File is processed and maintained per WI-1.0 Master Job Folder Setup, QAP 5.0 - Document and Data Control and QAP 16.0 - Quality Records.

4.7 Revision Control

Design changes are given the same review as the initial design. The PRT reviews changes and modifications to the design of the product. Engineering, Quality, Purchasing and Manufacturing department representatives revise all down-stream documentation including supplier and customer notifications of changed issued in the form of and (ECN) Engineering Change Notice.

The Project Manager or assigned designee coordinates applicable changes with the customer and obtains the necessary customer approval or waiver of approval. The ECN is used to document this action.

Documentation processing is best illustrated in the QAM, page 14, 4.10 Configuration Management, Documentation Flow/Product Realization Interface.

5.0 RELATED DOCUMENTS

QAM – Quality Assurance Manual

QAP 3.0 Contract Review

QAP 5.0 - Document and Data Control

QAP 6.0 - Purchasing

QAP 11.0 - Inspection, Measuring, and Test Equipment Document and Data Control

QAP 16.0 - Quality Records

QAP 18.0 – Training

QAP 23.0 New Product Design and Development Procedure

WI-1.0 Master Job Folder Setup

WI-10.0 Calibration Master Schedule Log, Use of

WI-11.0 Approved Supplier List

MIL-STD-100 – Engineering Drawing Standards as reference

MIL-DTL-31000 Technical Data Packages, General, Specification for as reference

MIL-STD-973 Configuration Management as reference

MIL-HDBK-831 Preparation of Test Reports as reference

Referenced to *Best Practices in Mechanical Engineering*

Additional Reference Documents and Industry Standards

APPENDIX A – INDUSTRY CODES AND STANDARDS

APPENDIX B - PRT/DESIGN CRITERIA AND CONSIDERATIONS

**APPENDIX A
INDUSTRY CODES AND STANDARDS**

The design and specification of all work shall be in accordance with all applicable laws and regulations of the federal government, the State of Origin, and the applicable local codes and ordinances. A summary of the codes and industry standards to be used in design and construction is listed below.

- ✓ American Boiler Manufacturers Association (ABMA)
- ✓ AFBMA - Antifriction Bearing Manufacturers Association
- ✓ AGMA - American Gear Manufacturers Association Specification 390 – Gear Classification
- ✓ AMCA - Air Movers Control Association
- ✓ ASCE - American Society of Civil Engineers
- ✓ ASME - American Society of Mechanical Engineers Boiler and Pressure Vessel Code:

Section II - Materials Specification - Section V - Nondestructive Examination

- ✓ PTC 22 - Performance Test Code
- ✓ ASNT - American Society for Nondestructive Testing
- ✓ AWS - American Welding Society
- ✓ AWA-D-100 Welded Steel Tanks for Water Storage
- ✓ EJMA - Expansion Joint Manufacturing Association
- ✓ EPA - Environmental Protection Agency
- ✓ HI - Hydraulic Institute
- ✓ HEI - Heat Exchange Institute
- ✓ IEEE - Institute of Electric and Electronics Engineers
- ✓ ISA - Instrument Society of America
- ✓ NBS - National Bureau of Standards
- ✓ NEMA - National Electrical Manufacturers Association
- ✓ OSHA - Occupational Safety and Health Administration, Department of Labor
- ✓ PFI - Pipe Fabrication Institute
- ✓ TEMA - Tubular Exchanger Manufacturers Association
- ✓ TIMA - Thermal Insulation Manufacturers Association
- ✓ BOCA - Building Officials and Code Administrators
- ✓ API - American Petroleum Institute

SL Specification for Line Pipe

ASTM - American Society for Testing and Materials

ASTM Standard Material Specifications

- ✓ ASTM A36-Standard Specification for Structural Steel
- ✓ ASTM A53-Standard Specification for Pipe, Steel Black and Hot-Dipped Zinc-Coated Welded and Seamless
- ✓ ASTM A105-Standard Specification for Forgings, Carbon Steel for Piping Components
- ✓ ASTM A106 Standard Specification for Seamless Carbon Steel Pipe for High Temperature Service
- ✓ ASTM A159 Standard Specification for EFW Steel Pipe (size 4' and over)
- ✓ ASTM A126 Standard Specification for Gray Iron Castings for Valves, Flanges, and Pipe Fittings
- ✓ ASTM A182-Standard Specification for Forged or Rolled Alloy Steel Pipe Flanges/Forged Fitting and Valves and Parts for High-Temperature Service
- ✓ ASTM A193-Standard Specification for Alloy-Steel and Stainless Steel Bolting Materials for High-Temperature Service

- ✓ ASTM A194-Standard Specifications for Carbon and Alloy Steel Nuts for Bolts for High-Pressure and High-Temperature Service
- ✓ ASTM A213-Standard Specification for Seamless Ferritic and Austenitic Alloy Steel Boiler, Superheater, and Heat-Exchanger Tubes
- ✓ ASTM A216-Standard Specifications for Steel Castings, Carbon, Suitable for Fusion Welding, for High-Temperature Service
- ✓ ASTM A217-Standard Specification for Steel Castings, Martenistic Stainless and Alloy for Pressure Containing Parts, Suitable for High-Temperature Service
- ✓ ASTM A234-Standard Specification for Piping Fittings of Wrought Carbon Steel and Alloy Steel for Moderate and Elevated Temperatures
- ✓ ASTM A307-Standard Specifications for Carbon Steel Bolts and Studs, 60,000 psi, Tensile Strength
- ✓ ASTM A312-Standard Specification for Seamless and Welded Austenitic Stainless Steel Pipes
- ✓ ASTM A335-Standard Specification for Seamless Ferritic Alloy-Steel Pipe for High-Temperature Service
- ✓ ASTM A351-Standard Specification for Steel Castings, Austenitic, for High Temperature Service
- ✓ ASTM A387-Standard Specification for Pressure Vessel Plates, Alloy Steel Chromium-Molybdenum
- ✓ ASTM A403-Standard Specification for Wrought Austenitic Stainless Steel Piping Fittings
- ✓ ASTM A490-Specification for Heat-Treated, Steel Structural Bolts, 150 ksi Tensile Strength
- ✓ ASTM B61-Standard Specification for Steam or Valve Bronze Castings
- ✓ ASTM B62-Composition Bronze or ounce Metal Castings
- ✓ ASTM B75-Standard Specification for Seamless Copper Tube
- ✓ ASTM B88-Standard Specification for Seamless Copper Water Tube
- ✓ ASTM B111-Specification for Copper and Copper-Alloy Seamless Condenser Tubes and Ferrule Stock
- ✓ ASTM B209-Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate
- ✓ ASTM C195 (83)-Specification for Mineral Fiber Thermal Insulating Cement
- ✓ ASTM L411 (87)-Test Method for Hot-Surface Performance of High-Temperature Thermal Insulation
- ✓ ASTM C533-Specification for Calcium Silicate Block and Pipe Thermal Insulation
- ✓ ASTM C612-Specification for Mineral Fiber Block and Board Thermal Insulation
- ✓ ASTM D1248-Specification for Polyethylene Plastics Molding and Extrusion Materials
- ✓ ASTM D1785-Standard Specification for Poly(Vinyl Chloride) (PVC) Plastic Pipe, Schedules 40, 80 and 120
- ✓ ASTM D2241-Standard Specification for Poly(Vinyl Chloride) (PVC) Pressure-Rated Pipe (SDR Series)
- ✓ ASTM D3350-Standard Specification for Polyethylene Plastic Pipe and Fittings Materials
- ✓ ASTM F441-Specification for Chlorinated Poly (Vinyl Chloride) (CPVC) Plastic Pipe, Schedules 40 and 80
- ✓ ANSI - American National Standards Institute
- ✓ ANSI/NFPA 70 - National Electrical Code (NEC)
- ✓ ANSI C50.10 - Synchronous Machines
- ✓ ANSI C50.14 - Combustion-Gas Turbine Driven Cylindrical Rotor Synchronous Generators
- ✓ ANSI C50.22 - Guide for Testing Insulation Resistance of Rotating Machinery
- ✓ ANSI B1.1 - Unified Inch Screw Threads (UN and UNR thread form)
- ✓ ANSI B18.2.1 - Square and Hex Bolts and Screws, Inch Series

- ✓ ANSI B133.1 - Procurement Standards for Gas Turbines
- ✓ ANSI B133.8 - Gas Turbine Installation Sound Emissions
- ASME - American Society of Mechanical Engineers
 - ✓ ASME Section I – Rules for Construction of Power Boilers
 - ✓ ASME Section VIII - Rules for Construction of Pressure Vessels
 - ✓ ASME Section IX - Qualification Standard for Welding and Brazing Procedures, Welders, Brazers, and Welding and Brazing Operators
 - ✓ ASME PTC-22 - Power Test Code for Gas Turbine Power Plants
 - ✓ ASME 1.20.1-Pipe Threads, General Purpose (inch)
 - ✓ ASME B16.1 - Cast Iron Pipe Flanges and Flanged Fittings, Class 25, 125, 250, and 800 lb.
 - ✓ ASME B16.3 - Malleable Iron Threaded Fitting, Class 150 and 300
 - ✓ ASME B16.5 - Pipe Flanges and Flanged Fittings, Steel Nickel Alloy and Other Special Alloys
 - ✓ ASME B16.9 - Factory-Made Wrought Steel Buttwelding Fittings
 - ✓ ASME B16.10 - Face-to-Face and End-to-End Ferrous Valves
 - ✓ ASME B16.11 - Forged Steel Fittings Socket-Welding and Threaded
 - ✓ ASME B16.20 - Metallic Gaskets for Pipe Flanges - Ring Joint, Spiral Wound & Jacketed
 - ✓ ASME B16.21 - Nonmetallic Flat Gaskets for Pipe Flanges
 - ✓ ASME B16.24 - Bronze Pipe Flanges and Flanged Fittings, Class 150 and 300 lb.
 - ✓ ASME B16.25 - Buttwelding Ends
 - ✓ ASME B16.28 - Wrought Steel Buttwelding Short Radius Elbows and Returns
 - ✓ ASME B16.34 - Valves - Flanged, Threaded and Welding End
 - ✓ ASME B16.36 - Orifice Flanges
 - ✓ ASME B16.47 - Large Diameter Steel Flanges NPS26 through NPS60
 - ✓ ASME B31.1. - Power Piping
 - ✓ ASME B36.10M - Welded and Seamless Wrought Steel Pipe
 - ✓ ASME B36.19M - Stainless Steel Pipe
 - ✓ ASME B46.1 - Surface Texture
 - ✓ ANSI B73.1 - Specifications for Horizontal End Suction Centrifugal Pumps for Chemical Process
- MSS - Manufacturers Standardization Society of the Valve and Fittings Industry
 - ✓ MSS-SP 55 - Quality Standard for Steel Castings for Valves, Flanges, Fittings and Other Piping Components -Visual Method
 - ✓ MSS-SP 67 - Butterfly Valves
 - ✓ MSS-SP 80 - Bronze Gate-Globe-Angle and Check Valves
 - ✓ MSS-SP 84 - Steel Valves-Socket Welding and Threaded Ends
- AWS - American Welding Society
 - ✓ AWS - D1.1 - Structural Welding Code-Steel
- AWWA - American Water Works Association.
 - ✓ AWWA-C504 - Rubber Seated Butterfly Valves
 - ✓ AWWA-D100 - Standards for Welding Steel Tanks
- SSPC - Steel Structures Painting Council, Volume 2
 - ✓ SSPC-PA1 - Shop, Field, and Maintenance Painting
 - ✓ SSPC-PA2 - Measurement of Dry Paint Thickness with Magnetic Gages
 - ✓ SSPC-SPI - Solvent Cleaning
 - ✓ SSPC-SP2 - Hand Tool Cleaning
 - ✓ SSPC-SP3 - Power Tool Cleaning
 - ✓ SSPC-SP6 - Commercial Blast Cleaning
 - ✓ SSPC-SP8 - Pickling

- ✓ SSPC-SP10 - Near-White Blast Cleaning

National Fire Protection Association (NFPA) codes

- ✓ NFPA 10, Portable Fire Extinguishers
- ✓ NFPA 12, Carbon Dioxide Extinguishing Systems
- ✓ NFPA 13, Installation of Sprinkler Systems
- ✓ NFPA 14, Installation of Standpipe and Hose Systems
- ✓ NFPA 15, Water Spray Fixed Systems
- ✓ NFPA 20, Centrifugal Fire Pumps
- ✓ NFPA 22, Fire Water Storage Tank
- ✓ NFPA 24, Private Fire Service Mains and Their Appurtenances
- ✓ NFPA 26, Supervision of Valves Controlling Water Supplies for Fire Protection
- ✓ NFPA 30, Flammable and Combustible Liquids Code
- ✓ NFPA 37, Stationary Combustion Engines and Gas Turbines.
- ✓ NFPA 70, National Electrical Code
- ✓ NFPA 72E, Automatic Fire Detectors
- ✓ NFPA 214, Water Cooling Towers

Cooling Tower Institute (CTI)

Hydraulic Institute Standards (HIS)

Uniform Building Code (UBC)

UL – Underwriter’s Laboratory

UFC - Uniform Fire Code

NEC - National Electrical Code

Other recognized standards may be used as required to serve as design, fabrication, and construction guidelines when not in conflict with the above listed standards.

The codes and industry standards used for design, fabrication, and construction will be the codes and industry standards, including all addenda, in effect as stated in equipment and construction purchase or contract documents.

**APPENDIX B
PRT/DESIGN CRITERIA AND CONSIDERATIONS**

A. Drawing Media (Choose all that apply)

- (1) Non-digital (Specify _____)
- (2) Digital Data (Specify _____)
- (3) Other (Specify _____)

B. Drawing Format (Choose One)

- (1) Contractor
- (2) Government (forms supplied by the Government)
- (3) Government (forms supplied by the Contractor)

C. Drawing Sheet Size (and Format) (Choose One)

- (1) ASME Y14.1
- (2) ASME Y14.1M

D. Drawing Reference to MIL-STD-100 (4.1.1) (Choose all that apply)

- (1) Reference to MIL-STD-100 will not appear on drawing
- (2) Reference to MIL-STD-100 will be made on drawing
- (3) Reference to MIL-STD-100 to include applicable revision level
- (4) Reference to MIL-STD-100 to include applicable revision level and notices

E. Application Data (Choose all that apply)

- (1) Contractor option
- (2) Required
 - (a) On drawing
 - (b) By reference. Specify _____
 - (c) Contractor option
- (3) General use or multi-use notations
 - (a) allowed
 - (b) not allowed

F. Drawing Detail (ASME Y14.24M) (Choose all that apply)

- (1) Monodetail
- (2) Multidetail
- (3) Tabulated

G. Dimensioning and Tolerancing (Choose all that apply)

- (1) Metric
- (2) Decimal-inch
- (3) Application of ASME Y14.5M
 - (a) Specific issue (revision) required (Specify issue _____)
 - (b) Issue in effect (Specify issue _____)

H. Drawing Notes (Choose One)

- (1) On drawing
- (2) By reference. Specify _____
- (3) Contractors option

I. Types of Drawings (ASME Y14.24M and Chapter 200) (Choose one)

- (1) Contractor selects
- (2) Government selects

J. Maintenance of Multi-Sheet Drawings (ASME Y14.35M)

(Choose all that apply)

- (1) Drawing revision level (DOD preferred)
- (2) All sheets same revision level
- (3) Sheet revision level

K. Redrawn Drawings (redrawing without change) (ASME Y14.35M) (Choose one)

- (1) Advance revision level
- (2) Revision level is not advanced

L. Maintenance of Revision History (Choose all that apply)

- (1) Contractor option
- (2) Optional methods
 - (a) Remove one or more revision record as required
 - (b) Remove all previous revision history
 - (c) Remove all revision history but retain line entry for revision authorization and date of revision
 - (d) Remove all except revision preceding current
 - (e) Maintain revision history in its entirety

M. Adding Sheets (ASME Y14.35M) (Choose all that apply)

- (1) Contractor option
- (2) Optional methods
 - (a) Renumber sheet using consecutive whole numbers
 - (b) Number added sheets in decimal-number sequence
 - (c) Number added sheets in alpha-numeric sequence

N. Deleting Sheets (ASME Y14.35M) (Choose all that apply)

- (1) Contractor option
- (2) Optional methods
 - (a) Renumber all affected remaining sheets
 - (b) Affected remaining sheets not renumbered (revision status of sheets block is updated with notations such as CANC or DEL)

O. Markings on Engineering Drawings (Choose one)

- (1) Special items and processes apply
 - (a) Applicable symbols (Specify_____)
 - (b) Applicable special notes (Specify_____)
- (2) Special items and processes do not apply

P. Associated Lists (ASME Y14.34M) (Choose all that apply)

- (1) Non-digital (Specify_____)
- (2) Digital Data (Specify_____)
- (3) Other (Specify_____)

Q. Types of Associated Lists (ASME Y14.34M) (Choose all that apply)

- (1) Parts Lists
 - (a) Integral
 - (b) Separate
 - (c) Contractors option
- (2) Data Lists
- (3) Index Lists
- (4) Other (Specify_____)

R. Angle of Projection (ASME Y14.3M) (Choose one)

(1) 3rd Angle

(2) 1st Angle

S. Language (Choose one)

(1) English required

(2) Other (as specified)